

Needs Analysis Research Report

Active I

Healthy Active Living for Seniors



Programme: Grundtvig

Duration: 2013–2016

Project number: 539664-LLP-1-2013-1-DE-GRUNDTVIG-GMP



This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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Deliverable number: 2.3 (Consolidation of needs analysis research findings)

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1 Building a common understanding

For a common understanding of the terms used in the needs analysis and therefore for the whole project and the program, there are some definitions of the key terms:

Healthy living: The practice of any behavior or activity that enhances or improves health and reduces the risk factors for disease and prevent these. The definition of the World Health Organization (WHO) defines *health* as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1946). One method of enhancing the own health condition is to do exercises and to conduct physical activity. Another factor that influences health is nutrition.

Exercise and physical activity: According to the definition of the American College of Sports Medicine (ACSM), *exercise* is a “planned, structured, and repetitive movement to improve or maintain one or more components of physical fitness” (ACSM, 2009, p. 1511). But this definition is very restricted. Instead, we want to introduce the term *physical activity* which is a “body movement that is produced by the contraction of skeletal muscles and that increases energy expenditure” (ACSM, 2009, p. 1511). Daily activities like going to the supermarket by foot or bike, gardening and taking stairs instead of the elevator are examples of daily physical activities. For a healthy living, any kind of physical activity is good to maintain or even improve the physical and mental health.

Nutrition: Nutrition, nourishment, healthy food, healthy diet or healthy eating, these are terms which in total mean more or less the same. There may be exact definitions of the terms, but for our purpose it is only important that we understand these terms as a whole eating behavior and habit instead of focusing only on nutrients and their composition.

Mental well-being: A definition of this term is difficult because of its different use in literature. According to the WHO (2011), well-being is a part of our mental health: “Mental health is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community”. Health already was defined above. More than that, well-being can mean that you are in a good mood, have positive feelings, are satisfied et cetera. Some

aspects of well-being or rather some tools of reaching mental well-being are stress management, relaxation, mental training, empowerment and mindfulness.

1.1 Health Promotion

The definition of the WHO that is provided above defines *health* as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1946). Since the Ottawa Charter of 1986, the understanding of health has changed to a less static understanding where “health is a positive concept emphasizing social and personal resources, as well as physical capacities” and “is seen as a resource for everyday life, not the objective of living” (WHO, 2009, p. 1). Health promotion is therefore seen as “the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment” (WHO, 2009, p. 1). Health promotion action aims at “ensuring equal opportunities and resources to enable all people to achieve their fullest health potential” which includes “access to information, life skills and opportunities for making healthy choices” (WHO, 2009, p. 2). The Ottawa Charter of 1986 furthermore says that “people cannot achieve their fullest health potential unless they are able to take control of those things which determine their health” (WHO, 2009, p. 2). These definitions leads to two further comments about the common understanding and theoretical considerations of our future course concept:

- (1) With respect to a model of health we want to introduce the ***model of salutogenesis*** by Antonovsky (1987) to you. In contrast to a pathological orientation that asks why people get sick, Antonovsky asks in his salutogenetic orientation why people stay well and how they can recover from disease. Beside the concept of *generalized resistance resources* which are individual (e.g., physical factors, coping strategies) and social/cultural factors (e.g., money, cultural stability and social support), he developed the concept of *sense of coherence* (SOC) that is a “global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that

- (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement" (Antonovsky, 1987, p. 19). The sense of coherence is, according to Antonovsky, a major determinant in the health/disease continuum and consists of three components: comprehensibility, manageability and meaningfulness. The *sense of comprehensibility* is a cognitive sense and refers to the extent to which a person perceives an internal or external stimuli as "ordered, consistent, structured, and clear, rather than as noise-chaotic, disordered, random, accidental, inexplicable" (p. 17). The *sense of manageability* is the "extent to which one perceives that resources are at one's disposal which are adequate to meet the demands posed by the stimuli that bombarded one" (p. 17). Resources aren't only personal resources but also the trust that one can count on other people e.g., friends, spouse, a physician or God. This sense is the cognitive-emotional component of the SOC. *Sense of meaningfulness* is the motivational component of the sense of coherence. It is the "extent to which one feels that life makes sense emotionally, that at least some of the problems and demands posed by living are worth investing energy in, are worthy of commitment and engagement, are challenges that are "welcome" rather than burdens that one would much rather do without" (p. 18). The understanding of this model in our context is important as people with a strong SOC are more likely to decide to start or maintain a healthy living even if the correlation between SOC and relevant health practices is not yet clear (Bundeszentrale für gesundheitliche Aufklärung [BZgA], 2001).
- (2) Health promotion has to be seen from two different perspectives: the **environmental** prevention and the **behavioral** prevention. *Environmental prevention* means that the external conditions that can affect personal health have to be changed in order that everyone has the opportunity to make healthy choices. This approach aims at policy makers, institutions, organizations and communities which can change the environment and conditions where people live (e.g., cycle tracks in the city) and work (e.g., working environment).

Organizations can influence the environmental prevention by providing a high quality course concept with qualified instructors to the seniors for instance. *Behavioral prevention* in contrast means that the individual –in this case seniors- learns and uses possibilities and skills to improve his or her own health conditions. Behavioral prevention aims at the development and strengthening of personal and social resources and competences that one has to improve the own health conditions and that of other people. Another aim is the development and strengthening of the disposition to use these resources and competencies in an appropriate way (Brodtmann, 1998). Beckers, Holz, Jansen and Mayer (1992) express themselves that health education should enable a person to behave adequately to a situation and to hold the balance between the requirements of the situation (what you should do) and your personal needs and possibilities (what you can and want to do).

Brodtmann (1998) summarized these perspectives in the following model (see figure 1).

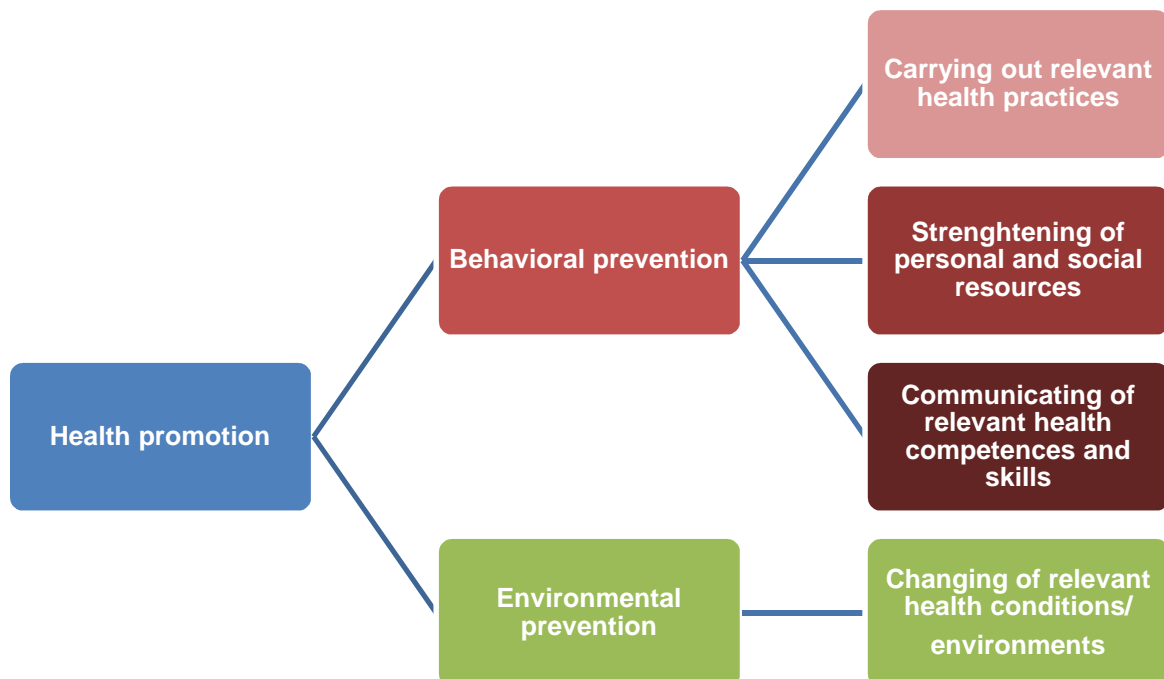


Figure 1. Health promotion (translated and modified after Brodtmann, 1998, p. 22)

Goals of our healthy living course

Out of these goals of the different approaches of health promotion one can define more exact goals for the aspects physical activity, nutrition and mental well-being

(see table 1) which will be reached with different objectives. We want to entitle the goals with: “healthy lifestyle in a healthy environment”.

Table 1. Goal matrix “healthy lifestyle in a healthy environment”

	Physical activity	Nutrition	Mental well-being
Carrying out relevant health practices	knowledge and motivation to behavior change		
	Commitment to physical activity	Commitment to healthy diet	Commitment to mental well-being
	To be familiar with exercises and apply them in everyday life	To be familiar with healthy eating guidelines and apply them in everyday life	To be familiar with mental techniques as well as exercises and apply them in everyday life
Strengthening of personal and social resources	Strengthening of physical resources :		
	<ul style="list-style-type: none"> - Body perception - Endurance - Strength - Flexibility - Coordination 	<ul style="list-style-type: none"> - Body perception 	<ul style="list-style-type: none"> - Body perception - Relaxation ability
	Strengthening of psychological resources :		
	<ul style="list-style-type: none"> - Self-efficacy regarding physical activity - Self-esteem - Body image - Mood 	<ul style="list-style-type: none"> - Self-efficacy regarding nutrition - Body image 	<ul style="list-style-type: none"> - Self-efficacy regarding mental well-being
	Strengthening of social resources :		
	<ul style="list-style-type: none"> - Promotion of social support regarding physical activity - Promotion of social integration 	<ul style="list-style-type: none"> - Promotion of social support regarding healthy diet - Promotion of social integration 	<ul style="list-style-type: none"> - Promotion of social support regarding mental well-being - Promotion of social integration
Communicating of relevant health competences and skills	Knowledge of relevant basic knowledge :		
	<ul style="list-style-type: none"> - Security aspects - Training control - Load control - Health effects 	<ul style="list-style-type: none"> - Food security - Food composition - Calories - Food preparation - Health effects 	<ul style="list-style-type: none"> - Techniques of mental well-being - Health effects
Changing of relevant health conditions	<ul style="list-style-type: none"> - Allocation of high quality programs - Education of qualified trainers - Access to endangered target groups - Quality management 		

For a better understanding of the table and therefore of the goals of our course concept each field will be described more detailed in the following passage.

Carrying out relevant health practices

This goal describes the overall request of our course, namely behavior change towards a healthy active living. It is one thing to have knowledge about a healthy active lifestyle and health practices, but it is another, more difficult thing to carry out these health practices. To reach this goal, that the seniors will use the health practices physical activity, nutrition and mental well-being, it will be important that they understand and internalize the sense and benefit of the health practices for their own health (sense of meaningfulness, salutogenesis) and that they have techniques (e.g., action planning, barrier management) to implement the familiar physical exercises, prepare a healthy meal and use familiar mental well-being techniques in everyday life and therefore be committed to physical activity, healthy diet and mental well-being. In the following chapter you will find a model of behavior change which will describe the processes that are underlying a behavioral change towards commitment to physical activity, healthy diet and mental well-being.

Strengthening of personal and social resources

Every person has more or less strongly developed personal physical, psychological and social resources which keep one healthy and enables a person to encounter environmental requirements (see definition of the WHO, 2009). Physical activity, healthy diet and mental well-being offer the opportunity to strengthen physical and psychological personal as well as social resources respectively.

The goal of our course will be to enhance -depending of the kind of **physical activity**- endurance, strength, flexibility as well as coordination skills (especially balance to prevent falls) through physical activity which are per se **physical health resources** (summary: Brehm, Bös, Oppen & Saam, 2002; Bös & Brehm, 2006). With the improvement of these skills, seniors will be able to conduct the activities of daily living which otherwise could be hindered with increased age. Furthermore body perception should be raised by physical activity which means a sensitivity for effects of physical activity on body and mind. With this ability seniors have a better understanding of the effects of physical activity on their health condition and well-being as well as a tool of load control so that physical activity won't lead to injuries due to overload (Brodthmann, 1998; Lohmann, Walscheck & Euskirchen, n.y.).

Beside these physical effects, our physical activity program should strengthen **psychological resources** such as mood, self-efficacy regarding physical activity, body image which describes the perception and rating of the body (appearance, physical ability of endurance, strength, etc.) and self-esteem. Especially the concept self-efficacy needs a closer consideration due to a high significance in our behavior change model. *Perceived self-efficacy* can be defined as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 2003, p. 3) or shortly as peoples belief in one’s ability to succeed in specific situations. With a high level of self-efficacy (those who believe they can perform well) seniors are more likely to view “difficult tasks [in our case behavior change, start of physical activity, change in eating behavior] as challenges to be mastered rather than as threats to be avoided” (Bandura, 1994). Self-efficacy can be developed and enhanced by action experience (e.g., experience of a successfully completed physical activity), observation of a model (e.g., successful completed physical activity by a person of the same age, gender and similar state of effort), verbal influence (e.g., praise by the instructor, feedback, self-instructions) and information out of experienced physical and emotional states during physical activity body perception (Brehm & Pahmeier, 2006).

Also **social resources** like social support and social integration should be strengthened by physical activity. Well-being and health profit directly from social integration of persons, when one has the feeling of being integrated, loved, esteemed, valued and accepted. Especially seniors who already have lost their spouse and children moved away, often suffer loneliness. They can profit from each other in a physical activity group by doing things together, sharing experiences and build up a trustful contact and relationship to other seniors. Together with social support (help in problematic situation by others, e.g., motivating each other to visit the healthy active living course) social resources can lead to the beginning and commitment of physical activity. Social integration and social support have strong protective health effects (WHO, 2003).

Parallel with the strengthening of personal resources by physical activity, we defined the aims of health promotion through **healthy diet** and food culture (taste, senses etc.) as follows: A healthy and balanced diet should strengthen the **physical**

resource of body perception. For older people, the danger of an unhealthy diet not only lies in fatty and highly salted diets but also in malnutrition when one has insufficient nutrition intake that doesn't cover daily nutritional requirements. Seniors have to experience either what it feels like when one eats lesser and healthier (e.g., better food tolerance, less problems in stomach, less body (fat) mass) or what it means to have sufficient nutrition intake (e.g., less deficiency symptoms). Also the feeling of being hungry and thirsty as well as having had enough of food is something that can be perceived and that will enhance the physical resources of health. Overweight or obese seniors will lose weight and body fat due to a change in diet and therefore can improve the body composition. Furthermore healthy diets should directly influence the physical resources with their well-known effects on body (e.g., vitamins, minerals, calcium against osteoporosis, etc.).

Above this improvement of physical resources, the aim will be to strengthen the **psychological resources** of self-efficacy regarding healthy food choices and body image. As described above for physical activity, the seniors will be taught that it is possible to prepare healthy food and that this is also valid when they have to cook only for themselves if they are living alone. Through a healthy diet, the body image which is the rating of appearance (e.g., loss of body fat) and physical and mental ability (e.g., better ability due to less deficiency symptoms) can be improved.

With the preparation of a healthy diet together with friends, partners or in a cooking class, the social life will be enhanced which strengthens the **social health resources** of social support and social integration. As described above, this is a very important aspect because the feelings that you can get from a good social network has a protective effect on health and the support of partners and friends can lead to a change in nutrition pattern (WHO, 2003).

The third part of our project is **mental well-being**. We define the following aims of our course on the personal health resources for mental well-being. Methods of mental well-being and relaxation will improve the relaxation ability which is part of the **physical resources** of one's health. Relaxation ability empowers the seniors to counterbalance daily physical and psychological stress situations which could affect their health condition. The use of mental well-being and relaxation techniques (cognitive or physical) also leads to an improved body perception that sensitized for

effects of breathing, muscle contraction, meditation, mindfulness and others on body and mind. Mental well-being will furthermore lead to a more conscious treatment of the own body and (especially for mindfulness meditation) be more present and mindful in daily life. On a psychological level, mental well-being will also have an influence on the **psychological resource** self-efficacy regarding relaxation and mental well-being and the feeling of well-being. Last but not least mental well-being will strengthen **social resources** as described above when mental well-being is conducted in groups.

Communicating of relevant health competences and skills

To use methods for a healthy living like physical activity, nutrition and mental well-being, it will be necessary that the seniors learn some relevant basic knowledge for each part. Therefore the course should communicate some knowledge about security rules (indication and contraindication of different kinds of physical activity, caution with some diseases and medications), training and load control and health aspects on physical and mental health of physical activity. Knowledge of food composition (e.g., food pyramid), special needs of seniors, food security to avoid foodborne illness, daily calorie intake, methods to buy and prepare food (also in smaller portions for seniors who are living alone) and health effects of healthy nutrition will be aimed at by communication health knowledge regarding healthy diets. For mental well-being the knowledge about different methods and techniques will be communicated as well as the effects on mental and physical health.

Changing of relevant health conditions

On the level of environmental prevention, we should aim at providing a high quality course concept which will be implemented by well-educated trainers. With a high quality and a quality management that will evaluate and certificate the quality of the course as well as the online planner, we can allocate a tool for seniors and therefore change the health condition in a small way, even when we aren't able to change the environment of the participants. By opening the course to all seniors, we will provide a course that can be accessed even by endangered seniors (e.g., low income).

Methodical and didactical considerations

To reach these goals, we suggest the use of didactical principles to strengthen theoretical knowledge and to make the health effects alive e.g., the methodical line from Kleinert and Neuber (1996) that is shown in figure 2. Although the methodological principles have been developed for adolescents, the emotional approach of mediation by experience is promising also for older adults. It is a combination of emotions and cognition.

The line starts with undergoing physical and psychological processes during activities of healthy living: sensation, perception and feeling. Through structured reflection and the dealing with this undergoing, the adventures become to experiences and the people understand the background of their action. This finally leads to autonomous actions where one can implement, test and construct healthy practices in daily life (self-formation) (Kleinert & Neuber, 1996; Neuber & Wentzek, 2005).

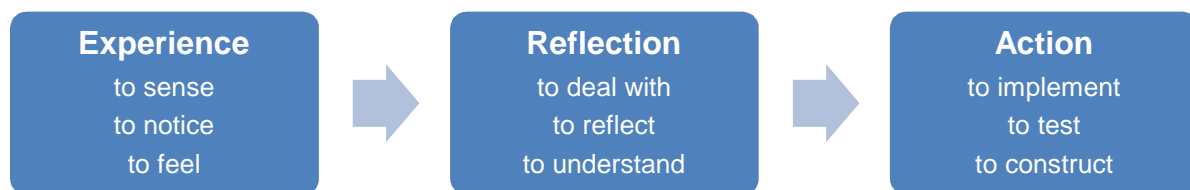


Figure 2. Methodical line (translated after Neuber & Wentzek, 2005, p. 24)

Further methodical principles to reach the goals mentioned above will be: *variety* in course concept and *sense of achievement* that every person can collect positive experiences with healthy living; *voluntariness*, *creativity* and *participation* (co-determination and co-responsibility) to strengthen personal responsibility to a healthy active lifestyle (Lohmann et al., n.y.).

1.2 Process of health behavioral change

One prominent part of our course concept will be the support of health behavior change towards a healthy active living. Changing one's health behavior or lifestyle regarding exercise, nutrition or mental well-being isn't easy on no account. The

critical reflection and change of previous habits or preferences is difficult and exhausting most of the time. Research shows that changing health-risk behavior has to be understood as a multistage process. There are different models and health behavioral change theories (e.g., stage model: Transtheoretical Model (TTM) of behavior change by Prochaska and DiClemente (1983) or process models: the Health Action Process Approach (HAPA, Schwarzer, 1992) or the Motivation-Volition model (Mo-Vo, Fuchs, 2007). We decided to communicate a simplified model for our purpose that is a synopsis out of models of behavior change to communicate the basic idea of behavior change. It is arranged out of the knowledge and experience by Dr. Marion Golenia, an expert in health behavior change of the University of Muenster. (some actual literature: Allmer, 2001; Evers, Klusman, Ziegelmann, Schwarzer & Heuser, 2012; Fuchs, Göhner, Seelig, Fleitz, Mahler & Schittich, 2010; Fuchs, Seelig & Göhner, 2012; Gellert, Ziegelmann & Schwarzer, 2012; Golenia, 2009; Küper & Schwarzer, 2012; Parschau, Fleig, Koring, Lange, Knoll et al., 2013; Schütz, Wurm, Warner, Wolff & Schwarzer, 2013).

As mentioned above, behavior change is a process that covers different stages. For each stage and each transition between two stages, respectively, one needs important and relevant comprehension and beliefs that lead to the transition from one stage to another. There already exist arrangements and assistance to support people in their certain stage. Central goals and relevant starting points to support a behavior change are described in the following passage. Additionally, you will find the stages of health behavior change in figure 3.

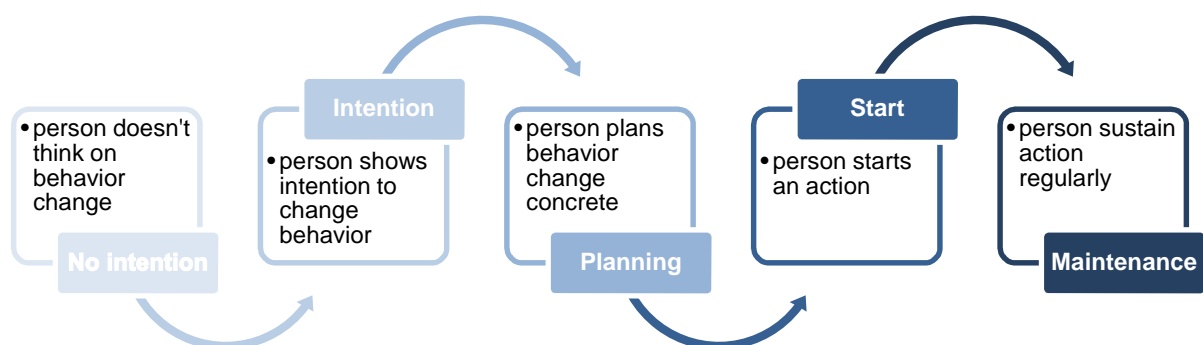


Figure 3: Process of behavior change

Stage of no intention

Individuals in the stage of no intention don't see any cause to critical reflect their lifestyle or health (-risk) behavior respectively. This could be caused by different reasons:

- (1) Individuals already live a healthy lifestyle
- (2) Individuals don't know what is healthy and what is not and therefore don't question their own behavior
- (3) Individuals know what is healthy but don't behave in an appropriate way.

Possible reasons for this behavior are:

- Individuals don't have any complaints, so that they don't feel a psychological strain
- Individuals underestimate their individual health risk
- Individuals don't see any benefit in beneficial actions
- Individuals don't have the belief that they can become active by themselves and change their habits and behavior (missing self-efficacy)

Behavior change of people of category two or three can be initiated through communication of comprehensible health information (what is healthy and what is not). Additionally self-efficacy has to be strengthened that they gain the belief in oneself of being able to improve health. The goal is the building of an intention: "I want to change XY".

Goal	Building of intention
Starting points	<ul style="list-style-type: none"> • Communicate knowledge • Support of realistic cost-benefit analysis of healthy behavior (consideration of effort vs. benefit) • Support of realistic risk assessment • Show assistance/strategies • Strengthen self-efficacy

Stage of intention and planning

Individuals in this stage already have the intention to change their health behavior (e.g., "I want to raise my physical activity level", "I want to eat more vegetables and fruits", "I want to handle stress in a better way"). To realize this intention in daily living two aspects are important:

- (1) Individuals should define concrete plans of **what** they want to do/change in daily living and decide **when, where, how** and **with whom** they want to do this (planning)
- (2) People should become aware of possible external and internal barriers that could endanger the implementation and previously think about coping strategies or define alternative plans (coping planning)

Goal	Support implementation through planning
Starting points	<ul style="list-style-type: none"> • Show spectrum on possible health behaviors and support choice of activities appropriate to personal interests and experiences (WHAT) • Show offers in the personal environment (WHEN, WHERE, HOW, with WHOM) • Support concrete and realistic planning • Support coping planning (in case of X, I will do Y!)

Stage of start

Individuals in this stage already started their healthy behavior and gain experience with this new (or renewed) behavior. In this stage it is important to direct the attention of the individuals to positive experiences during action and enable feelings of success. In case of problems (e.g., deviation between expectations and experience) it is important to look for constructive solutions or alternative behaviors. Only people who experience the new behavior as satisfactory and/or feel positive effects will maintain this behavior. The communication of strategies (strategies of volitional self-monitoring) which enables the individuals to counteract the omission of the new behavior in concrete situations (fighting the inner couch potato) is another important factor in the starting stage.

Goal	Maintain implementation
Starting points	<ul style="list-style-type: none"> • Enable positive experiences (well-being, effects, feeling of success) and guidance of the attention to these experiences • Consider interests and needs (when choosing content and methods) • Communication of strategies of volitional self-monitoring

Stage of maintenance

Individuals in this stage already changed their behavior and want/should maintain it long-lastingly and implement it in daily living regularly. In the installation of new

behaviors relapses won't be missing. Individuals will fall back into their "old" behavior. Undesirable behaviors (e.g., eating fast food) will occur; desirable behaviors (biking instead of taking the car) will be omitted. The constructive exposure with such situations will be crucial in maintaining or refusing the intended behavior change generally. Therefore the appropriate exposure with "relapses" in old habits has to be communicated.

Goal	Counteract dropout after relapses
Starting points	<ul style="list-style-type: none"> Communicate appropriate strategies in exposure with relapses (avoidance of all-or-none-principle)

Implementation in our services

With respect to our services in the course, namely healthy living course, online planner and senior sport event, we will be present in different stages. We certainly will reach "planer" and "starter" with the healthy living course. They already need to have the intention to change behavior to become aware of our course and decide to participate. We expect "maintainer" in the final senior sport event because one needs a relative stable behavior to train for a competition. For the online planner people out of every stage are possible. It is important to consider that the process of behavior change can develop in both directions so that it will be important to continuously strengthen intentions of the people/seniors throughout the lifespan of the course.

1.3 Proposal of a methodical framework

The framework of the course consists of 20 hours in 1 week with a follow up session of 2x2 hours for additional 10 weeks. In total is this a course of 60 hours which could be distributed in 80 teaching units à 45 minutes. The course will be a mix of theoretical and practical units. To define a course framework we still have to discuss some points about the structure of the course:

- Standard course vs. individualized course with a modular structure (seniors could choose which topic they want to deepen) which will depend on the organization of the instructors (one instructor for one course vs. experts of each aspect)
- Development of a model/example of the course units

- Definition of a main topic with definitions of goals specific to that topic¹
- Phasic structure of a course unit: description of phase, goals, content
- Materials and methodical approach
- Complete planning of each unit vs. curriculum with definitions of goals and examples/ideas with responsibility of the instructor to design each lesson
- ...

In case of a standard course the units could be distributed to the three parts mental well-being, physical activity and nutrition with 25 units each. 5 units could be used as spare units or for group-processes, teambuilding etc. Above all, methods of behavior change should be addressed in each block to support behavior change and to motivate instantly. These units could be communicated as behavior change units that covers all aspects or separated for each aspects. Another possibility could be a distribution with orientation to table 1 (units are only an example):

	Physical activity		Nutrition		Mental well-being	
Carrying out relevant health practices	knowledge and motivation to <i>behavior change</i>					
	course week	follow up	course week	follow up	course week	follow up
	1	2	1	2	1	2
Strengthening of personal and social resources	Strengthening of <i>physical resources</i> :					
	course week	follow up	course week	follow up	course week	follow up
	3	4	2	4	2	3
	Strengthening of <i>psychological resources</i> :					
	course week	follow up	course week	follow up	course week	follow up
	3	4	2	4	2	3
	Strengthening of <i>social resources</i> :					
	course week	follow up	course week	follow up	course week	follow up
	3	4	2	4	2	3
Communicating of relevant health competences and skills	Knowledge of relevant <i>basic knowledge</i> :					
	course week	follow up	course week	follow up	course week	follow up
	2	2	2	3	2	4
Sum units 80	12	16	9	19	9	15

¹ We can use Lohmann et al., (n.y.) and Moran, Caspersen, Thomas, Brown and the Diabetes Work Group (2007) as orientation to name main topics.

2 Consolidation of needs analysis research findings

Prof. Yael Netz (with assistance of Dr. Sigal-Eilat Adar) from the Wingate College in Israel prepared the **international** recommendations for physical activity, nutrition and mental well-being. The **national** characteristics collected from ProActivate **(Ireland)**, Kappaerre **(Italy)**, Maraton Warszawski **(Poland)** and ADESPER **(Spain)** will be summarized in the following chapters respectively. Some aspects will be attached in the annex or can be read in footnotes to allow a better readability.

2.1 Official recommendations of physical activity, nutrition and seniors for senior adults with national characteristics

2.1.1 Physical activity

2.1.1.1 **International** Recommendations

"*Physical activity* includes leisure time physical activity (for example: walking, dancing, gardening, hiking, swimming), transportation (e.g., walking or cycling), occupational (if the individual is still engaged in work), household chores, play, games, sports or planned exercise, in the context of daily, family, and community activities" (WHO, 2013a). *Sedentary behavior*² is activity that involves little or no movement or physical activity. Examples are sitting, watching television, playing video games, and using a computer (ACSM, 2011).

The international physical activity recommendations are according to the ACSM (2009), the Centers for Disease Control and Prevention (CDC) (2013), American Heart Association (AHA) (Haskell et al., 2007), the US Department of Health and Human Services ([USDHHS], 2008a) and the WHO (2013a)³:

² Too much sitting must be seen as distinct from too little exercise (Owen, 2012). Even for adults who meet the minimal public health recommendations on physical activity (detailed below) on most days each week, there are deleterious metabolic consequences of the 9 to 10 hours of sitting that can occupy their remaining "non-exercise" time (Healy et al., 2008). Sedentary behavior is associated with metabolic disorders, and therefore with higher risk of developing major chronic diseases (Owen, 2012).

³ The WHO and Europe widely adopted the CDC and the ACSM evidence-based physical activity recommendations for public health (Haskell et al., 2007; Oja, Bull, Fogelholm & Martin, 2010). Like the Guidelines for other adults, those for older adults mainly focus on two types of activity: aerobic and muscle-strengthening. In addition, balance and flexibility training is recommended for older adults who are greater at risk of falls (ACSM, 2009; Physical Activity Guidelines Advisory Committee Report, 2013).

1. **Aerobic physical activity** refers to exercises in which the body's large muscles move in a rhythmic manner for sustained periods. All healthy adults aged 65 years and above, as well as healthy adults aged 18 to 65 years should perform at least **150 minutes of moderate-intensity aerobic physical activity throughout the week**, or do at least **75 minutes of vigorous-intensity aerobic physical activity throughout the week**, or an equivalent combination of moderate- and vigorous-intensity activity. A rule of thumb is that **1 minute of vigorous-intensity activity is about the same as 2 minutes of moderate-intensity activity** (CDC, 2013).
 - 1.1 A warm-up before moderate- or vigorous-intensity aerobic activity allows a gradual increase in heart rate and breathing at the start of the episode of activity. A cool-down after activity allows a gradual decrease at the end of the episode.
 - 1.2 Time spent doing warm-up and cool-down may count toward meeting the aerobic activity guidelines if the activity is at least moderate intensity (for example, walking briskly to warm up for a jog) (Evans, 1999).
 - 1.3 Aerobic activity should be performed in bouts of at least 10 minutes' duration.
 - 1.4 Intensity⁴: On a scale of 0 to 10 for level of physical exertion, 5 to 6 indicates moderate-intensity that produces noticeable increases in breathing rate and heart rate, and 7 to 8 on that scale indicates vigorous activity that produces large increases in a person's breathing and heart rate.
 - 1.5 Type: Any modality that does not impose excessive orthopedic stress; walking is the most common type of activity. Aquatic exercise and stationary cycle exercise may be advantageous for those with limited tolerance for weight bearing activity.

⁴ It is now evident that programs of physical activity for older adults do not need to be of high intensity in order to reduce the risks of developing chronic diseases. However, the outcome of treatment of some established diseases and geriatric syndromes is more effective with higher-intensity exercise (e.g., type 2 diabetes, clinical depression, osteopenia, sarcopenia, muscle weakness). The acute effects of a single session of aerobic exercise are relatively short-lived, and the chronic adaptations to repeated sessions of exercise are quickly lost upon cessation of training, even in regularly active older adults (ACSM, 2009).

2. **Muscle-strengthening activity** refers to exercise that causes muscles to work or hold against an applied force or weight, involving major muscle groups. The resistance against which a muscle generates force is progressively increased over time.
- 2.1 Progressive resistance training, which involves a few contractions against a heavy load, should be performed **two or more days a week**, preferably on nonconsecutive days. Resistance training should be directed at the large muscle groups that are important in everyday activities, including those in the shoulders, arms, spine, hips, and legs.
- 2.2 Progressive weight training program or weight bearing calisthenics.
- 2.2.1 8–10 exercises involving the major muscle groups of 8–12 repetitions each, stair climbing, and other strengthening activities that use the major muscle groups. Each repetition should be performed slowly with a full range of motion, allowing 2-3 seconds to lift the weight (concentric contraction) and 4-6 seconds to lower the weight (eccentric contraction). Performing the exercise more quickly will not enhance strength gains and may increase the risk of injury.
- 2.2.2 A weight that is lifted 20 or more times will increase muscular endurance, but will not result in considerable gain in strength or muscle mass.
- 2.2.3 The amount of weight that is lifted may increase as strength builds.
- 2.2.4 Intensity: On a 0 to 10 intensity scale, between moderate- (5-6) and vigorous- (7-8) intensity.
- 2.2.5 According to Evans (1999), the breathing technique while lifting weight should be as following:
- Inhale before a lift, exhale during the lift, and inhale as the weight is lowered to the beginning position.
 - You should avoid performing the Valsalva maneuver (holding your breath during force production).
 - With a proper breathing technique, the cardiovascular stress of resistance exercise is minimal.

- d. Heart rate and blood pressure should rise only slightly above resting values in men and women over 50 years who follow these guidelines.
3. **Balance** refers to a combination of activities designed to increase lower body strength and reduce the likelihood of falling.
- 3.1 Adults with poor mobility should perform physical activity to enhance balance and prevent falls, on **three or more days per week**.
 - 3.2 Progressively difficult postures that gradually reduce the base of support (e.g., two-legged stand, semitandem stand, tandem stand, one-legged stand) should be performed.
 - 3.3 Dynamic movements that perturb the center of gravity (e.g., tandem walk, circle turns) should be performed.
 - 3.4 Stressing postural muscle groups (e.g., heel stands, toe stands) or reducing sensory input (e.g., standing with eyes closed) exercises should be performed.
4. **Flexibility exercises** refer to activities to preserve or extend the range of motion around joints.
- 4.1 Frequency: **two or more days a week**.
 - 4.2 Intensity: Moderate (5-6) intensity on a scale of 0 to 10.
 - 4.3 Type: Any activities that maintain or increase flexibility using sustained stretches for each major muscle group and static rather than ballistic movements.
5. **Sedentarism**
- There are several strategies to prevent sedentarism (Dunstan, Howard, Healy & Owen, 2012):
- 5.1 Standing and taking a break from the computer every 30 minutes.
 - 5.2 Taking standing breaks in sitting time during the day.
 - 5.3 Standing during phone calls
 - 5.4 Walking to a friend.

- 5.5 Using a height-adjustable desk to enable frequent transitions between working in a standing or seated position.
- 5.6 Using a headset or the speaker phone to enable more standing while using the phone.

Additional general recommendations related to exercise behavior (American Medical Association (AMA), 2013; Evans, 1999; Haskell et al., 2007; Oja et al., 2010).

1. If it is not possible to follow the guidelines due to limiting chronic conditions, older adults should be as physically active as their abilities allow, and should avoid inactivity.
2. Inactive people should start with small amounts of physical activity and gradually increase the duration, frequency and intensity over time.
3. Inactive adults and those with disease limitations should become more active as this will lead to health benefits⁵.
4. Aquatic exercise and stationary cycle exercise may be advantageous for those with limited tolerance for weight-bearing activity.
5. Find a friend to exercise with. The more people you exercise with, the more likely you are to stay with the exercise. This is a perfect opportunity for sons and daughters to spend time with their older parents, to the benefit of both generations.
6. Make your home a safe place.
7. Keep your home, walkways and stairways well-lit and uncluttered.
8. Make sure all throw rugs have non-slip backs so you don't slip on them!
9. Slip-proof your bathtub or shower with a rubber mat.

Advantages

Strong evidence demonstrates that compared to less active men and women, older adults who are physically active have (ACSM, 2009; Haskell et al., 2007; Mechling & Netz, 2009):

⁵ Because of the dose-response relation between physical activity and health, persons who wish to further improve their personal fitness, to reduce their risk for chronic diseases and disabilities or to prevent unhealthy weight gain may benefit by exceeding the minimum recommended amounts of physical activity (Haskell et al., 2007).

1. Lower rates of coronary heart disease, hypertension, stroke, diabetes, colon and breast cancer and a higher level of cardiorespiratory and muscular fitness.
2. A healthier body mass and composition and enhanced bone health.
3. Higher levels of functional health and a lower risk of falling.
4. Better cognitive functioning (Colcombe & Kramer, 2003).
5. Higher levels of well-being (Netz, Wu, Becker & Tennenbaum, 2005).

Risks of physical activity

1. According to the ACSM and the AHA (Haskell et al., 2007), physically active adults (not necessarily older adults) tend to experience a higher incidence of leisure-time and sport related injuries than their less active counterparts.
2. However, it appears that healthy adults who meet the activity recommendations have an overall musculoskeletal injury rate that is not much different than inactive adults.
3. Active men and women have a higher injury rate during sport and leisure-time activity, while inactive adults report more injuries during nonsport and nonleisure time. A possible reason for this lower injury incidence during non-leisure time is the increased fitness levels (endurance, strength, balance) of the more active adults.
4. Risk of musculoskeletal injuries increases as the intensity and amount of the activity increases.
5. The risk of sudden cardiac arrest or myocardial infarction is very low in generally healthy adults during moderate-intensity activities.
6. However, the risk of cardiovascular complications increases transiently during vigorous physical exertion, especially for persons who have latent or documented coronary artery disease and are habitually sedentary.
7. Studies on injuries in adults aged 65 and over are scarce. The rate of injuries occurring during physical activity in advanced age, based on existing data, is very low compared to other ages. Based on current available research, there is no substantial evidence to justify the fear of getting injured in purposeful physical activity or in sports in advanced age (Dunsky & Netz, 2012).

Taking precautions

1. The ACSM (2010) recommends symptom-limited exercise testing before vigorous exercise is undertaken.
2. On the other hand, according to the ACSM and the AHA (ACSM, 2011; Haskell et al., 2007), exercise testing is not necessary for asymptomatic men and women who plan to be physically active at the minimum levels of moderate-intensity activity as recommended in the guidelines, unless they have specific medical questions.
3. Symptomatic persons or people with cardiovascular disease, diabetes or any other chronic disease or medical concern, should consult a physician prior to any substantive increase in physical activity, particularly vigorous-intensity activity.
4. For prescription of resistance exercise, Evans (1999) suggests a weight-lifting stress test. His recommendation is to have the person perform three sets of eight repetitions at approximately 80% of the one-repetition maximum, with ECG and blood pressure responses being monitored during the exercise.

Conclusions

In an overall discussion/individual decision, one has to weigh the risks of performing physical activity against the risks of inactivity! Adults aged 65 years and older gain substantial health benefits from regular physical activity, and these benefits continue to occur throughout the years (ACSM, 2009).

2.1.1.2 *National characteristics*

While reading the national research reports, it becomes obvious that every participating country refers to the international recommendations when it comes to physical activity. To avoid doublings, I won't write down the recommendations again.

The Department of Health and Children in **Ireland** (DOHC) names (beside the distinction for moderate and vigorous intensity mentioned above) further tips how it should feel when you are doing moderate intensity physical activity: You should still be able to carry on a conversation and should feel warm or sweating slightly, comfortable pace. Examples for moderate activities are e.g., brisk walking (1 mile in 15-20 minutes), water aerobics, ballroom dancing, gardening or tennis (doubles). They further recommend to start with only a few minutes of activity each day (e.g., 5

to 10 minutes a day) and gradually increase this amount to 30 minutes of moderate activity on 5 days a week.

Another recommendation that exists has been highlighted in the recommendations for **Italian** elderly: for additional health benefits one can double the amount of moderate- or vigorous-intensity physical activity per week (Colitti, 2009).

Jeziński and Rybicka (2002) as well as Jaskólski and Jakólska (2005) from **Poland** highlight some other points which should be taken into consideration during planning and execution of exercise programs: age, sex, general state of health, physical fitness and mode of former work (physical or sedentary) as well as changes that take place during climacterium (women). Movements and exercises that should be avoided are big physical exertion, exercises with head down, jumps from heights or static strength exercises. Examples of beneficial activities are morning gymnastics or senior sports or fitness classes.

In **Spain**, following types of exercises are recommended (frequency equates the official recommendations) to gain the health benefits⁶: aerobic low-impact activities such as walking, swimming, dancing, yoga, tai chi chuan, water aerobics or cycling. High impact exercises (running, games with jumps like volleyball or basketball) show a large prevalence of injuries at this time of life. In case of clinical conditions like severe arthritis, limited joint mobility or persons with mobility problems, strength training⁷ should be a priority to aerobic training. For seniors with a limitation of joint mobility, difficulties in sustaining the body weight, rehabilitation of injuries, kidney or liver disease or lower back pain, hydrogymnastic is recommended because there is a

⁶ Scientifically evidenced benefits: *Anthropometric and neuromuscular effects*: control of body weight, decreased body fat, increased muscle mass, muscle strength, flexibility and bone density; *metabolic effects*: increased stroke volume, increased pulmonary ventilation, maximal oxygen consumption, decreased heart rate (at rest and at work its maximum) and blood pressure and improves lipid profile, insulin sensitivity and metabolic cup rest; *psychological effects*: improved self-concept, self-esteem, body image and decreased stress, anxiety, insomnia, drug use and improvement of cognitive function and socialization (Gramunt Fombuena, 2011); prevention of falls by: strengthening muscles of legs and spine, improves reflexes, improves motor synergy of postural reactions, improved gait speed, increased flexibility and joint mobility

⁷ Strength training improves muscle strength, helps to maintain functional independence, improves gait speed and balance, increases bone density and prevent falls (Pancorbo Sandoval & Pancorbo Arencibia, 2011)

reduction of gravitational forces, decreased mechanical stress of the musculoskeletal system, ease of thermoregulation and uretic and diuretic effects in water. Seniors should consult an orthopedic surgeon to know what kind of shoes one need and monitor bone condition in general and should do appropriate clinical and cardiological controls before starting a new activity. Moreover the supervision of a professional trainer for physical education would be recommended. In general, an active lifestyle with climbing stairs and avoid using the remote control etc. are seen as most important what can be concluded with the statement "... Think about how to be more active in your daily life: Walk fast, ride a bike, dance, climb stairs... MOVE MORE" (Pancorbo Sandoval & Pancorbo Arencibia, 2011). ADESPER names some more detailed benefits of physical activity out of her resources than in the advantages stated above, but these information would be too detailed for seniors (see footnotes 5, 6). We will have it in mind for the training of instructors, that they will have some more basic knowledge in case that course participants will have questions.

2.1.1.3 Conclusion

Our recommendation for the course content is to follow the general international recommendations when it comes to communicate the frequency, intensity and type of physical activity as well as use the information (advantage, benefits) to motivate the seniors because there aren't much national particular characteristics. Additionally for the instructors, we will use the information from ADESPER. Sport games could be adapted to the needs of elderly that they still can participate in games that promote social experiences without (or less) danger of injuries, that has been mentioned as problems. We will consider the background of the seniors when we plan our course as mentioned by Maraton Warszawski. We also have to warn of the risk of injuries but as it is stated above, "in an overall discussion/individual decision, one has to weigh the risks of performing physical activity against the risks of inactivity!".

2.1.2 Nutrition

Nutrition and health remains a major concern in persons aged 65 years or older (CDC, and National Center for Health Statistics – NCHS, 1999). Healthy and nourishing eating helps to promote health and prevent chronic disease, and contributes to daily life activity, energy and mood, as well as maintaining functional independency in elderly.

2.1.2.1 *International Recommendations*

1. **Macronutrients**

1.1 **Energy**

The basal energy requirements continue to decrease as adults age due to the loss of lean body mass (but may increase in the presence of disease). The aging process is associated with several deleterious changes in body composition and whole body energy metabolism. These changes include an increase in adiposity, a loss of muscle mass, a decline in physical activity and a fall in resting metabolic rate. It is unclear whether these changes are due to the aging process per se or are more reflective of changes in lifestyle (Goran & Poehlman, 1999). Daily requirements for healthy older adults include 30 kcal per kg of body weight (DiMaria-Ghalili, 2012).

1.2 **Protein**

The recommended dietary allowance (RDA) is 0.8 g protein/kg/day (Wolfe, 2012). It may be logical to conclude that the optimal dietary protein intake for older individuals is greater. However, the growing evidence that levels of protein intake greater than the RDA may benefit older individuals has not been yet considered by recent committees deliberating recommendations for dietary nutrient intake (see Volpi et al., 2013).

1.3 **Fat**

Current recommendations for healthy seniors follow recommendations for the entire population: Total fat should be 30-35% of the caloric intake. Saturated fat (mainly from meat and dairy products) should be limited to 5-6% of the total calories. Polyunsaturated fat should not exceed 8% of the total calories. An increase in the intake of monounsaturated fatty acids (such as olive oil, canola oil, avocado) is recommended, but trans-fatty acids should be avoided. Dietary

alpha-Linoleic acid (n3) should be encouraged (Eckel et al., 2013; Eilat-Adar, Sinai, Yosefy & Henkin, 2013).

1.4 Cholesterol

The current recommendation is that cholesterol should not exceed 300 mg/day in the diet. However, there is insufficient data to support further reduction in dietary cholesterol (Eilat-Adar et al., 2013).

1.5 Dietary fiber

The recommended amount of 21 g/day for women and 30 g/day in men can be achieved through the consumption of unpeeled vegetables and fruits, whole grains and legumes (Ministry of Health, Israel, 2013).

2. Other nutrients

2.1 Omega-3 fatty acid

Clear health benefits have been shown with modest increases in consumption of fatty fish (Buhr & Bales, 2010).

2.2 Fluids

The current mean intake of the U.S. population for total water (beverages and food) as established for >70-years-old adults is 2.7 L (12 cups)/day for women and 3.7 L (16 cups)/day for men (Lichtenstein, Rasmussen, Yu, Epstein, & Russell, 2008).

2.3 Alcohol

Among adults aged 60 and older, drinking >7 drinks per week has been associated with impairment of instrumental activities of daily living, while drinking >14 drinks per week has been associated with impairment in advanced activities of daily living. If an alcoholic beverage is regularly consumed by an older adult, it is recommended that this be done in moderation (≤ 1 drink per day for women ≤ 2 drinks per day for men) (Eilat-Adar et al., 2013).

3. Vitamins and minerals

Current data for mean nutrient intake suggest that as a group, older adults are at risk for not meeting the RDA or AI (Average Intake) values for calcium, vitamins D, E, and K, and potassium and fiber (Buhr & Bales, 2009). The mean intake for

these shortfall nutrients ranges from 33 to 50% of the RDA or AI values for individuals over the age of 70 (Lichtenstein et al., 2008).

3.1 Sodium

As individuals age, sodium sensitivity increases and renal function, which limits the ability of the kidney to excrete sodium, decreases. Reduction in dietary sodium in older adults lowers blood pressure and has been associated with reduced incidence of stroke and heart disease. Raising awareness about sodium availability should be stressed (Eilat-Adar et al., 2013).

On the other hand, although sodium restriction is recommended, evidence from studies on direct health outcomes is inconsistent, and is insufficient to lead to the conclusion that lowering sodium intakes below 2300 mg per day either increases or decreases risk of cardiovascular disease (CVD) outcomes (including stroke and CVD mortality) or all-cause mortality in the general U.S. population. Therefore sodium intake below 2300 mg per day is not recommended (Eckel et al., 2013).

3.2 Multivitamin-minerals supplements (MVM)

While general recommendations that older adults take a daily MVM are common, a review of the evidence offers only weak support for this advice. In fact, there is limited scientific support for the health-related efficacy of MVM use.

In regards to potential safety concerns, it is worrisome that the individuals most likely to take over-the-counter nutritional supplements are those who already have a near optimal diet, raising the possibility of consuming some micronutrients at excessive levels. One example of this causing the most concern is the combination of supplements containing folate with folate-fortified foods, resulting in very high total intakes of this vitamin. When folate status is high and vitamin B12 status is low (and low B12 status is common in older adults), there can be a detrimental masking of vitamin B12 deficiency (Buhr & Bales, 2010).

If an older adult chooses to take a MVM, it should provide all or at least most of the vitamins and minerals recognized to be essential in amounts approximating the current Dietary Reference Intake (Food and Nutrition Information Center, 2013). MVM users should be counseled to avoid “adding on” other substantial supplementary sources of the same nutrients, including from other supplements and fortified foods.

3.3 Antioxidant supplements

The U.S. Preventive Services Task Force ([USPSTF], 2013) recommended against supplementation with β -carotene (an antioxidant) because of the increase in lung cancer and mortality in smokers. Evidence against the use of β -carotene is also mounting for populations other than smokers. Findings published as meta-analyses have continued to support a recommendation against the use of vitamin E as an antioxidant in doses higher than 400 IU⁸. Selenium is another antioxidant. Whether it is effective for reducing cancer incidence and mortality is still under study. Thus, the only clear indication for a beneficial health effect of supplemental nutrient antioxidants appears to be for their use in potentially delaying the progression of Age-Related Macular Degeneration in individuals who already have intermediate or advanced forms of this disease (Buhr & Bales, 2009). The combination proven to delay a progression includes a combined supplement of vitamins C (500 mg) and E (400 IU), beta-carotene (15 mg), and zinc and copper (80 mg zinc oxide plus 2 mg cupric oxide) (Charkoudian et al., 2008; Evans & Lawrenson, 2012).

3.4 Calcium and vitamin D

When a calcium supplement is recommended, older people may need advice from a nutritionist, as they seek to maximize calcium intake from food and then may use supplements to bring the net calcium intake to 1000 to 1200 mg per day (Buhr & Bales, 2009).

Dairy (milk) products are excellent sources of bioavailable calcium. A wide range of low-fat and nonfat dairy products is currently available. One factor potentially impeding the consumption of dairy products in older adults is the high rate of lactose intolerance or perception of lactose intolerance in this group. In response, mainstream supermarkets now carry a variety of non- and low-lactose dairy foods. Also commonly available are enzyme products that can either be taken when a lactose-containing food is consumed or added to the food prior to consumption (lactase supplements). It should be noted that although the prevalence of lactose intolerance increases with age, intolerance symptoms among lactose maldigesters tend to decrease with age, suggesting that as people

⁸ International Unit

get older, they may have more, rather than less, flexibility in their choice of calcium-rich dairy foods (Lichtenstein et al., 2008) .

It is currently estimated that no more than 2% of the elderly (≥ 70 y) meet the vitamin D AI from food sources (see Moore, Murphy, Keast & Holick, 2004). The ability of the skin to synthesize vitamin D declines with age. Limited sun exposure due to latitude or concern about sun exposure and skin cancers can minimize endogenous vitamin D synthesis. Additionally, with increasing rates of overweight and obesity in the older population, there is a further concern for vitamin D inadequacy due to deposition in body fat compartments and subsequent compromised bioavailability (Buhr & Bales, 2009).

For older adults, with little sun exposure and/or other risk factors for osteoporosis, a supplement of approximately 800 IU (20 mcg) of vitamin D is recommended. Supplements may be needed in the case of documented deficiency. Ideally, the response of the individual to supplementation is best assessed by monitoring levels of serum 25-hydroxyvitamin D (Buhr & Bales, 2009).

The New USPSTF concludes that the current evidence is insufficient to assess the balance of the benefits and harms of daily supplementation with vitamin D3 and calcium for the primary prevention of fractures in non-institutionalized postmenopausal women (Moyer, 2013).

3.5 B vitamins

The RDA for vitamin B12 is 2.4 micrograms/day. Its sources are animal food (such as fish, meat, dairy products and eggs) as well as fortified foods (such as some of the breakfast cereals). However, B12 deficiency occurs in up to 20% of older adults, therefore a supplement of 2.4 mcg daily is recommended (Ministry of Health, Israel, 2013).

Supplements of the B vitamins folate, B12 and B6 have been studied with regards to primary and secondary prevention of a number of major age-related chronic diseases, including CVD, stroke, cognitive decline, and cancer. There is little evidence of benefits of B vitamin supplements for delaying CVD or age-related cognitive changes. In the few cancer-related studies, the evidence of benefit is coupled with concerns about affecting the growth of existing undiagnosed cancers (Buhr & Bales, 2010).

4. Factors affecting healthy eating (DiMaria-Ghalili, 2012)

4.1 Dietary intake

Little or no appetite, problems with eating or swallowing, eating inadequate servings of nutrients or eating fewer than two meals a day may influence dietary intake in older adults.

4.2 Limited income

This may cause restriction in the number of meals eaten per day or the dietary quality of meals eaten.

4.3 Isolation

Older adults who live alone may lose the desire to cook because of loneliness, decrease in appetite when widowed, difficulty in cooking due to disabilities, and lack of access to transportation to buy food.

4.4 Chronic illness

Chronic conditions can affect intake. Disability can hinder the ability to prepare or ingest food. Depression can cause decreased appetite and poor oral health (e.g., cavities, gum disease, and missing teeth). Xerostomia, or dry mouth, impairs the ability to lubricate, masticate and swallow food. Antidepressants, antihypertensives and bronchodilators can contribute to xerostomia.

4.5 Physiological changes

Decrease in lean body mass and the redistribution of fat around internal organs lead to decreased caloric requirements, changes in taste (from medications, nutrient deficiencies or taste bud atrophy), and can also alter nutritional status.

Summary and practice guidelines

1. Eating should be an enjoyable experience.
2. A healthy diet should include a diversity of foods while maintaining a healthy weight.
3. It is preferable to eat fresh or frozen food without additional sugar, salt or high-calorie gravies, using cooking methods that retain the original nutrients undestroyed.
4. The diet should contain a variety of vegetables and fruits, legumes, whole grains, whole wheat bread and high-fiber low-salt food items. For those who are at under

or normal weight, fresh juice can be also a good source for vitamins and minerals.

5. Consume at least half of all grains as whole grains. Increase whole-grain intake by replacing refined grains with whole grains.
6. Vegetable oils (especially olive and canola oils, excluding palm and coconut oils), should be preferred over animal fat. Avocado, nuts, almonds and tahini are rich sources for vegetable oils.
7. Salt consumption should not exceed 2300 mg of sodium/day. Increased availability of reduced and low-sodium canned and prepared foods affords a feasible approach to reducing sodium intake in older adults. Dietary sources for sodium include: table salt, soups and gravies, soy and other sauces, salad dressing, industrially prepared meat (such as salami or industrialized frozen meat), cheese, snacks such as pretzels and popcorn, pickled foods and industrialized food in general.
8. It is recommended to minimize consumption of high-fat meat (especially processed meats that are high in fat and sodium), hard margarines and pastries with hydrogenated fat (trans fatty acids), and foods that are high in sodium and sugar.
9. Choose a variety of protein foods, which include lean meat and poultry, eggs, beans and peas, soy products, and unsalted nuts and seeds. Two to three servings of fatty fish per week are recommended.
10. It is recommended to drink a lot of water, and reduce consumption of sweetened beverages. Green tea may also confer health benefits.
11. If you choose to take a MVM, it should provide all or at least most of the vitamins and minerals recognized to be essential in amounts approximating the currently dietary reference intakes (DRI). MVM users should be counseled to avoid “adding on” other substantial supplementary sources of the same nutrients, including from other supplements and fortified foods.
12. The evidence does not support a recommendation for vitamins A, C, E, or antioxidant combinations in the prevention of CVD or cancer.
13. Based on encouraging preliminary findings, more study is recommended on the benefit of antioxidant supplements for age-related macular degeneration and of selenium for cancer prevention.

14. Increase intake of fat-free or low-fat milk and milk products, such as milk, yogurt, and cheese. For older adults with little sun exposure and/or other risk factors for osteoporosis, a supplement of approximately 800 IU (20 mcg) of vitamin D is recommended. Supplements may be needed in the case of documented deficiency. Ideally, the response of the individual to supplementation is best assessed by monitoring levels of serum 25-hydroxyvitamin D.
15. There is little evidence of benefit of B vitamin supplements for primary or secondary prevention of disease. However, supplements of these vitamins in DRI levels are recommended when the status of these nutrients is not optimal. In the few cancer-related studies, the evidence of benefit is coupled with concerns about enhancing the growth of existing undiagnosed cancers.
16. If an alcoholic beverage is regularly consumed, it is recommended that this be done in only moderation (≤ 1 drink per day for women ≤ 2 drinks per day for men).
17. To alleviate dry mouth, avoid caffeine, alcohol, tobacco, and dry, bulky, spicy, salty, or highly acidic foods. Try sugarless hard candy or chewing gum to stimulate saliva, keep lips moist with petroleum jelly, and/or drink frequent sips of water.
18. To improve oral intake, encourage family members to visit at mealtimes and to bring favorite foods. Eat during the day and try small frequent meals with adequate nutrients to regain or maintain weight. Eat nutritious snacks, and if necessary take oral food supplementation. However, these should not replace meals.

2.1.2.2 *National characteristics*

The Irish Heart Foundation (2007) pursues the following goals for the heart health of the **Irish** population: 1) reduce the intake of saturated fat to less than 10%⁹ of dietary energy and to reduce trans-fat to less than 2% of energy (such as cakes, biscuits, chocolate, confectionery and savory snacks), 2) reduce salt intake to less than 6 grams a day and 3) reduce body mass index (BMI) to less than 25 kg/m², however the Irish Heart Foundation would, as a first priority, set the goal of halting the

⁹ Comparison: 5-6% saturated fat of the total calories are recommended by Eckel et al., 2013 and Eilat-Adar et al. 2013

increase in levels of overweight and obesity in the Irish population. They further recommend:

1. An increase in fruit and vegetable intake to be greater than 400grams a day.
2. Enjoy a wide variety of foods from the five food groups.
3. Find enjoyable ways to be physically active every day – balancing your food intake with active living will help protect you against disease and prevent weight gain.
4. Keep an eye on your serving sizes – choose smaller serving sizes and add plenty of vegetables, salad and fruit.
5. Plain whole meal breads, cereals, potatoes, pasta and rice provide the best calories for a healthy weight. Base your meals on these simple foods with plenty of vegetables, salad and fruit.
6. Eat plenty of different colored vegetables, salad and fruit – at least five a day.
7. Low-fat milk, yoghurt and cheese are best – choose milk and yoghurt more often than cheese.
8. Choose lean meat and poultry; include fish (oily is best) and remember, peas, beans and lentils are good alternatives.
9. Use polyunsaturated and monounsaturated spreads and oils sparingly – reduced fat spreads are best.
10. Grill, bake, steam or boil food, instead of frying or deep frying.
11. Healthy eating can be enjoyed with limited amounts of ‘other foods’ like biscuits, cakes, savoury snacks and confectionery. These foods are rich in calories, fat, sugar and salt so remember – NOT too MUCH and NOT too OFTEN.
12. Limit your salt intake.
13. Drink plenty of water.
14. Everyone should take a daily vitamin D supplement. 10µg per day for those aged 51 years and over.¹⁰
15. Prepare and store food safely. (Food Safety Authority of Ireland 2011)

In **Italy** the following 10 good habits are published for a healthy live, rather than for healthy eating separated (Granarolo, 2014; Palazzotto & Cutrupi, 2009):

¹⁰ Comparison: Buhr & Bales (2009) only recommend a supplement of 20 mcg for older adults with little sun exposure and/or other risk factors for osteoporosis.

1. Keep a various diet, completed with all the nutritional groups.
2. Increase the consumption of vegetables and fruits;
3. avoid the consumption of animal fat;
4. moderate the consumption of salt and very savoury food, sugar and sweets;
5. drink at least 6-8 glasses of water per day¹¹;
6. drink wine and beer only during meals and with moderation;
7. keep your body active riding bikes or regularly practicing a sport suitable for your physical conditions;
8. keep your mind active reading books and newspapers, participating to conferences, listening to the radio;
9. keep your social life active spending time with relatives and friend;
10. try to go out and to expose yourself to the sun every day, at least when the weather is nice.

The daily recommendations for food are a balanced diet, where the energetic daily need should be given by various nutrients and divided as follow:

1. carbohydrates 55-60%, of which no more than 10% of sugar;
2. protein 15% (0.8g/kg body weight/day);
3. fat 25-30%, of which less than 7% of saturated fat¹².

A very various diet helps to avoid nutritional deficiency and stay in good health. Seniors do not need special diets, however third and fourth age brings with it the risk of malnutrition caused by the lack of calories, nutrients or, on the other hand, an excess in calories.

In **Poland**, there is special consideration for seniors to consume an appropriate amount of calcium and vitamin D which is essential to strengthen bones and teeth and to reduce the risk of osteoporosis, bone fractures and disabilities. Individuals over the age of 50 need around 1200 mg of calcium and 400-600 IU of vitamin D¹³ per day. The best sources of vitamin D are fatty fish, fortified milk or margarine and fortified cereals and grains. Products that are low-fat or fat-free are the best sources of calcium. Furthermore polish elderly are recommended to eat fruits and vegetables

¹¹ Comparison: Lichtenstein et al. (2008) recommend the double amount!

¹² Comparison: Eckel et al., 2013 and Eilat-Adar et al. (2013) recommend fat should be 30-35% of the caloric intake.

¹³ Comparison: Vitamin D intake not consistent with recommendations of 800 IU per day (Buhr & Bales, 2009)

to keep immune system in good condition. Lycopene, a pigment found in tomatoes and other red fruits and vegetable, is an antioxidant which helps to lower the risk of cancer and other serious diseases. Vitamin E builds up immune system and reduces the risk of cataract, heart diseases and Alzheimer's disease. It can be found in almonds, vegetable oil, seeds, spinach and other dark green leafy vegetables. Folic acid and vitamins B6 and B12 help keep nerve cells and red blood cells healthy, what maintains mental fitness. The best sources of folic acids are dark green leafy vegetables, citrus fruits, grains and cereals. Vitamin B6 can be found in whole grains, fish, beans, sunflower seeds, meat and some fruits and vegetables. Products of animal origin are natural sources of vitamin B12 (European Food Information Council [EUFIC], 2003; Jarosz, 2011; Jurczak, Barylski & Irzmański, 2011; Międzynarodowa rada pielęgniarek, 2003).

In [Spain](#), Fundación Edad y Vida (2013) and the Public Health and Food Department (2011) tend to give individualized recommendations (in geriatrics) as age, sex, level of care in the elderly (domicile, residence, hospital be), their state of health, previous dietary history, medications taken, degree of past and current physical activity, as well as any changes in the social situation and economic, including the possibility of receiving or not enough social support have to be considered. Though this tendency of individualized recommendations, they also have some generic recommendations:

1. Evaluate the overall *energetic requirements*, with attention both energy intake as a whole and to its distribution in protein, fat and hydrocarbon components. Spanish experts recommend (especially in situations of prior malnutrition and in acute medical or surgical stress) a daily intake of 1-1.2 g/kg body weight of proteins¹⁴. In what appears to be agreement is the fact that up to 60 % of total energy intake should come from carbohydrates, and the prevalence is biased in favor of the complex because, in addition to not compromise certain intolerance the simple and soluble nature, are accompanied by fiber¹⁵. Fats should not

¹⁴ Comparison: Volpi et al. (2013): growing evidence that levels of protein intake greater than the RDA (0.8 g/kg body weight/day) may benefit older individuals has not been yet considered by recent committees deliberating recommendations for dietary nutrient intake

¹⁵ Although recent studies seem to detach fiber intake with the incidence of colon cancer, it is clear that the low content of this nutrient in the diet predisposes them to bowel dysfunction and colonic diverticulosis. It seems appropriate input from 15-20 grams/day. Which is soluble character contributes to improved glucose tolerance and reduced plasma cholesterol levels. Cellulose, hemicellulose and

exceed 30% of total calories in the diet, and it is advisable that there is an equitable distribution between saturated, polyunsaturated and monounsaturated fats.

2. Recommendations of *micronutrients*: It is important to ensure a sufficient supply of them all, what is normally going to get if the well-aged has an acceptable state of health and eat a varied diet rich in ample fresh food. It is not desirable to administer supplements indiscriminately, though perhaps it becomes bound in some specific situations. Especially the sufficient intake of calcium and Vitamin D is recommended [consistent with recommendations of Buhr & Bales (2009)] as well as one must be careful to cover any other equally common deficiencies such as those of iron, magnesium, folate or vitamin B12. It has been estimated that almost 50% of the well-aged take some form of vitamin-mineral supplement. Without exceeding the dose may be beneficial to the consumption of these products, especially in patients with deficits in intake, absorption or high requirements for some reason.
3. *Water*: Remember that water is the most essential of all foods. In the case of the elderly also attend several unfavorable circumstances. First a worse physiological hydration tendency. With age the proportions of both extracellular and intracellular water are reduced and the use of drugs such as diuretics that emphasize these losses increases. Also lose strength homeostatic control systems that could help compensate for this, such as thirst. To this we must add the functional limitations experienced over time all of our organs and systems, especially those most sensitive to water loss such as kidney, skin and central nervous system. A normal diet typically establish an intake of 1300-1500 calories/day can make about 500-700 ml/day of water, which can add 350 ml/day of metabolic production. It is necessary to add another 1.500 ml/day in the form of drinks to reach a total of 2.500ml/24 hours¹⁶.
4. *Interference between drugs and nutrients*: The well-aged is a major consumer of drugs. No less than 10% the proportion of people over 65 who do not take any day. In community settings the average consumption between 1 and 3 drugs is calculated daily. In the residential areas and in the hospital these proportions are

lignin retain water, combine with bile acids, intracólica reduce pressure and increase the rate of intestinal transit, as well as providing a certain antioxidant value

¹⁶ Comparison: Lichtenstein et al. (2008) recommends 2.7 L /day for women and 3.7 L /day for men

higher and may approach 10 drugs / day. In addition, almost 100 % of the elderly self-medicate regularly or occasionally. Changes in the pharmacodynamic and pharmacokinetic behavior operated in the body during the aging process determine significant changes in the metabolism of most drugs, which often forced to reduce or space doses and significantly increases the risk of reactions adverse to the point of reaching 3% of the Spanish population over 65 years old and become the fifth leading cause by the old man who comes to an emergency service.

5. Older people often have low levels of physical activity, whereas, however, the absorption capacity of the energy is not changed. These developments call for a reduction of energy intake in relation to adulthood to try to prevent the tendency to obesity so prevalent in this age group. However, the energy requirements in old age had been underestimated, and today it is accepted that these needs vary between 1.4 and 1.8 the value of the rate basal metabolic rate (BMR). Clearly, in the context of global health tips in the elderly population, the practice of physical activity should play an important role, and for this reason it is appropriate that the multiple of BMR to calculate energy requirements approaching the maximum 1.8 possible.
6. Vitamins Daily Requirements:

Table 2: Vitamin Daily Requirements

Kind of vitamin	Name of vitamin	Recommended Dietary Allowance (RDA)
Liposolubles	Vitamin A	600-700 µg
	Vitamin D	10-20 µg
	Vitamin E	20 mg
	Vitamin K	60-90 µg
Hidrosolubles	Vitamin C	200 mg
	Tiamin	1,8 mg
	Riboflavin	1,5 mg
	Niacin	9-13 mg
	Pantotenic acid	7 mg
	Vitamin B6	15 µg per g of protein ingested
	Biotin	50-100 µg
	Folic acid	400 µg
	Vitamin B12	2,5 µg

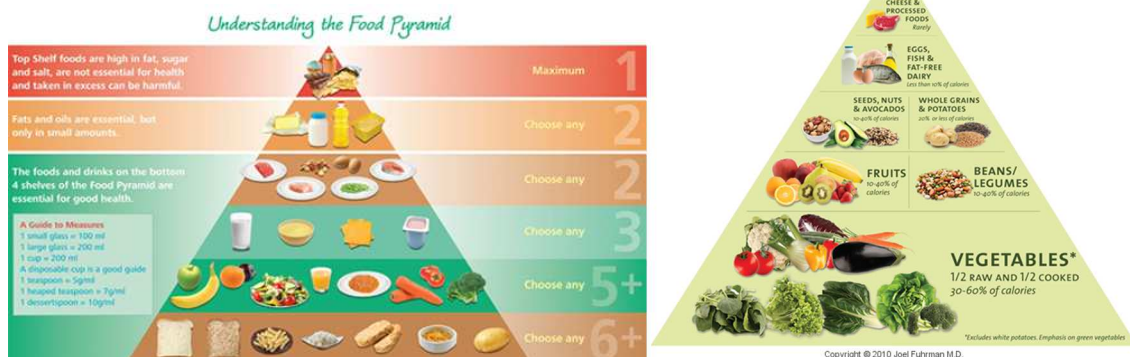
ADESPER provided us some additional information that can be used for the training of instructors (short: what happens with our body as we age and how it influences the nutritional status (muscular and bone loss, losses in the organs and in the immune

system)) which one should have in mind when talking about food and diet to seniors (See Annex 1).

Food Pyramids

As you can see in Figure 4, every country can provide a healthy eating pyramid and none equates the other. This also represents some discussions of nutrition experts all around the world, but it will be too much to write about this in this discussion. Whereas the pyramids in Spain, Poland and Italy show a base of the pyramid of water, Ireland shows two pyramids: one starts with vegetables, the other with grains on the bottom. I won't describe all differences because you can see them in the pictures. Beside their graphical differences they state a common message: most of the daily diet should be composed out of beverages (mostly water), grains, fruits and vegetables. Sweets, fats and supplements should build the minimum part of the nutrition intake. Dairy products and meat are somewhere in between the minimum and the maximum intake.

Ireland:



Left side: <http://www.safefood.eu/>; right side: <http://creativehealthireland.ie/>

Italy:



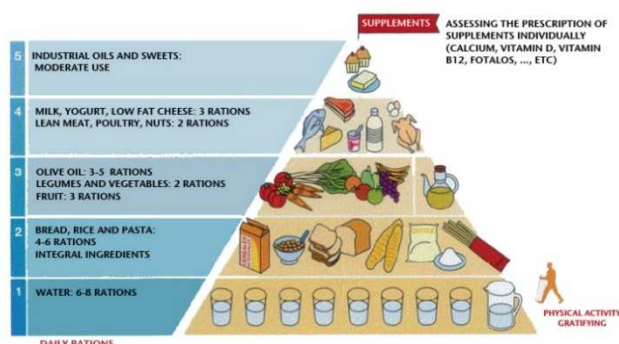
Poland:

The Healthy Eating Pyramid



Left side: Granarolo

Spain:



Healthy Eating Pyramid for +70 years. Taken from Guide healthy eating. Spanish Society of Community Nutrition (SENC), 2005 (in: Cuadrado Vives, Moreiras Tuni & Varela Moreiras, n.Y., p. 15)

Figure 4. Food Pyramids

2.1.2.3 Conclusion

The national recommendations for healthy eating vary a bit more than the recommendations for physical activity. This could be explained by the inconsistency in the nutrition science and the consecutive scientific work per se whether (e.g.,) supplements are necessary and helpful or how much protein is needed daily. As we follow the goal, that seniors are able to prepare a healthy meal and enjoy the preparation as well as the consume of the prepared foods (eating culture), we should focus more on “general” recommendations that are stated above (importance of vitamin D and calcium, minimize consumption of high-fat meat, diversity of food etc.) and not go too much in detail like how many µg of vitamins are necessary (see table). With some “general” rules it would be more likely that a senior is motivated to change the food habits as when they have to start counting how many mg of food they are allowed to consume! I set the word general in quotation mark because general or generic doesn’t mean that we shouldn’t recommend tailored recommendations when it is about making plans (e.g., start with one thing (increase in fruit and vegetable intake) instead of changing the whole nutrition behavior at once).

2.1.3 Mental well-being

Mental health and emotional well-being are as important in older age as at any other time of life. Neuropsychiatric disorders among older adults account for 6.6% of the total disability for this age group. Approximately 15% of adults aged 60 and over suffer from a mental disorder (WHO, 2013b). Mental well-being has an impact on physical health, and vice versa. Older adults with physical health conditions have higher rates of depression than those who are physically well. Conversely, untreated depression in an older person with a disease can negatively affect the outcome of the physical disease (WHO, 2013b).

The definition of 'mental well-being' includes areas such as life satisfaction, optimism, self-esteem, mastery and feeling in control, having a purpose in life, and having a sense of belonging and support (National Institute for Health and Clinical Excellence - NICE, 2008).

2.1.3.1 *International Recommendations*

AMA (2013); NICE (2008); ProMenPol Project (2009):

There are no WHO guidelines for mental health promotion. The National Institute for Health and Clinical Excellence, UK (2008), published recommendations for well-being promotion.

For professionals: meeting the mental well-being needs of older people

1. General

- 1.1 Define the target group and identify how, when and where the target group can be reached.
- 1.2 Involve older people in the planning, implementation and evaluation of opportunities and programs.
- 1.3 Address the specific health and social needs of older people.
- 1.4 Empower and motivate older persons to take the initiative for their own health and well-being.
- 1.5 Identify the political, social and economic barriers which affect older peoples' capacity to participate in society and implement interventions to overcome these difficulties.

- 1.6 Respect the autonomy and independence of older persons.
- 1.7 Develop multi-faceted, holistic interventions which take into account the physical, mental and social health needs of the older person and the inter-relatedness between these needs.
- 1.8 Invite regular feedback from participants and use it to inform the content of the service and to gauge the levels of motivation.

2. Walking scheme

- 2.1 Offer a range of walking schemes of low to moderate intensity with a choice of local routes to suit different abilities.
- 2.2 Promote regular participation in local walking schemes as a way to improve mental well-being for older people and provide health advice and information on the benefits of walking.
- 2.3 Encourage and support older people to participate fully according to their health and mobility needs and personal preferences.
- 2.4 Walking schemes should be organized and led by trained workers or volunteer walk leaders from the local community who have been trained in first aid and in establishing suitable walking routes.
- 2.5 Incorporate a group meeting at the outset of a walking scheme that introduces the walk leader and participants to one another.
- 2.6 Offer opportunities for local walks at least three times a week, with timing and location to be established with the participants.

3. Training

- 3.1 Involve professionals (e.g., occupational therapists, gerontologists, psychologists, social workers, etc.) in the design and development of locally relevant training schemes for those working with older people. Training schemes should include:
 - 3.1.1 Essential knowledge (and application) of the principles and methods of health and well-being promotion.
 - 3.1.2 Effective communication skills for engaging with older people (including group facilitation skills or a person-centered approach).
- 3.2 Ensure that practitioners have the skills to:

- 3.2.1 Encourage older people to identify, construct, rehearse and carry out daily routines, and promote activities that help to maintain or improve health and well-being
- 3.2.2 Improve, maintain and support older people's ability to carry out daily routines, and promote independence.

For the older people: successful aging tips

- 1. Obtain information or advice on a broad range of topics.** Increase your knowledge and awareness of where to get reliable information and advice.
 - 1.1 Meet health care needs (for example, eye, hearing and foot care).
 - 1.1.1 Know what medical conditions you have.
 - 1.1.2 Ask about tests and immunizations that are recommended for your age group.
 - 1.1.3 Know the names of your medicines and how to take them
 - 1.2 Make a list of your medical conditions, medicines, drug allergies (if any), and the names of your doctors. Keep this list in your wallet.
 - 1.3 Take care of personal needs (for example, shopping, laundry, keeping warm).
 - 1.4 Stay active and increase daily mobility.
 - 1.5 Obtain information on accessing services and benefits.
 - 1.6 Obtain information on home and community safety.
 - 1.7 Stay safe in the car.
 - 1.7.1 Wear your safety belt—and wear it correctly.
 - 1.7.2 Don't drive when you are angry, upset, sleepy or ill.
 - 1.7.3 If you have concerns about your driving safety, talk to your doctor.
 - 1.8 Obtain information on how to use local transport schemes: buses, trains, and shuttles in your area.
 - 1.8.1 Ask family and friends if they would be willing to give you a ride.
 - 1.8.2 If you need help finding a ride, contact your local agency on aging.
- 2. Be physically active.** Physical activity is recommended in order to improve mental well-being, mainly through improving physical function and delaying

deterioration. Seek tailored exercise and physical activity programs in the community that focus on:

- 2.1 A range of mixed exercise programs of moderate intensity (for example, dancing, walking and swimming)
- 2.2 Strength and resistance exercises as well as toning and stretching exercises. Ensure that the exercise programs you choose reflect your preferences.
- 2.3 Attend the sessions at least once or twice a week.
- 2.4 Learn how to exercise safely on your own for 30 minutes a day (which can be broken down into 10-minute sessions), five days each week or more.
- 2.5 Learn useful examples of activities in daily life that would help to achieve the above (for example, shopping, housework, gardening, cycling).

3. **Keep in touch with family and friends.** It's important to maintain your social life!
4. **Exercise your mind.** Keep your mind active by reading books, doing crossword puzzles, and taking classes.
5. **Stay involved.** Join community activities or volunteer projects. Somebody needs what you can offer!
6. **Keep a positive attitude!**
 - 6.1 Focus on the good things in your life, and don't dwell on the bad.
 - 6.2 Do the things that make you happy.
 - 6.3 If you've been feeling sad lately or no longer enjoy the things you used to, ask your doctor for help.

2.1.3.2 **National** characteristics

It has been difficult for the partners to find some national characteristics for mental well-being. There aren't any recommendations for **Irish** citizens how to maintain mental well-being.

In **Italy** the concept exists, that mental well-being can be increased by promoting an active and healthy aging, whereat participating to relevant activities, having strong personal relationships and a good health condition are the key factors to maintain mental well-being in the elderly. Promoting healthy living stiles for the whole duration of life – which means practicing physical activities since a young age and keeping dynamic mental activity, avoid smoke and alcohol abuse, identify and treat on-time illness such as cancer, CVD, neurodegenerative diseases, and emotional distress all over the world- can contribute to a better mental health in the majority of the senior population. Kappaerre theoretically describes a concept of mental well-being, life satisfaction and quality of life which better fits in the section models of well-being (chapter: 2.2.3). This explanation doesn't give information of what to recommend to seniors. A short conclusion: Important parts of mental well-being are life satisfaction, mood and happiness. These parts refer to a psycho-emotional world which considers pleasure of living, mind strength and resoluteness, the balance between ambitions, goals and success, self-esteem as well as optimism. Personal life satisfaction together with social or relational life satisfaction build quality of life. Both aspects are entangled to each other (Ministero della Salute, n.y., <http://www.unich.it/>).

In **Poland**, the awareness raises that mental health is essential to overall health and well-being and therefore has to be treated with the same urgency as physical health. The challenges for public health are to identify risk factors, increase awareness about mental disorders (e.g., anxiety, severe cognitive impairment and mood disorders) and the effectiveness of treatment, remove the stigma associated with mental disorders and receiving treatment for them, eliminate health disparities, and improve access to mental health services, particularly among populations that are disproportionately affected. On an individual basis, new research has emerged that there are many things we can do to keep our minds healthy: Many of the same things we do to keep our bodies healthy contribute to healthy minds. Physical activity and a diet that helps lower cholesterol levels and blood pressure also helps to keep our minds healthy by allowing our bodies to deliver oxygen-rich blood to our brains. In addition, activities that stimulate our minds, like crossword puzzles, reading, writing, and learning new things, help to keep our brains healthy. Staying engaged with the people around us and our communities plays an equally big part in staying mentally

fit. To stay mentally fit and ward off mental health problems, the recommendation in Poland are the following (information from websites worldwide; Geriatric Mental Health Foundation, 2005; National Association of Chronic Disease Directors, 2008; ProMenPol Project, 2009; WHO 2011):

1. **Be physically active.** The benefits are numerous. Being physically active helps prevent bone density loss, maintain balance, and ward off illnesses (like heart disease, stroke, and some cancers). For some, illness and disability can bring on or contribute to mental illness. For example, those who live with diabetes, cancer, and heart disease can also suffer from depression. Regular physical activity helps to:
 - Maintain and improve memory and mental ability
 - Prevent dementia (impaired intellectual functioning) including Alzheimer's disease
 - Make us happy and prevent and alleviate depression
 - Improve energy levels
2. Keep blood pressure down.
3. Keep your cholesterol levels low.
4. Eat your vegetables... and more.
5. Monitor your medication use.
6. Drink moderately.
7. Maintain a healthy weight.
8. Give up smoking.
9. Take care of your teeth by brushing and flossing and seeing your dentist regularly.
10. Keep mentally fit.
11. Reduce stress.
12. Stay socially connected.

The information provided by and about **Spain** about mental well-being are partly based on a scale to evaluate psychological well-being (Psychological Well-Being Scales [PWBS]). The multidimensional model of psychological well-being which is

underlying the PWBS consists of six dimensions: **self-acceptance** (positive evaluation of oneself and the past life), **positive relations** (development and maintenance of quality relationships and trust with others), **autonomy** (sense of personal self-determination), **environmental mastery** (ability to effectively lead their own lives and the environment to satisfy needs and wants), **purpose in life** (belief that life has a purpose and meaning), and **personal growth** (sense of continued growth and development as a person) (Díaz et al., 2006). More information about this scale can be read in Annex 2. Also a detailed description of how social support, family, marriage or gender can influence mental health and well-being are given (Annex 3), but unfortunately there isn't any recommendation on how to promote mental well-being for seniors.

That was could be understand as a recommendation is the following, but it is more related to environmental prevention or rather to be understand as a strategic plan: The care of older people should go beyond the purely pathological approach, should cover their entire being, taking into account the interdependence of the physical, mental, social and environmental factors. Consequently, health care must involve all health and social sector and families in improving the quality of life of older persons. The purpose of the efforts in health, particularly primary health care as a basic strategy should be to **enable the elderly to live independently within their own families and community for as long as possible**, rather than exclude and isolate all activities of society. Special attention should be given, in health care, the very old and people who are disabled in their daily life, especially when suffering from a mental deficiency or maladjustment to environment, mental disorders may often be prevented or modified by means existing place the elderly in institutions, such as training and support for family volunteers for paraprofessionals, promotion of outpatient treatment of mental illness, welfare, childcare and measures to prevent social isolation (Instituto Nacional de la Salud, 1999).

2.1.3.3 Conclusion

The research shows, that promoting mental well-being and mental health are comparatively new in the participating countries: Nor Ireland, Italy, Poland nor Spain do have some specific recommendations. In Ireland there aren't any recommendations, Kappaerre describes, what is important to know about life

satisfaction and quality of life but couldn't provide any recommendations for Italy how to reach this. Also ADESPER couldn't provide some recommendations but shows the importance of social support in mental health. The recommendations of Poland are based on the global recommendations and both (Poland and global) include a view on a broad lifestyle recommendation (including physical activity, social connections....). We therefore recommend to hold on the "global" recommendations given by the Wingate College (successful aging tips) and Poland about aspects that can influence mental well-being. We recommend to add methods of stress management (especially for those who aren't yet in retirement), relaxation methods and mindfulness or other meditations who can additionally improve our well-being.

2.2 Recommendations for successful program and course structures

2.2.1 Program structure (Best Practice)

2.2.1.1 *Physical activity*

Despite the evidence regarding the value of physical activity and the clear guidelines for this activity, statistics continue to show that the majority of people do not engage regularly or sufficiently in physical activity. Although strategies to increase physical activity are being developed, effect sizes are usually small to moderate, and effective interventions are not widely applied (Bauman et al., 2012). The prevalence of participating in physical activity is slow to improve and is worsening in some countries (Dumith, Hallal, Reis & Kohl, 2011). It has been shown that 50% of individuals who begin an exercise program stop within the first six months (Robison & Rogers, 1994). Therefore, a broad consensus has emerged in recent years in relation to the desirability of promoting exercise through the development of an active lifestyle.

Older populations are generally less physically active than young adults, as indicated by self-reports and interviews, body motion sensors, and more direct approaches for determining daily caloric expenditure (ACSM, 2009). For example, in the United Kingdom only 10% of older adults (65+) are sufficiently active (Taylor et al., 2004), in the United States – 21.8% (Kruger, Carlson & Buchner, 2007), and in Israel – 33% (Netz, Goldsmith, Shimony, Ben-Moshe & Zeev, 2011). Consequently,

promoting adherence to physical activity behavior in older adults presents a challenge (Rejeski et al., 2013).

The following are some specific behavioral issues and recommendations related to the promotion of and adherence to physical activity in advanced age.

1. One type of intervention for encouraging people to become more active is **exercise prescription**. Usually this is a primary care intervention making use of local community-based leisure centers, which provide structured and supported exercise programs (Thurston & Green, 2004).
2. **Simple advice** in routine primary care consultations may not be effective enough in leading to sustained physical activity behavior (Thurston & Green, 2004).
3. An **extended advice intervention** involving motivational interview-based clinician advice along with telephone counseling increased the physical activity level in older adults. The extended advice intervention was also tailored to a participant's readiness to increase physical activity (Chase, 2013).
4. Studies using **supervised exercise sessions alone** did not demonstrate significant findings in differences in physical activity behavior between treatment and control groups at outcome. This was true regardless of the focus of the sessions (Chase, 2013).
5. For participating in supervised exercise sessions, **goal setting and self-monitoring** were common behavioral strategies (Chase, 2013).
6. **Social commitments** - older adults prefer activities that involve being with other people in a manner that generates social commitments (Rhodes et al., 1999).
7. **Past exercise behavior**, or exercise habits, is important for predicting who will or will not adhere to a physical activity program (Culos-Reed, Rejeski, McAuley, Ockene & Roter, 2000).
8. Adherence to the **on-site exercise classes** was better than to the home-based component of the program (Stineman et al., 2011).
9. **Married people** or those who had a partner were significantly more likely to complete more sessions, and those who attended commented positively on the social aspects of the program (Thurston & Green, 2004).
10. **Feeling of loneliness** (and not living alone) was reported to be associated with an increasing risk of inactivity in advanced age in women (Netz, Goldsmith, Shimony, Arnon & Zeev, 2013).

11. Activity levels are strongly influenced by the degree of **enjoyment**.

12. **Leisure time activity**

Lifestyle activities are characteristically defined as those activities that are individual, flexible, non-competitive and fitness-oriented. There is a tendency towards a reduction in leisure activities with age rather than in out-of-home leisure in general, and physical exercise in particular. The elderly may also hold outdated conceptions of activity itself. For example, they may believe that beneficial physical activity consists only of running or lifting weights at a gym, but does not include carrying groceries or walking the dog. Another misconception involves viewing activity goals in absolute or rigid terms that exaggerate the cost of activity. Some believe that if they cannot walk for one hour they will obtain no health benefits. Such “**all-or-nothing**” thinking can hamper the development of an achievable, acceptable, graduated activity program (Phillips, Schneider & Mercer, 2004).

12.1 **Type of leisure activity preferred by older adults**

There has been a substantial increase in so-called "lifestyle activities", parallel to a decline in the participation rates for team sports. Thus, walking, swimming, cycling and keeping-fit/aerobics feature in the top five sports and physical activities.

12.2 People with a **competitive sport** orientation and participation profile show both an earlier, as well as higher, dropout rate than those with a recreational sport or lifestyle activities profile.

12.3 **Duration for improving adherence**

A 3-4 month program may be insufficient to allow individuals to feel "locked into" participation by the routinization of the behavior, the development of skills and the generation of social networks. The length of time required for such a pattern of behavior to become established is likely to be longer (Thurston & Green, 2004).

12.4 **Leisure activity and the environment.**

Leisure activity was consistently related to transportation environment (e.g., pavement and safety of crossings), to aesthetic variables (e.g., greenness

and rated attractiveness), and to proximity to recreation facilities and locations (Bauman et al., 2012).

13. Factors associated with preventing falls in older people living in the community (Gillespie et al., 2012).

13.1 **Multiple-component group exercise and multiple-component home-based exercise.**

13.2 **Tai Chi** significantly reduced risk of falling.

13.3 **Home safety assessment and modification interventions** were effective in reducing rate of falls and risk of falling especially in people at higher risk of falling, including those with severe visual impairment.

13.4 Home safety interventions appeared to be more effective when **delivered by an occupational therapist.**

13.5 An **anti-slip shoe** device reduced rate of falls in icy conditions.

13.6 There was no evidence of effect for **cognitive behavioral interventions** on rate of falls or risk of falling.

13.7 Interventions to increase knowledge/educate about fall prevention alone did not significantly reduce the rate or risk of falling.

14. Motivation¹⁷

The Lifestyle Interventions and Independence for Elders (LIFE) Study (Rejeski, et al., 2013) indicated that the most frequent motive given by participants for joining the LIFE Study had to do with the desire to adopt an active lifestyle that would improve their fitness or general health. Another frequent motive was the hope to regain or preserve independence, while others were interested in improving a chronic health condition or the symptoms associated with these conditions, most

¹⁷ Motivation is defined as the forces acting on or within a person to initiate a behavior. This definition provides a framework that includes both intrinsic and extrinsic factors. Understanding motivation as more than an inert part of an individual's personality may strengthen care providers' efforts to motivate their elderly patients, and can provide elderly persons with the tools to empower themselves to become self-directed about exercise participation. Multiple motivational models have been developed in the literature, speaking to the complexity of the task of motivating people to adopt exercise as a way of life. There are four elements of the motivation equation: **odds of success, importance of the goal, costs, and inclination to remain sedentary** (Phillips et al., 2004).

commonly back and joint pain. Another group hoped to lose weight, and a small group wanted to enhance the quality of their lives. A variety of additional motives, for example the hope of reducing boredom and looking to satisfy the desire of significant others who recommended the program were also mentioned as motives for joining the study (Rejeski et al., 2013).

15. Methods for promoting motivation

15.1 Self-efficacy and outcome expectations

Central to the design and conduct of physical activity intervention are two constructs from social cognitive theory: self-efficacy beliefs and outcome expectations. Participants are likely to adhere to prescribed behaviors if they feel confident in their ability to do so. They will have high self-efficacy, and if they experience valued, tangible benefits from their efforts, they will also have high outcome expectancies (Rejeski et al., 2013).

Education may also empower senior adults, improving their mental outlook and self-efficacy. Individuals may be taught that if they are not able to engage in physical activity four times per week, they can negotiate their activity level, adapting their exercise prescriptions to two or three times per week. By doing so, they will be more likely to achieve success and thus enhance their exercise-specific self-efficacy (Culos-Reed et al., 2000).

15.2 Behavioral-based interventions

15.2.1 Goal setting and self-monitoring. These showed some success in increasing physical activity levels among older adults (Chase, 2013).

15.2.2 Cognitive-based interventions. These interventions primarily involved counseling interventions. Overall, cognitive-based interventions were successful in increasing positive physical activity behaviors (Chase, 2013).

15.2.3 Combination cognitive-behavioral interventions. Most studies testing cognitive and behavioral interventions to increase physical activity among older adults involved a follow-up of greater than six months, and studies using combinations of cognitive-behavioral interventions reported long-term findings. There may be a greater

effect of cognitive-behavioral-based intervention on physical activity behavior after 12 up to 24 months (Chase, 2013; Rejeski et al., 2009).

15.2.4 Telephone counseling. Telephone counseling for enhancing self-efficacy and barrier management, automated telephone prompting, as well as periodic tailored progress reports all promote physical activity behavior (Chase, 2013).

15.2.5A web-based tracking system (Rejeski et al., 2013). This system provides access to data and information central to the integrity and conduct of physical activity intervention. The website and tracking system have two broad goals: to create a platform for monitoring treatment fidelity and to provide staff with a tool to assist them in the delivery and management of the intervention with participants.

16. Predictors of attrition.

Seniors report that time, money, and family commitments are less significant barriers to participation in physical activity with increasing age. Availability of an exercise partner, illness, injury, and fear of injury become more prominent concerns. *Intrinsic barriers* include falls, fear of falls, injuries, fear of crime, illness, pain, body weight, body image, lack of discipline, lack of skills, limited knowledge, lack of pleasure, and overestimating the time or effort needed for activity. *Extrinsic barriers* include limited funds, transportation problems, parking difficulties, bad weather, availability of exercise partners, lack of exercise facilities, no peer exercise group, inaccessible exercise routines, and lack of instructions (Phillips et al., 2004).

In a study assessing age differences in reasons attributed to omitting exercising, it was indicated that young people reported more reasons for omitting exercise, and the reasons were more external. Older adults reported more internal reasons as well as health-related reasons (Netz, Zeev, Arnon, & Tenenbaum, 2008).

In a recent study conducted to assess factors contributing to attrition from physical activity, dropouts were nearly twice as likely to be members of the profile that exhibited a higher degree of memory complaints, lower self-efficacy for

overcoming exercise barriers, poorer single leg balance, and longer times to walk down stairs (Mullen et al., 2013).

17. Instructions for practitioners

The trained staff should make use of motivational strategies and the setting of goals, such as to (Phillips et al., 2004):

- 17.1 **Educate elders about activity** benefits and practice. It empowers older people to play a more informed, active role in their own health. Knowledge of a participant's definition of health enables the clinician to address his/her specific health concerns.
- 17.2 **Correct misconceptions** that illness and disabilities are caused by activity or necessitate inactivity.
- 17.3 **Promote goal-oriented, gradual, activity progression.** An exercise program should include gradual activity progression with achievable short-term goals. Obtainable goals enable a more pleasant, confidence-inspiring experience.
- 17.4 **Address psychological and physical costs.** In general, the elderly overestimate the various costs of exercise. Some perceived costs, such as exertion or fatigue from the exercise program, may be reframed as positive outcomes, gains, or signs of success from the program. The psychologic costs of participation can be addressed through continued encouragement. The inclination to remain sedentary may be caused by lack of engaging in this appraisal at all.
- 17.5 **Address safety and accessibility.** The exercise environment and regimen must feel and be safe. Safety techniques include joint protection education, gradual exercise and adequate warm-up and cool-down periods.
- 17.6 **Adapt activities and equipment.**
- 17.7 **Promote socialization.**

Table 3: Summary of factors promoting physical activity and affecting attrition

Factors promoting physical activity participation	Factors affecting attrition
Exercise on prescription	Merely advice (with no other behavior intervention)
Extended advice intervention	Supervised exercise alone (with no other behavior intervention)
Goal setting and self-monitoring	Loneliness
Social commitment	Competitive sport
Past exercise behavior	Illness
On-site classes	Injury and fear of injury
Being married	Fear of crime
Self-efficacy	Pain
Behavioral- and/or cognitive-based interventions	Body weight, body image
Telephone counseling	Lack of discipline skills
Web-based intervention tracking system	Lack of pleasure
	Overestimating the time or effort needed for the activity
	Limited funds
	Transportation problems, parking difficulties, bad weather
	Lack of exercise facilities
	Lack of accessible exercise routines and instruction.

2.2.1.2 Nutrition

1. Factors affecting adherence to dietary recommendations

1.1 Socioeconomic position (SEP) - combining household income, educational attainment and occupational prestige.

Education and income make independent and unique contributions to dietary adherence. Adherence to fruit, vegetable and fish guidelines among older adults can be improved, particularly in those with a low socioeconomic status (Coosje Dijkstra, Neter, Brouwer, Huisman, & Visser, 2013)¹⁸.

¹⁸ In this study, among individuals with equivalent diet quality, the magnitude and characteristics of the diet-cognition relationship depended on their socioeconomic circumstances. Adherence to the prudent pattern (vegetables, fruits, fish, poultry, and lower-fat dairy products) was related to higher SEP. High prudent pattern adherence was associated with less cognitive decline only in those with low composite SEP who adhered to the diet. Conversely, adherence to the Western pattern (meat, potatoes, processed foods, and higher-fat dairy products) was associated with more cognitive decline only in those with low educational attainment. Improved diet quality would provide maximum benefit to those with relatively low SEP (Parrott et al., 2013).

1.2 Nutritional education

Providing individuals with knowledge regarding the nutritional makeup of their food is an important first step in positively impacting on adherence to behavior change. This knowledge gives individuals an increased sense of control over their treatment, and is associated with greater adherence to dietary change (Parrott et al., 2013).

2. Adherence characteristics

Adherence to a low-fat diet was assessed among women aged 55 to 80 in the Women's Health Initiative (Kearney, Rosal, Ockene & Churchill, 2002). Adherent women were more likely to report **assertiveness, a lifelong commitment to diet, satisfaction with their lifestyle changes, and having applicable knowledge and skills**. Enhancing adherence of older women to a healthy diet program requires shifting priorities away from conforming to social pressure and using high-fat foods for **personal satisfaction, and moving toward enhancing motivation and commitment to long-term health** (Kearney et al., 2002). Other predictors were **attending intervention sessions** and **self-monitoring dietary intake**. **Optimism** also predicted dietary change (Tinker et al., 2007).

3. Non-adherence characteristics

Individuals with non-adherence characteristics had greater **difficulty in resisting negative emotions** and **prior food preferences and habits**; they were also more concerned about **negative responses from others** (Kearney et al., 2002).

4. Diet and food

Diet quality is a measure of how closely intake matches dietary guidelines in terms of balance, variety, and moderation. However, recommendations differ based on geographic location and regional variations in diet. Based on the fact that people eat food rather than food elements, in order to measure the quality of the diet many studies use dietary scores (Eilat-Adar et al., 2009). These scores are based on specific foods, food groups, and/or nutrient consumption, reflecting the adequacy of the diet based on recommendations. By determining individual

scores, an individual can be placed into a risk category or can be ranked in a sample (Bach et al., 2006).

4.1 The Mediterranean diet

Common constituents of a Mediterranean diet pattern, that are classified as beneficial are high vegetable, legume, fruit and nut, and cereal intake, and as the detrimental are high meat/meat product and dairy intake. Two additional components were scored for alcohol intake and monounsaturated (mainly olive oil) - saturated fat ratio (mainly from animal fat) (Sofi, Abbate, Gensini & Casini, 2010)¹⁹.

4.2 Japanese diet

A higher adherence to a dietary pattern characterized by a high intake of soybeans and soybean products, vegetables, algae, and milk and dairy products and a low intake of rice is associated with reduced risk of dementia in the general Japanese population, aged 60-79 (Ozawa et al., 2013).

4.3 Yogurt

The evidence-based Dietary Guidelines for Americans (U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2010) recommends increasing the intake of fat-free or low-fat milk and milk products. In a cross-sectional study, yogurt consumers had a better diet quality than non-consumers. Yogurt consumption was associated with lower levels of circulating triglycerides and glucose, and lower systolic blood pressure. Yogurt consumers, compared with non-consumers, also had higher potassium intakes and were less likely to have inadequate intakes of vitamins B2 and B12, calcium, magnesium, and zinc (Wang, Livingston, Fox, Meigs & Jacques, 2013).

¹⁹ When examining individual components, only dairy intake was independently - with borderline significance - positively associated with mortality; with increased consumption, the risk of death was increased. This association is likely due to consumption of dairy products in the Greek population consisting primarily of cheese and yogurt, typically high in fat (Trichopoulou, Costacou, Bamia & Trichopoulos, 2003). The HALE project (Knoops et al., 2004) included men and women aged 70 to 90 years in 11 European countries. Excluding the alcohol component, Mediterranean diet adherence was associated with decreased risk of all-cause heart disease mortality, CVD mortality and other causes of death (Knoops et al., 2004). The Mediterranean diet is also associated with a reduced risk of cancer (Giacosa et al., 2013). A healthy Mediterranean diet score also improved quality of life and functional status of older adults (Gopinath, Russell, Flood, Burlutsky & Mitchell, 2013).

5. Other factors (Culos-Reed et al., 2000)

5.1 A decreased sense of smell and taste.

5.2 A decrease in physical activity.

With less physical activity, appetite is generally diminished and the need for caloric intake is reduced. However, if individuals do not adjust their eating patterns accordingly, weight gain occurs.

5.3 Increased medications.

Medications that are associated with aging may affect dietary adherence, since combinations of medications may increase or decrease appetite.

5.4 A change in living situation.

For many, living in retirement homes reduces the actual control that people have over when and what they eat. For many, this loss of control may diminish adherence to a dietary prescription.

Summary

Table 4: Summary of factors predicting nutrition changes and non-adherence characteristics

Factors predicting successful nutritional changes in older adults	Non-adherence characteristics
Tailored program	Difficulty resisting negative emotions
Professional practitioners' guidance	Prior food preferences and habits
Nutrition education - knowledge and skills	Negative responses from others
Self-efficacy	Decreased sense of smell and taste
Assertiveness	Increased medications
Commitment	A change in living situation
High motivation	
Higher income	
Higher SES	
Physical activity	
Adherence to recommendations (e.g., Mediterranean diet/ Japanese/ dairy products)	

2.2.1.3 Mental well-being

Programs for promoting mental health and well-being are usually evaluated among relatively healthy and independent older adults, who are also motivated to perform exercise. Most programs are community-based, well organized and run by trained leaders.

1. **Potential mental health problems** (Center for Addiction and Mental Health, 2010).

- Sadness or depression
- Grief
- Loneliness and isolation
- Anxiety
- Stress
- Lack of satisfaction with life
- Low self-efficacy
- Low self-esteem
- Low motivation
- Negative style of talking
- Difficulty communicating
- Negative attitudes about aging and mortality
- Inappropriate self-expectations
- Chronic or severe mental illness
- Problematic use of substances, including medications
- Heavy alcohol consumption
- Smoking
- Physical illness or impairment
- Trouble handling disagreements
- Making negative social comparisons to others

2. **Potential risk factors for mental health problems** (Center for Addiction and Mental Health, 2010).

Table 5: Risk factors for mental health problems

Family and social factors	Life events and situations	Community and cultural factors
<ul style="list-style-type: none"> - isolation - lack of family support - limited social network 	<ul style="list-style-type: none"> - caring for someone with an illness or disability - death of family member, especially spouse - divorce or family breakup - unemployment - other adverse or stressful life events - retirement - unsatisfactory workplace relationships - workplace-related injury - living in a nursing home - economic deprivation - recent immigration or resettlement - homesickness or culture shock - elder abuse - violence 	<ul style="list-style-type: none"> - low socio-economic status - lack of support services, including transport, shopping and recreational facilities - limited mental health services - social and environmental barriers - stigmas and discrimination - inadequate housing - language barriers

3. Mental strength promotion groups

- 3.1. A longitudinal study reporting on weekly educational sessions led by occupational therapists promoted positive changes in quality of life (assessed by the SF-36 – a well-established, internationally known measurement for assessing quality of life), specifically physical functioning, role functioning, vitality, social functioning, role emotional, and general mental health, after nine months in urban, multiethnic, independent-living older adults (Clark et al., 2001).
- 3.2. A program of twelve lessons helped older women reduce their loneliness. Examples of topics included: expectations of friendship, early experiences in friendship, self-evaluation as a friend, making new friends, improving existing friendships, and setting goals in friendship. Each lesson consisted of theory on the topic, practice in skills that are important in friendship and a homework assignment. A majority of the women in the friendship course were successful in reducing their loneliness; these women had developed new friendships of varying degrees of closeness and had increased the complexity of their friendship networks (Steven & van Tilburg, 2000).
- 3.3. The effect of a 10-week, widely implemented, group-based exercise (gymnastics) program on quality of life was studied in the Netherlands. Participants were divided into a weekly and a twice a week exercise program. Only those who exercised twice a week showed an improvement, mainly in vitality. It was concluded that once a week was not enough to achieve any changes quality of life (Stiggelbout, Popkema, Hopman-Rock, de Greef & van Mechelen, 2004).

4. Psychological interventions - defined as any intervention that emphasizes psychological or social factors rather than biological factors (Ruddy & House, 2005).

Overall, psychosocial interventions such as cognitive training, control-enhancing interventions and supportive interventions had a positive effect on quality of life and positive mental health. Interventions also had a statistically significant effect on social activities, improved positive mental health, life satisfaction and reduced depressive symptoms. Interventions lasting for more than three months exhibited

more positive effects compared with shorter interventions. Meaningful social activities tailored to the older individual's abilities and preferences should be considered when aiming to improve mental health among older people (Forsman, Nordmyr & Wahlbeck, 2011).

- 5 **Physical Activity.** There are several types of physical activity interventions to improve mental health in the elderly.

5.4 **Aerobic interventions**

- 5.1.1 Out of all activities, aerobic exercise improved psychological well-being the most (although followed closely by resistance exercise) (Netz et al., 2005).
- 5.1.2 In a study from Poland, 52 neighborhoods were randomly assigned to a 6-month, 3 times per week, leader-led walking group activity or an information -only control group. There was a significant improvement in the walking group in the primary outcomes of quality of life (assessed by the SF-36), in both the physical and mental summary scores, as well as in life satisfaction (Fisher & Li, 2004).
- 5.1.3 In a cross sectional analysis from the Nakanojo (a medium-sized town in Japan) study, aspects of impaired mental and psychosocial health, such as a depressive mood state and a poor health-related quality of life, were less prevalent in elderly individuals who met even very modest minimum standards of habitual physical activity: at least 4000-5000 steps/day and/or at least 5-7.5 min/day at a moderate intensity. However, causal effect cannot be proved and there is a need to determine whether physical activity influences mood or whether the converse is the case (Aoyagi & Shephard, 2010).
- 5.1.4 A pre-planned meta-analysis concluded that exercise produced a small but significant improvement in the emotional health component of quality of life with a clear trend toward an improved social component. However, no dose-response of the above recommended levels was found (Schechtman & Ory, 2001).
- 5.1.5 Moderate exercise, and not vigorous exercise has the greatest benefit for older adults' psychological well-being (Netz et al., 2005).

5.2 **Strength and resistance interventions**

A small-to-moderate improvement was measured in the quality of life (assessed by the SF-36) emotional health subscale following resistance exercise. However, although the successful programs lasted between three and six months, the results were inconclusive (Windle et al., 2008)

5.3 **Mixed exercise** - defined as any moderate-intensity exercise (not clearly defined among studies).

5.3.1 Mixed exercise programs, including various exercise modes (aerobic exercise, strength training, calisthenics, etc.) have beneficial effects on mood-assessment characteristics (Arent, Landers & Etnier, 2000), as well as on psychological well-being and self-perception (Netz et al., 2005).

5.3.2 In a six-month controlled trial examining the effect of walking and stretching/toning activity on self-efficacy to overcome barriers, efficacy related to continued activity participation increased after two months but significantly declined at four and six months (McAuley, Jerome, Marquez, Elavsky, & Blissmer, 2003). However, as the reported exercise programs cover a range of types, settings and countries, firm conclusions about the duration of programs and the frequency of sessions are difficult to make.

5.4 **Other physical activity interventions**

5.4.1 There is no robust evidence that other forms of exercise such as **balance-training** improve mental well-being (Windle et al., 2008).

5.4.2 **Tai Chi** was not found to have superiority above other physical activity programs in promoting mental health (Windle et al., 2008).

5.4.3 **Everyday physical activity**. Although a recent study shows that for older people over 60 years, everyday non-exercise physical activity is as recommended as regular exercise for longevity (Torjesen, 2013), there is no robust evidence that other forms of exercise, such as gardening, improve mental well-being (Windle et al., 2008).

Summary of guidelines for carers and professionals (Centre for Addiction and Mental Health, 2010).

1. Identify and address a specific population for your program/initiative.
2. Address and modify risk and protective factors, including determinants of health that indicate possible mental health concerns for older people.
3. Intervene in multiple settings.
4. Support professionals and non-professionals in establishing caring and trusting relationships with older people.
5. Focus on empowerment and resilience.
6. Promote comprehensive support systems.
7. Adopt multiple interventions.
8. Ensure that the information and services provided are culturally appropriate, equitable and holistic.
9. Involve multiple stakeholders.
10. Address opportunities for organizational change, policy development and advocacy.
11. Demonstrate a long-term commitment to program planning, development and evaluation.

2.2.2 Special considerations for seniors

2.2.2.1 Do's and don'ts of physical activity

There are some contraindications that will prohibit participation on the course. The list makes no claim to be complete (Regelin, Winkler, Nieder & Brach, 2008; Tittlbach, Binder & Bös, 2012):

- Absolute contraindications
 - o Acute neurological deficits
 - o Acute inflammatory processes/pain
 - o Acute diseases/affection/fever
 - o Hypertension (untreated)
 - o Condition after surgery
 - o Condition after coronary artery disease
 - o Condition after stroke
 - o Aneurysma
- Relative contraindications (participation possible after consultation of a physician)

- Advanced osteoporosis with increased risks of bone fractures or acute state of pain
- Chronic pain with depressive mood, drug addiction
- Healed up defects of spine or spinal disc with chronic sensitive and/or motoric deficits

As mentioned above (part 2.1.1.1), some risk of injuries exist when doing physical activities. To prevent the risk of injuries (e.g., of the musculoskeletal system) and adverse events (e.g., heart attacks during activity, overheating or dehydration) and do physical activity safely, people should consider the following key guidelines for safe physical activities of the USDHHS (2008b, p. viii): More details can be found in Annex 4.

- Understand the risks and yet be confident that physical activity is safe for almost everyone.
- Choose to do types of physical activity that are appropriate for their current fitness level and health goals, because some activities are safer than others.
- Increase physical activity gradually over time whenever more activity is necessary to meet guidelines or health goals. Inactive people should “start low and go slow” by gradually increasing how often and how long activities are done.
- Protect themselves by using appropriate gear and sports equipment, looking for safe environments, following rules and policies, and making sensible choices about when, where, and how to be active.
- Adults with chronic conditions obtain important health benefits from regular physical activity. When adults with chronic conditions do activity according to their abilities, physical activity is safe.
- Be under the care of a health-care provider if they have chronic conditions, disabilities or symptoms. People with chronic conditions, disabilities and symptoms should consult their health-care provider about the types and amounts of activity appropriate for them.

Special caution has to be made for seniors with diabetes mellitus. You can find do's and don'ts of physical activities for seniors with diabetes mellitus in Annex 4.

2.2.2.2 Recommendations for seniors about nutrition before, during and after exercise

Recommendations about nutrition before, during and after exercise are more important for athletes but some points are also important for seniors when they engage in physical activity. Especially the consume of fluids is important to avoid dehydration:

- Drink 0.5 – 1 liter water per hour during intensive physical activity with small swallows
 - Physical activity <60 minutes: you can drink during activity, but you don't have to (exception: strong sweating, heat). Drink adequate before and after physical activity.
 - Appropriate fluids are mixed drinks (water with fruit or vegetable juice in proportion 1:1 to 1:3 (juice:water)
 - Inappropriate beverages are: undiluted fruit juices, caffeine-containing drinks, soft drinks
 - Use mineral water with small amounts of sparkling
 - A beverage temperature of 5-10°Celsius is optimal; during cold temperatures, tempered beverage (e.g., herbal or fruit tea)
- (Deutsche Gesellschaft für Ernährung [DGE], 2006, 2011).

No special nutrition is needed for seniors who engage in physical activity. All requirements can be covered by daily balanced nutrition intake recommended above. However there are some tips for nutrition intake before physical activity that food can be digested and absorbed²⁰ and seniors can avoid stomach discomfort during physical activity:

- Have a meal about 3-4 hours before physical activity
- Have a lighter snack (e.g., fruit, cereal bar) about 1-2 hours before physical activity

(Australien Sports Comission, 2009)

Instructors will need information about the medication and the exposure to use in physical activity (e.g., for asthma, insulin, antihistamines, diuretics, beta blockers).

²⁰ Time for digestion depends on type and quantity of food consumed and varies between individuals

2.2.3 Models of healthy living

Most of the time, models of health consider physical activity and nutrition as a means of improving physical and mental health or physical and mental well-being and is not rarely seen isolated. Wagner and Brehm (2006) developed a model which highlighted potential effects of physical activity on well-being. As the definition of health of the WHO (1946), they divide well-being²¹ in a mental, physical and social part of well-being with a differentiation in factors that have been shown to be meaningful for this dimension (see figure 5). As you can see, there are some equivalents to the personal health resources that are mentioned above.

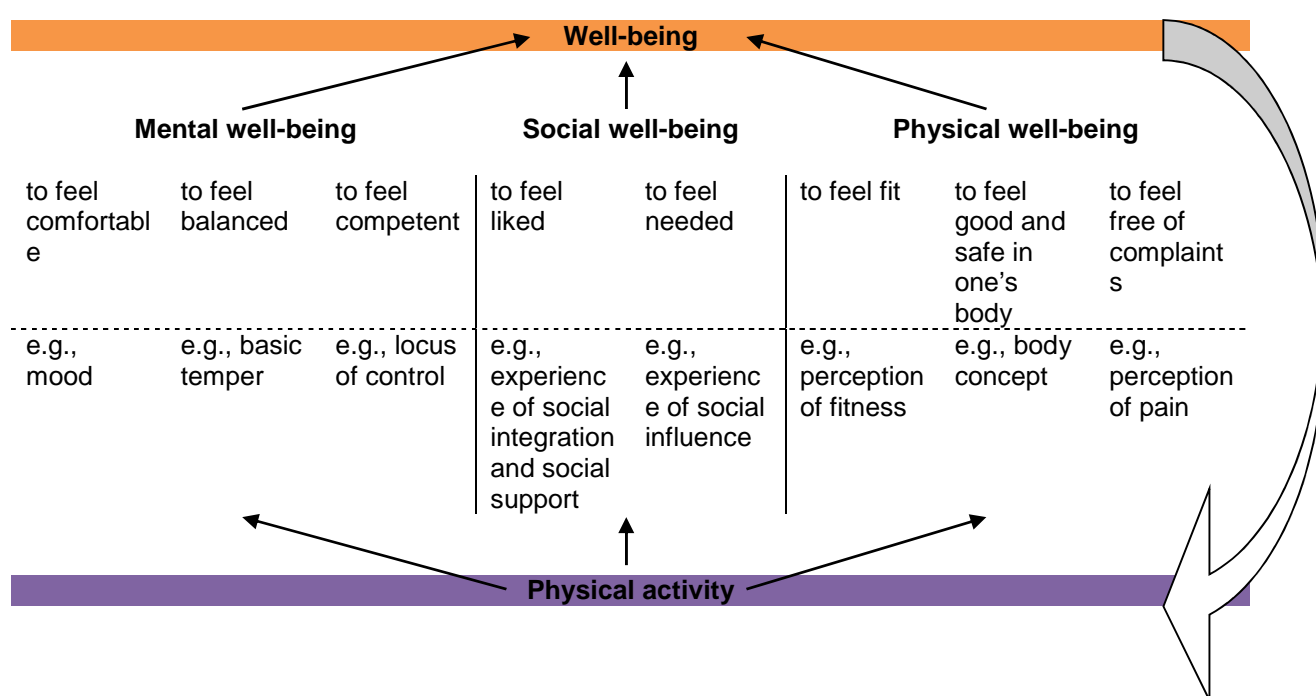


Figure 5. Concept of correlations between physical activity and well-being (translated and modified after Wagner & Brehm, 2006)

There are evidences that physical activity has a positive influence on different parts of well-being, also for older adults (Hyde, Maher & Elavsky, 2013; Netz et al., 2005;

²¹ Well-being has in each dimension an actual and a habitual part. *Actual well-being* means the actual experiences of a person regarding mood and absence of physical complaints for instance. Actual well-being consists of limited duration and is related to persons, situations or actions. After physical activity, a good but healthy meal or a mindful meditation one may feel good, fit, satisfied, acceptable tired, relaxed, feel competent or without complaints etc. In comparison to that, *habitual well-being* describes the typical well-being, e.g., general good feeling and mood, less negative feelings, habitual satisfaction with mental and physical condition (Abele & Becker, 1991).

Wagner & Brehm, 2006) and there also exist approaches to explain the effects on mental health (Wagner & Brehm, 2006). It would be too much for our purpose to explain them in this context. We added a reciprocal arrow from well-being to physical activity because how we feel ourselves also influence our physical activity behavior. If one feels incompetent or full of complaints or unfit at a day, one won't possibly do physical exercises.

Also nutrition and well-being can be seen in a reciprocal relationship. When one prepare and enjoy a good meal, one will feel good afterwards. But there also exists negative relationships: also junk food and sweets let us feel happy (actual well-being) when we feel stressed or unhappy. This leads in a longterm to weight gain which again can lead to comfort eating because of dissatisfaction with the body. Dietary eating to lose weight can lead to dissatisfaction because one has to disclaim on preferred foods or due to hungry feeling.

Out of these considerations we recommend to consider the interdependency of the parts physical activity, nutrition and mental well-being because the parts reinforce reciprocal and can influence each other in a positive and negative way (see also Kleinert & Neuber, 1996). All of these factors influence our physical and mental health condition negatively as risk factors but also positively as personal health resources. We still have in mind, that there are other factors like society, environment, health policy or predispositions that play an important role for health conditions, but figure 6 should only show the interaction of our points of interest and the relationship to a healthy life.

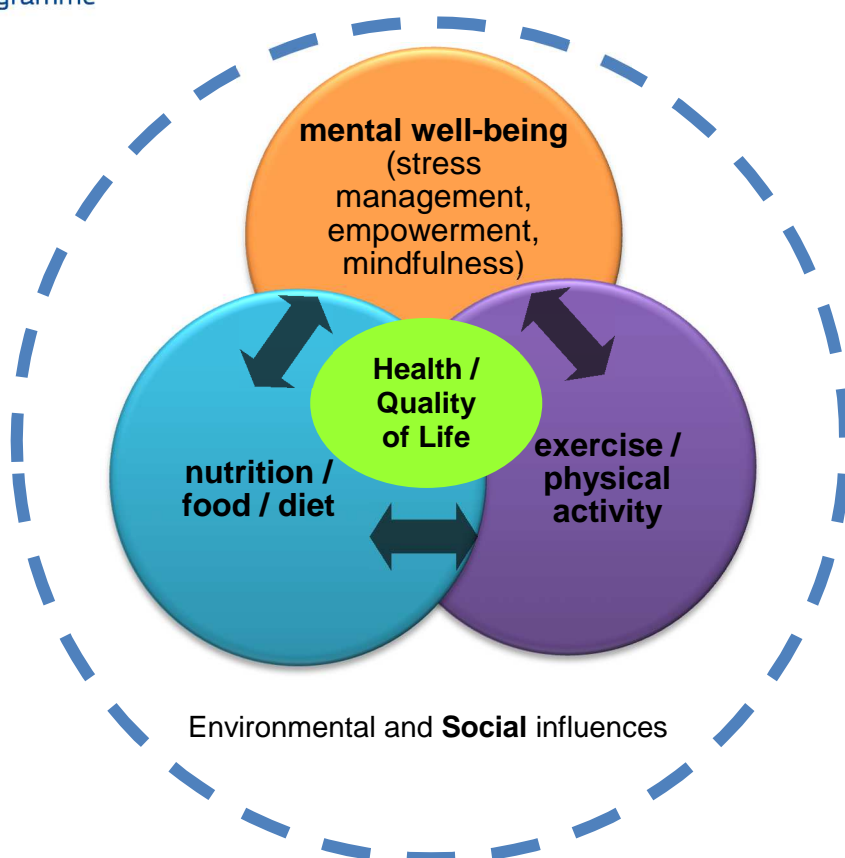


Figure 6. Healthy Living

Kappaerre provides a description of Life satisfaction and quality of life: *Life satisfaction* is a feeling that can be referred as „adaptation to the last step of life“ and includes:

- gratification that the person receives from social and physical activities during his/hers old age;
- defences from external pressure (lack of attention, lapse of memory, abnegation, devaluation, impoverishment);
- satisfaction in carrying out normal activities asked by the family and by the micro-societies that surround him/her;
- being optimistic and keeping a good mood even facing daily worries;
- critic approach to his/her past with acknowledgement of a personal responsibility;
- the awareness of having or not having reached his/her goals and most of all, an old age;
- a positive self-image (related to the self or to the society to which he/she belongs) referring to the past without taking too much in to account today's weaknesses.

Mood is connected to the approach that the person has in front of difficulties, loss and daily problems. It can be referred as „mind strength“ and „psycho-social resistance“. *Happiness* expresses gratifying feelings connected to positive experiences that are lived especially in relationships and in-the-family relationships and inside the belonged social group. The three analyzed aspects (life satisfaction, mood and happiness) refer to a psycho-emotional world which considers:

- The **pleasure of living** (versus apathy) which reflex the level of involvement in activities, in the interpersonal relations, views exchange and furthermore the enthusiasm put into initiatives without caring about results or social approval;
- **Mind strength and resoluteness**: these are the opposite of resignation and passivity; they can be measured with the acceptance of present responsibilities without being influenced by past success or difficulties;
- The congruent balance between ambitions, goals and success: it is structured by the analysis of results obtained in reaching goals and personal success;
- **Self-esteem**: the level of appreciation of physical and psycho-social individual features and it reflects the self-consideration of physical appearance, of the public image, of personal evaluation of having a clear and efficient mind, of the feeling of being important in front of others;
- The tendency to **optimism** and „being in a good mood“: it considers also optimistic attitudes, a positive emotional approach and of self-acceptance towards others, a sense of pleasure in front of things and personal experience; it is also expressed through mimicry and verbal expression.

In conclusion we can state that the quality of life is determined by two aspects that, even if very specific for each individuals, are always entangles to each other's:

1. **Personal life satisfaction:**

- Personal life satisfaction is related to self-esteem, sense of oneself, prospective for the future and considerations on past goals reached or not; reflects and is conditioned by personality structures and, therefore, responds to oral, anal and genital dynamics but, on the other side, can be valuated objectively taking account of:

- Satisfaction of being able to be one self with the capacity of development and freedom.
- Sensation of being healthy physically and psychologically;
- In the process of ageing personal characteristics can be modified that, on his own, is responsible for a closure of the self, a predominance of narcissism, an obsessive defense in relation to loss.

2. Social or relational life satisfaction:

- Social or relational life satisfaction reflects the continuous verification of his/her social role which needs a constant control because is constantly evolving and therefore is always doubted; reflects:
 - the sense of power that is evaluated on the possibility of express his/her opinion, respect his/her needs and instincts, verify the possibility of being not only accepted but also to make his/her dreams come true;
 - the sense of being important in the relationship with others, where physical, psychological, mental and relational memory capacity are put at stake.
- This approach has a particular relevance because it takes into account both the intra-physic issues (personal, individual and libido) and the inter-psychoic ones.
- is related to the relational process that is always asymmetric being not able to develop and to maintain on a one-side level; the operator or caregivers is obliged to consider the senior as a disable person, because most of the time he/she is not capable of containing the distress of castration (and so not to fall into the distress of death) for the losses he/she has to face.

Characteristics associated with old age are:

- wanting to be right all the time;
- living his/her own experience as more valid in comparison with these of others.
- considering the past better than the present;
- will to command;
- considering strangers better people than the family who works hard for him/her;
- refusing unconsciously everything that is labelled as „Young“;

- not being able to accept the evident „sclerosis of the mind“
- using protective models and of negation to control memory deficiency

This attitude complicates the relation, structuring it as „assimetric“ and therefore imposing a particular preparation and training for caregivers. In order to define the quality of life, seniors consider various needs that they hope can be met or that they believe must be met. (Ministero della Salute, n.y.; <http://www.unich.it/>).

2.3 Tasks on implementation knowledge

2.3.1 Best practice examples

2.3.1.1 Best Practice in **Ireland**

ProActivate found some organizations who are working with seniors, mental health or active ageing and which are interested in our course concept but couldn't provide best practice examples. They are interested in our course concept.

- **Mental Health Ireland** (www.mentalhealthireland.ie; Contact Orla Barry) is a national, ongoing program for well-being that already started in 1966. Orla would be interested in looking at the program.
- **Active Retirement Ireland** (www.activeirl.ir; Contact Peter Kavanagh) is a group that currently do not have a program in use for physical activity, nutrition or mental well-being but has 554 Individual groups in Ireland. This organization does not set programs or recommend to their groups what to do, it's up to each group to organise their own ideas such as yoga class or speakers on specific topics. They would be interested in the program but not sure if it would suit their set up. The same is valid for **Age and Opportunity**.
- **Age Action** - U3A (www.ageaction.ie; Contact Gerard Scully). Age Action has a strong network in Ireland and acts as support and liaison for existing groups, so that for example if Lucan U3A were organising an event and wanted to invite some members from Blessington U3A, AAI could help with communication and administration. They are working on a national level in Ageing Centres, Age Action Centres as well as in the community on physical activity and mental well-being topics. Gerard Scully would be very interested in a program covering all aspects of Healthy Active Living for Seniors and for this he has stated that he

would present the program to the management and thinks that it would be welcomed.

- **Irish Heart Foundation** (www.irisheart.ie; Contact Feda Kennady) is a foundation that offers physical activity programs and nutrition consultancy since 1990 on a national level. They have current programs in place for people at work (and in the community) but not specific for seniors. They are working with the stages of change model by Prochaska & DiClemente and recruit the participants in work based companies with working age group (18-65 years) from school and community as the target group.

2.3.1.2 Best Practice in Italy²²

Kappaerre could find some project homepages (<http://www.azioniperunavitainsalute.it/>; <http://ssai.interno.it/>; <http://www.tuttitalia.it/>; <http://www.slowmind.net/>; <http://www.ondaosservatorio.it/>) but describes some other best practice examples:

- **P(i)ATTI DI SALUTE – Star bene a tavola** (English: Courses/Covenant healthy – Feeling good at the table) (www.usl11.toscana.it) is a regional project of the Azienda ASL 11 Empoli about nutrition. It started in 2014 and is ongoing, but couldn't provide some data so far which could be used as examples of good practice. There is no special consideration of seniors. Here are some facts about this project:
 - o Awareness campaign about correct eating habits without sacrificing the well-being at the table due to the consumption of nutritionally balanced and tasty meals
 - o The task force made necessary to combine nutrition and taste through the provision of knowledge and skills which, becoming a common heritage, can help to revise and expand in healthy way the home-prepared daily meals method.
 - o Goal: To raise awareness and educate people so that the quality nutritional become a prerogative of their eating habits, enhancing at the same time, experiences and traditions of our community.

²² The detailed program descriptions are attached as a separate file (Kappaerre_program description)

- Aimed at the whole community with a focus on the aged population. This is the age group that has all along the virtue of eating Mediterranean diet.
- Dissemination through the newspaper "The Nation"
- **ANZIANI IN MOVIMENTO** Invecchiamento, fragilità, alimentazione, movimento "LA FORZA DELL'ANZIANO" (English: seniors to movement "The strength of the seniors") ([sds.firenze.it/anziani in salute](http://sds.firenze.it/anziani_in_salute)) is an ongoing, regional project of the institution Società della salute (SDS) which is currently in implementation (start 2012). It covers all aspects physical activity, nutrition and mental well-being (loneliness). It takes place in homes for senior citizens, ageing centres, community and parks.
 - The project's target is seniors self-sufficient and its aim is to facilitate and encourage the use of healthy life styles in a group of selected seniors.
 - Cooperation between numerous social, religious and activity physical support association and corporation of the healthcare
 - Purpose of the project: (1) Proper nutrition, through the acquisition of knowledge needed to responsibly manage the daily nutrition. (2) An adequate physical activity by activating the courses of "gymnastics" and helping to perform daily physical activities independently. (3) A better social life, encouraging people to dialogue and confrontation through recreational activities
 - Where the elderly person loses self-sufficiency, Tuscany and Florence give a civil supportive answer, to about 80,000 people over- 65 years that they need it, through the creation of "points together" to answer the most pressing questions from families with dependent elderly.
 - Finally, for the elderly who live alone has been set up the service "help the elderly", which works every day, 24/ 24 hours with a toll free number 800 801 616, which are located inside the advice, information, support, house visits
 - The principle on which the project is based is the prevention of psycho-physic decadence through the psychological support of lone seniors and the promotion of a healthy life style in order to avoid the risk of non self-sufficiency and marginalisation.

- Environment is seen as an important part of health promotion, because the environment influences olds' ability to remain actives taking part to social life. To improve upon the environment means improving olds' life quality and those who take care of them. To facilitate the possibility of movements, paying attention to movement difficulties and disability.
- *Recommendations on food:* Food doesn't mean only to feed the organism with all different nutritious substances but also to eat with pleasure. Special diet is not required, fit is possible to maintain own food customs paying however attention on changes which normally happens in the organism. They recommend to count calories and be careful with correct distribution of needs but also to remember numerous factors which have an influence on food behavior needs and individual wishes, physical and mental conditions, social milieu, physical activity, foods current offers, advertising). A healthy person, major than 60 years, needs 1600/1900 calories (female sex) and 1900/2250 calories (male sex) per day. This basic need decrease of 10% for over 70 years old, taking in account the balance and variety of the diet. Attention has to be paid to overeating due to psychological reasons. Daily nutrition should be divided into three main meals and two snacks and match a varied and rational distribution of food during the day. A BREAKFAST energy, a small snack mid-morning based on fruit or yogurt, LUNCH, SNACK in the afternoon light that allows to arrive at a DINNER simple and not too abundant, to avoid encumbering the night. The Mediterranean diet, which consumed every senior in his youth, is the most recommended; made of healthy and genuine food. They also recommend to drink a lot of water and fluids but avoid liquors.
- *Recommendations on Physical Activity:* They recommend a daily walk of 30 minutes at a normal pace and to integrate daily activities with daily efficient physical activities. Walks outdoors are especially recommended because of fresh air and the sunlight (for Vitamin D formation)
- Target Group: between 64 and 100 years
- Course content:
 - Pathways to Adapted Physical Activity (APA)
 - Informational meetings on healthy lifestyles

- Meetings with the Geriatrician
 - Workshops and guided tours for proper nutrition
 - Moments of socialization (walks, theater, exhibitions, dance parties)
- **A PIU VOCI** – Un progetto per le persone con Alzheimer e per chi se ne prende cura (English: With many voices – Project for people with Alzheimer's disease and their carers) (www.palazzostrozzi.org) is an ongoing, regional project in Tuscany about psychic well-being. It started in 2011 by the institution Fondazione Palazzo Strozzi (contact person: Luca Carli Ballola) and takes place in regional Museums. This project offers caregiver and family members of people with Alzheimer's the ability to acquire a model of communication with the people they care. As we won't target with Alzheimer's disease, I won't describe this project here.

2.3.1.3 Best Practice in **Poland**

The research of Maraton Warszawski shows, that there aren't much possibilities for polish seniors to get good and reliable information about a healthy active living tailored for seniors. Magda of Maraton Warszawski describes the situation in Poland as follows: "In sources available in Poland you can find a lot of training programs for such sports as running, swimming, cycling and nordic walking. However, finding the optimal training program for person over the age of 50 is still a challenge. The most common source of information in today's world, the Internet, does not provide even a basic knowledge about training programs for seniors. Seniors who want to start a physical activity can find on the internet only perfunctory information and therefore are forced to seek guidance and personalize tasks depending on the current state of health and fitness on their own. Training programs created in the project ACTIVE I will certainly be a novelty among leisure opportunities for seniors in Poland – namely active leisure. We hope to strongly contribute to this."

Some exceptions are:

- The „**Senior starszy, sprawniejszy**” (elder senior efficient) program, which is one of the few programs (completed) for active seniors in Poland (<http://ucsir.pl/program-senior-starszy-sprawniejszy.html>)

- The Association called **TKKF** (association of promoting physical culture) - one of the main point of their activity is SPORT for "THE PEOPLE IN GOLDEN AGE" (<http://www.zgkkf.pl/kierunki4.html>)
- A nationwide educational campaign for people 60 + (<http://www.kampania60plus.pl/>)

2.3.1.4 Best Practice in Spain

ADESPER could provide the following overview²³:

Title	Website	Contact person	Further description	
Plan Integral de Promoción del deporte y la actividad física "A+D project"	www.csd.gob.es/csd/sociedad/plan-integral-para-la-actividad-fisica-y-el-deporte-plan-a-d/201cactividad-fisica-y-deporte-en-personas-mayores201d/	Patricia Piñero	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Programa Mayores creativos en el ámbito rural	http://www.aupey.org/mostrar_noticia.php?id=1164	Yolanda Deocano	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
El camino de la dependencia a la autonomía	http://www.enclaverural.es/enclaverural_01/buenas_practicas/cultura_ocio_participacion/buena_practica_jerez/index.htm	David Vaquerizo Collado	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Envejecimiento Activo	Actions for inclusion: The methodology in social inclusion, good practices and participatory workshops	Ester Santos Gasco	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Proyecto Piloto para mejorar la atención domiciliaria en algunos municipios de Euskadi	http://www.fundacionpilares.org/docs/DOCUMENTOSMETODOLOGICOSYPIM.pdf	Judith Salazar	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

- **Plan Integral de Promoción del deporte y la actividad física "A+D"** (English: Integral Plan for promoting sport and physical activity (A+D)) (<http://www.planamasd.es/>, Contact: Patricia Pinero) is an ongoing national project (start 2008) that promotes physical activity, nutrition and mental well-being in homes for senior citizens, ageing centres, communities and sport clubs.

²³ The detailed program descriptions are attached as a separate file (ADESPER_program description)

- The program which is called “Move your body, open your mind” aimed at people aged 40 years in which motion exercises combined with memory exercises, easy to perform will be proposed for older people to take them out from home, from the day center, residence, accompanied by a caregiver or alone. Diet advice and healthy living habits is also included.
- Such programs give rise to combine information and training as well as cognitive aspects such as attention, memory, spatial and temporal orientation, reaction and physical aspects among which include aerobic endurance, flexibility work, joint mobility, breathing, relaxation, among others.
- Objectives: (1) Introduce healthy activities: physical activity and cognitive activity in a widely used medium and very strong among older people as television. (2) Raising public awareness in general and especially those over the benefits of physical and cognitive practice can bring. (3) Sensitize people over the benefits of an active and healthy life. (4) Propose a program of exercises that can be performed by autonomous elderly and frail dependent older people and from home can make proposals independently or in collaboration with their families. (5) Work the prevention of dependency from the same address and through an affordable as the whole society as television.
- Recruitment and training of trainers: qualified professionals, hired by municipalities or local bodies; training for the instructors conducted by National Sports Council.
- Advertisement: Local Newspaper, Website of the municipal corporation, municipality bulletin, radio ads
- Target group: The activities are aimed at principally people +40 years, although in actual practice, users were selected from groups of +60.
- Organizational framework: 1 course per year, 3 months each, Session 2/week à 60 minutes
- Course content: (1) Awareness campaign on the benefits of the practice of physical activity: "Decalogue of Good Practice Advice" "Good Practice Guide". (2) Exercise and Physical Activities in the Parks Program "Get active in the parks". (3) Cognitive activity through the motor work. (4) Specific activities: "The Day of 10,000 steps"

- They developed a workbook of active ageing and the Decalogue of good practice as course materials.
 - Security: no medical certificate requested
 - Success factors: Well-qualified instructors, able to promote healthy initiatives both in the field of mental well-being and physical.
 - (Lizalde Gil & Llano Ruiz, 2009; Pons & Gómez, 2011; Pont et al., 2009, 2011; Interview: Patricia Piñeiro, Ayuntamiento de Villaquilambre)
- **Mejora de la atención domiciliaria y la inclusión y participación comunitaria de las personas mayores – Etxean Ondo** (English: Improving home care and community inclusion and participation of elderly) (www.matiainstituto.net, www.matiafundazioa.net; Contact: Miguel Leturia) is a regional project and in a state by Fundación Matia that covers physical activity, nutrition and mental well-being for adults in situations of fragility, disability or dependence and their families. It started in July 2011 and is ongoing until June 2014. As it does not really fit to our target group, I only describe the project very shortly. ADESPER provided us this project as in-depth study because they see the innovative approach which not only works with elderlies but includes one's family and the environment.
- The project Etxean Ondo - Delivery Services and Neighborhood, addresses build and implement a model of comprehensive care and person-centered (AICP) to their situation of fragility, disability or dependence require support, professional care and other aid people to remain living at home and developing their own lives.
 - Pilot project for integrated home care, in which different formulas to determine which services and how intervention model the permanence of the elderly in their habitual residence ensures the best conditions for quality of life was assessed, as well as their full participation and social inclusion Community
 - Aim: That the elderly and people with disabilities in need of support and care (living in their homes or centers) and the family carers receive comprehensive, coordinated and continuous manner and in the best

- conditions for their well-being and quality of life, ensuring their greater independence and personal autonomy.
- Recruitment and advertisement: website, councils communications, newspaper etc.
 - Success factors: The guarantee of rights, empowerment, participation of people and identifying strengths, even in situations of fragility, vulnerability and dependence involve the recognition that each person is unique and the protagonist of his life project.
 - (Martinez & Rodríguez, 2002; Martinez Rodríguez, 2011; Rodríguez Rodríguez, 2010, 2011a, b; Yanguas, Leturia & Leturia, 2001)
- **Nuestros mayores activos** (English: Our active elders) (www.aupep.org, Contact: Carmen Cabanillas) is an ongoing (start 2011) project by Asociación de Universidades Populares de Extremadura (AUPEX) that promotes active aging through processes that provide opportunities for participation, security, relationship and health of older people.
- Objective: providing processes for active aging by optimizing and generating new opportunities for social participation of elderly people in Extremadura.
 - The methodology of "Our Active elders" lies and highlights the role of Active Groups (AG) and have the same weight when designing and implementing action plans, some plans designed by them and for them.
 - Asset Groups are still considered basis for action in the program. These groups are comprised of seniors and not elderly people of the locality who are interested in working the management, planning and design activities. The importance of these lies in the joint analysis it makes about its reality to plan activities that will affect the rest of population.
 - Course content: Depending on the interests of an AG or other activities so that the content in the various locations may be programmed differently. Working interest. Once these are cononcen intreses, AG working with of the locality to plan an activity in which all people share.
 - Course material: Different materials depending on the scheduled activity. There is a common link to the beginning: the training and awareness of the components of the AG. (see all AUPEX references 1-11)

2.3.1.5 Conclusion

The research results shows, that there really is a need of a program targeting seniors to promote physical activity, nutrition and mental well-being. Ireland has some organization targeting seniors which are interested in our concept but couldn't provide us some best practice examples. In Italy, two programs seems to be interesting: "Anziani in movimento" and "P(i)atti di salute". Unfortunately P(i)atti di salute is just starting, that we aren't able to learn from them. Maybe Kappaerre could stay in contact that we can profit from each other. "Anziani in movimento" instead is ongoing at the moment. But beside some recommendations on food and physical activity aren't there information that can be used as a best practice example. Furthermore, the recommendation on nutrition does not really fit to our idea of health promotion as we don't want to recommend to count calories to the seniors. The most interesting (after my opinion) aspects are the cooperation of different organizations and the hotline to help lone older people. It seems that Poland is the place where the biggest need becomes obvious as they do not really have easy access to programs or even organizations promoting active ageing or healthy topics for seniors. The projects in Spain seems to be very interesting each but also do not really give us clues how to do it right instead of proper train the instructors. As an idea: we can add some training tips which target the cognitive function as in "Move your body, open your mind". What we can learn is, that we are on a good way in raising awareness of the importance of our three aspects in health promotion of the older people. We do have in mind how important support of family, communication and participation of the seniors will be.

2.3.2 Training of instructors

To allow a better readability, I will only give you a short consolidation of our recommendations for the training of instructors. You will find a detailed description and explanations in Annex 5.

To ensure safe, effective, and accessible physical activity/fitness programs for older adults and to develop competent physical activity instructors of older adults, we recommend to orientate ourselves towards *the International Curriculum Guidelines for preparing physical activity instructors of older adults*, which are the following nine training modules (Ecclestone & Jones, 2004, pp. 469-474, slightly modified):

1) Overview of aging and active lifestyle

- general background information about the aging process and the benefits of an active lifestyle

2) Psychological, sociocultural and physiological aspects of healthy living and older adults

- psychological, sociocultural, and physiological aspects of healthy living in order to develop safe and effective healthy living programs for older adults

3) Screening, assessment and goal setting

- information on selection, administration and interpretation of pre-exercise health and activity screening, fitness and mobility assessments and eating habits appropriate for older adults
- this information will provide the basis for active living program design and appropriate referrals to other health professionals
- information on establishing, with client input, realistic and measurable short, medium and longterm goals

4) Program design and management

- how to use results from screening, assessment and client goals to make appropriate decisions regarding healthy active living course program design and management

5) Program design for older adults with stable medical conditions

- common medical conditions of older adults, signs and symptoms associated with medication-related negative interactions during activity and how to adapt exercise for clients with different fitness levels and stable medical conditions to help prevent injury and other emergency situations

6) Teaching skills

- information about motor learning principles that guide the selection and delivery of effective individualized and group exercises and physical activities and the construction of safe and effective practice environments

7) Leadership, communication and marketing skills

- information on how to incorporate effective motivational, communication, and leadership skills related to teaching groups as well as professional leadership skills and how to create effective marketing tools for program and self

8) Client safety and first aid

- information on how to develop a risk management plan to promote a safe exercise environment and respond to emergency situations

9) Ethics and professional conduct

- information on legal, ethical, and professional conduct

Recommendations for qualifications for instructors

We recommend that the trainer of the pilot course should at least have:

- an academic degree in either
 - sport and exercise science (degree: Bachelor or Master)
 - nutritional science (ecotrophology; degree: Bachelor or Master)
 - health science (degree: Bachelor or Master)
 - with courses/modules especially designed for older people respectively
 - gerontology (degree: Bachelor or Master)
- experience as a trainer in the field of physical activity, nutrition and/or mental well-being/relaxation
- experience in the work with older people (trainer for older adults physical, cooking classes, social worker)
- participation in the initial training for instructors

The trainers which will be educated by the initial trainers should at least have:

- a trainer/exercise instructor certification in the field of physical activity with a special education in physical activity for seniors (health exercise, exercise in prevention, exercise in rehabilitation, exercise in therapy)
- or a trainer/instructor license in mental well-being/relaxation with a special education in relaxation methods for seniors
- or an education in nutrition for seniors
- experience as a trainer in the field of physical activity, nutrition or mental well-being/relaxation
- experience in the work with older people
- participation in the training for instructors

Competences of instructors

The instructors will need to have or learn some professional, planning, mediating and social competences in the work with older people (Kleinert & Neuber, 1996; NCOA, 2005; Tittlbach, et al., 2012):

- Professional competence:
 - Knowledge and understanding of aging processes,
 - knowledge and understanding of effects of physical activity, nutrition and mental well-being on mental and physical health conditions,
 - understanding of the models of behavior change,
 - basic understanding and skills on how to create a safe working condition and environment.
- Planning competence:
 - To be able to appraise the basic conditions in their organizations and to plan and organize an appropriate environment of a healthy living course.
- Mediating competence:
 - Competence to adapt the training and exercises to the personal preconditions (health condition, experiences with exercise) of the older people.
- Social competence:
 - Empathy and sympathy for the special conditions of elderly people (e.g., loss of spouse, decline of physical, psychological and cognitive capacities) and have to consider these conditions in the course planning.
 - To care about older adults with attention to all participants and by acknowledging all efforts and improvements by compliments or non-verbal clues (smile etc.).
 - Communication skills which are appropriate for seniors (e.g., age appropriate language, clear voice, consideration of loss of hearing, meaningful and constructive feedback, and communication with different personality types).

Recommendations for the training for instructors:

During the training of the instructors, the instructors should (a) get sensitized to the concept of Active I with the three aspects physical activity, nutrition and mental well-being and get motivated to use it and (b) should learn the competences mentioned

above. These goals could be best reached by the examination of the methodical and didactical principles of the course with personal practical experiences (Kleinert & Neuber, 1996). There should be a combination of theoretical information and practical working phases with an active participation and integration of the experiences of the participants. Participants will experience by means of practical examples of health promotion through physical activity, healthy nutrition and mental well-being how a healthy active lifestyle can be communicated and experienced with different methods.

2.4 Cultural knowledge

2.4.1 Statistical data

To have an idea what kind of disabilities and diseases our trainers will likely have to handle with, we begged you to find some statistical data about your country.

Table 6: Statistical data of diseases and disabilities

	Seniors (Quantity or Percentage of the population) or main age	Top 5 Diseases (kind of disease and percentage of the population or quantity) (for seniors)	Mental diseases (kind of mental diseases and percentage of the population) (for seniors)	Disabilities s (kind of disabilities and percentage of the population) (for seniors)
Ireland				
Age Range:	50-85			
Total	1.273.087 (612.041 man/661.046 woman)	1. cardiovascular 2. cancer		
Italy *				
Age Range:	over 65	per 1000 people		
Total	10.370.488	1. arthrosis, arthritis 524.8 2. hypertension 365.0 3. osteoporosis 174.8 4. varicose veins, varicocoele 162.3	Senile Dementia (25%) Alzheimer e Parkinson (10.9) Depression (21.3)	Not-self sufficient persons (82.7%) Mentally disturbed persons guarantee with medical certification (2.6) Multiple Disability (6.0%) Sensorial disability

		5. cataract 153.6		(0.3%) Psychic disability (6.2%) Physical disability (2.1%)
Man	4.224.175	1. arthrosis, arthritis 417.1 2. hypertension 322.6 3. chronic bronchitis, emphysema, and renal insufficiency 182.9 4. cataract 126.5 5. low back pain 122.3	Senile Dementia 5.3%	Not-self sufficient persons (65.7%) Mentally disturbed persons guaranteed with medical certification (5.3%) Multiple Disability (11.2%) sensorial disability (0.5%) psychic disability (12.9%) Physical Disability (4.1%)
Woman	6.146.313	1. arthrosis, arthritis 600.4 2. hypertension 394.7 3. osteoporosis 267.1 4. varicose veins 214.9 5. cataract 172.6	Senile Dementia 4.91%	Not-self sufficient persons (89.3%) Mentally disturbed persons guaranteed with medical certification (1.5%) Multiple disability (3.9%) sensorial disability (0.2%) psychic disability (3.5%) Physical disability (1.3%)
Poland**	statistics 2013			statistics 2011
Age Range:	a) F:45-59; M: 45-64 b) F: 60+; M: 65+			
Total	38.533.299 a) 9.208.575 (23.9%) b) 6.860.973 (17%)		anxiety depression fatigue sadness nervous	3.852.800 (9.99%) a) 2.198.695 b) 1.654.105 Statistic in Poland divides significant, moderate, light and undetermined suffer the limitation of efficiency
Man	a) 5.119.176 b) 2.095.154	1. Backache (18.5%) 2. High blood pressure (18%) 3. Pain in the neck (8.2%) 4. Coronary Artery Disease 7.9%) 5. osteoarthritis (7.5%)		
Woman	a) 4.089.399 b) 4.765.819	1. Backache (24.4%) 2. High blood pressure (23.1%) 3. Osteoarthritis (14.8%) 4. Pain in the neck (14.5%) 5. Coronary		

		artery disease (11.2%)		
Spain***			quantity *1000	quantity *1000
Age Range:	a) 65-79 b) 80+		Disabilities age a	Disabilities age b
Total	a) 1.201,30 b) 1.025,80		Vision 337,2 Hearing 357,2 Communication 172,6 Mobility 814 Selfcare 582 Domestic Life 646,1 Interpersonal interactions and relationships 117,4	Vision 336 Hearing 404,4 Communication 270 Mobility 801 Selfcare 713,5 Domestic Life 744,1 Interpersonal interactions and relationships 200
Man	a) 454,8 b) 301,9		Vision 124,3 Hearing 164,3 Communication 79,3 Mobility 269,1 Selfcare 204,7 Domestic Life 180,4 Interpersonal interactions and relationships 52,6	Vision 99,5 Hearing 131,7 Communication 75,6 Mobility 201,5 Selfcare 188,1 Domestic Life 171,9 Interpersonal interactions and relationships 50,7
Woman	a) 746,5 b) 723,9		Vision 212,9 Hearing 192,9 Communication 93,2 Mobility 545 Selfcare 377,3 Domestic Life 465,7 Interpersonal interactions and relationships 64,8	Vision 236,4 Hearing 272,7 Communication 194,4 Mobility 599,5 Selfcare 525,4 Domestic Life 572,2 Interpersonal interactions and relationships 149,3

* Definition of disabilities: Disability is the personal condition of whom, after one or more disablements, has a reduced capability of interaction with social ambient compared to what is considered the norm. Therefore he is less independent to conduct normally routine activities and he is disadvantaged in social life. (<http://www.ars.toscana.it/>; <http://www.epicentro.iss.it/>; http://www3.istat.it/dati/catalogo/20100513_00/arg_09_37_la_disabilita_in_Italia.pdf)

** (GUS, 2012: statistics population; GUS, 2009: statistics diseases; GUS: statistics disabilities) ²⁴

*** (<http://www.ine.es>)

²⁴ there is a very detailed table of quantities of disabled seniors provided by Maraton Warszawski. This table can be found in Annex 6

This table shows us that even when we address those seniors who are still healthy, it will be likely that we have participants with cardiovascular diseases, high blood pressure, osteoporosis, arthrosis or arthritis, backache or loss in vision, hearing, mobility etc.

The following passage contains some more statistical data about the partners' countries:

Italy has a major health life expectancy in Europe, that is 71.2 years and, more in general, now it is, at birth, 78.6 years for men and 84.1 years for women. Social assistance (and medical attentions) are beside increased by the fact that the 32% of the olds live alone because families become more and more fewer in number, made by 2 persons. The life extension reaches high levels in our city. In the year 1999 the olds was 24% of all residents, increased to 26% on 2007, made by 94780 olds over-64, among them 30.805 aged over 79 years. The I.R.P.E.T. forecasts within the year 2023 that one fourth of reside people in Tuscany will be over 64 years old, this goal has been already reached in Florence seventeen years ago! (sds.firenze.it/anziani in salute”).

In 2015, seniors (over 60 year old) will constitute 12% (6 million people) of **Polish** society.

In **Spain** it is envisaged that the group of over 65 years will be, in 2021, over 20% of the population. Among the statistics that help to understand the limitations of the biggest note: only 4.5% of the elderly living in nursing homes, a third of the elderly living alone, loneliness being a risk factor for many health problems, including malnutrition.

- Between 25 and 30% of people over 65 living at home have some sort of dependency and food is a basic activity that requires minimal capacity.
- The perception of the health of this group is subjectively positive (40 to 60%), especially among men, but negative when measured objectively by appropriate parameters.
- One-third of those over 65 years fall once a year malnutrition being a risk factor for falls (Fundacion Edad y Vida 2013).

2.4.2 Cultural Background

2.4.2.1 **Ireland**

ProActivate could not locate an expert in this field however they can make some anecdotal comments that provide some insight into the cultural influence on seniors in respect of activity and healthy living.

Physical activity:

The relatively late transition of Ireland from a rural to an urban society has had an effect on the school system and on people's attitude toward physical activity. The older generation grew up in a time when hard, physical work was part of everyday life therefore the public school authorities did not deem it important for schools to provide physical exercise programmes. This is still reflected in Irish schools where physical activity is not an important part of early education. Perhaps for this reason many adults do not have a good grounding in the importance of exercise throughout life.

While younger adults of both genders engage in sports as much as in any country this picture changes radically with age. The general impression would be that older men play golf as their main and perhaps only form of physical exercise. Older women tend to walk mostly at a leisurely pace and in pairs or small groups. However one does not see vast armies of seniors out in all weathers engaged in energetic walking, cycling, or swimming. The climate is partly to blame because it is cold and wet in the winter, but not cold enough for winter sports; the summers are pleasant but physical activity does not appear to be a priority for many older people. It may be true to say that we do not expect to see our seniors out doing sports and the seniors comply by filling the role we have assigned to them.

Nutrition:

The classic Irish diet is typical of northern Europe comprising much red meat, potatoes, and bread. The preference for bread is for the highly processed white breads although the traditional Irish soda bread does have relatively high fibre content.

There has been quite a bit of information made available in recent times about the importance of fibre in a healthy diet and about the need for a healthy intake of fresh fruits and vegetables. However all of this information is for the general population and none targeted at senior citizens, with the possible exception of the importance of fibre.

The importance of meat in a healthy diet is debatable. It's not really a hot topic in Ireland and one must bear in mind that Ireland has a very large agricultural sector with a high concentration and dependence on beef. Quite a bit of pro-meat information emanates from this industry. Vegetarianism has become more popular but couldn't be described as a movement. However virtually all restaurants in Ireland now offer a vegetarian option.

Generally there does not seem to be any particular focus on encouraging seniors to maintain a healthy diet.

Mental Well Being:

The topic of mindfulness has become extremely trendy in Ireland, but again it is not focused on seniors. One could even venture to say it might not even be considered relevant for seniors. One must bear in mind that Ireland has until recent times been a very traditional Roman Catholic country. Although the younger generations have drifted away from the church the older generations tend to be more traditional in their beliefs and their practices. Many or perhaps most would likely derive their sense of well-being from their religion. This must be born in mind when designing a programme of well-being that is more secular or non-denominational in its approach. In other words one must be clear about where the cross-overs are between the spiritual and the mental domains.

2.4.2.2 Italy

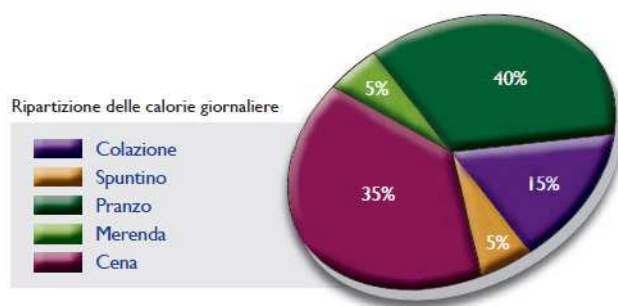


Figure 7. Graphical representation of meals in Italy (Top Down: Breakfast, morning tea, lunch, afternoon tea, dinner) (Granarolo)

Seniors routine has changed a lot in the last ten years. In the Empolese-Valdelsa area, from 1980 to nowadays, a cultural change has happened in Seniors sports activities. This occurred thanks to a project by ASL 11 (Local Health Agency) called AFA (Physical Activities for Seniors). In fact, in the last year the participation in these courses have been enhanced. These presences produced a remarkable improvement in over 65 health condition. Another reason of the change is the new reform of medical certification which cancelled the necessity to have a medical certification for not-competitive sports. As time goes by, the participation in AFA courses is growing up and nowadays the female participants are more than male ones, because men practice other kinds of activities like, gardening or cycling but not under medical controls.

These type of projects resulted in an improvement of over 65's life on a social and relational level, creating shared spaces that reduce the physical decay also given by the perception of loneliness.

The majority of seniors in our country are female, widows in most cases and the attendance to associations' activities which target these category created social moments that improve well-being.

2.4.2.3 **Poland**

Dietary habits of seniors depend on health disorder, earlier developed habits and preferences, family and economic situation, cultural and religious restrictions. Undernourishment, which risk among seniors (especially in the countryside) is high, results in various health problems including problems with mood and behavior. Reasons for undernourishment among seniors are e.g., *poor diet* – as a result of unawareness what is healthy and what is not, *absorption disorders* – nutrients are not properly digested or absorbed by the intestines, *lost appetite* – as a possible result of aging and illnesses or *low income* – insufficient to afford healthy food and beverages.

In order to lower the risk of undernourishment one should follow several rules. First of all, seniors should eat small portions of food four-five times a day. What is also important, the meal should be varied, prepared with natural products: lean meat, fish, dairy products, cooked vegetables and foods rich in B vitamins (dark bread, cereal) and look tastefully. Seniors should not eat heavy meals which make stomach

feel full and uncomfortable. Therefore, it is recommended to boil, braise or roast the meal instead of frying it. Products difficult to digest (beans, cabbage – seniors use to eat a lot of that products cause they are cheap) and fried that long remain in the stomach are not recommended. Another healthy habit is replacing salt with herbs. Due to lower tolerance for glucose among seniors, they should avoid sugar, sweets and candies. The elderly are often constipated, so the diet should be rich in fiber: vegetable juices, dried fruits. Fluid intake is one of the elements which need to pay special attention. In Poland seniors eat a lot potatoes, cabbage, and dairy products.

2.4.2.4 **Spain**

Increasing life expectancy and the number of older people reflects the triumph of social protection systems and nutritional and health advances that characterize our welfare state.

For two years the number of people over 65 in Spain exceeds that of those under 15. This trend will increase in the future and needs to be addressed through a collective effort to ensure social cohesion and equal treatment and solidarity between generations. Some numbers:

- 53% of older people start new activities after 65 years. In 1993 only 9.5% of people over 65 had started a business after retirement.
- 43% of our seniors want to actively and comprehensively participate in the Spanish society.
- 28% belong to some organization and 8%, particularly to voluntary organizations.
- Older people expressed a very clear desire for autonomy, as illustrated by the fact that 87% want to live at home as long as possible, but at the same time want to maintain strong family relationships, of which already enjoys 89%. The result of this and showing great solidarity between 70% contribute to the care of her granddaughters and grandsons.
- Exercise and training are emerging educational activities among older people: 86% of seniors have not passed primary school, but in 2007, 8% of seniors reported having participated in educational activities.
- 45.5% of older people are enjoying good health. This percentage has increased 8 points and a half, in 1993 and recognized only feel 37% of people over 65 years.

In parallel, the percentage of people claiming ill health has been significantly

reduced over the same period from 24% to 14.5 %. These figures show that public health policies and social welfare have had a direct effect on improving the quality of life.

Proposals for the future:

- Assume that individual development extends throughout the life cycle of individuals, leading to a social impact.
- Establish an economic policy that addresses the entire life cycle and facilitate human relationships, set aside time for personal care, solidarity and social relationships which will improve the economy and security of the elderly.
- To develop, promote and disseminate the concept of older people set to the rights they have as part of citizenship, without discrimination or unequal treatment.
- Facilitate their active participation in all areas and at all levels of society, and promote intergenerational solidarity.
- Taking initiatives to promote the active life of the elderly, making sure to promote both physical and mental to achieve an improvement in their quality of life.

(Instituto de Mayores y Servicios Sociales [IMSERSO], 2012)

2.4.2.5 Conclusion

It seems to be that the educational system in Ireland contributes to the grounding is lacking of the importance of exercise throughout life. **Irish** people eat a lot of meat which is due to the large agricultural sector but one can find a vegetarian option in every restaurant in Ireland. It seems to be that there is no particular focus on encouraging seniors to maintain a healthy diet or do physical activities. Even if there are information, they are not tailored for seniors. This is also true for well-being or mindfulness, a trend which is arising in Ireland at the moment. An important point that is mentioned by ProActivate is that Ireland has until recent times been a very traditional Roman Catholic country and seniors could seek to derive well-being from their religion. This must be born in mind when designing a programme of well-being that is more secular or non-denominational in its approach.

In **Italy** the importance of physical activity became clear and there already are some approaches (project Physical Activities for Seniors) which produced a remarkable

improvement in over 65 health condition. A good step has been the new reform of medical certification which cancelled the necessity to have a medical certification for not-competitive sports. The participation in this program let us hope that seniors will be open for our course.

In **Poland**, undernourishment seems to be a big problem and there already exist some strategies to fight against this undernourishment. This problem could be tackled by our course.

Older people in **Spain** start new activities, take part in Spanish society, belong to (voluntary) organization and take part in educational activities which shows us, that they are open to a course like ours. The data show that public health policies and social welfare already are active which is a good sign towards a health promotion for older adults. If we lean on the future perspectives provided by ADESPER, we should be able to facilitate active participation in all areas and we will promote both physical and mental to achieve an improvement in their quality of life.

2.4.3 Availability and use of resources²⁵

Availability of Internet

Ireland has a variety of Internet providers and all broadband providers offer a range of packages and services to the Irish market. Some of the top suppliers in Ireland include UPC, Vodafone, Eircom, Smart telecom amongst others and the market has become very competitive in recent years with new competitors such as Sky. **100% of the country is covered. Seniors aged 50 – 65 yrs have greater use of internet than the over 65's** (Age Action/ Age and Opportunity)

Italy: A general approach to the internet media has been noticed in the last few years; requests of seniors gave birth to courses with the purpose of reducing digital divide. These courses took place in senior supporting facilities (Auser 2013) where they also had assisted Internet access. Nevertheless, seniors most used communications media remain local daily newspapers (“La Nazione”, “Il Tirreno”),

²⁵ You will find a table of medias used in Ireland, Italy, Poland and Spain in Annex 7

television, informations from Union media (SPI, ULP) and monthly magazines provided by associations and cooperative companies.

In **Poland**, according to Central Statistical Office, only **12% of senior males and 8% of senior females are computer literate and familiar with the Internet.**

Spain recommends the following regarding the use of computers for seniors: Modern society should emphasize the importance retirees attributed to education and training throughout life, particularly in regard to the use of computers. It is very important to note that the implementation of new technologies in our society has important advantages for the sector of the elderly. However, there are people in this social stratum which feel more distant from them (Pavón, 2000). Clearly, this distance creates an inequality in the use and enjoyment of new technologies that can find its explanation in the development of the following ideas:

- **The utility is a value in itself:** Many older know which is the use of some devices and instruments that can improve your quality of life. It should be a greater effort on the part of families and institutions to provide access to new technologies to our elders environment.
- **The complexity in using:** The largest percentage of our elders perceived complex access and use of new technologies and therefore discouraged from learning to handle them.
- **The feeling of lag:** According to the latest statistics, in our country the majority of seniors are introduced independently in the world of computers and new technologies often have a young geriatric age of 50-55 years. This brings out that in old age the sense of offset from these new instruments is large.
- **Reduced financial capacity:** the ability to access the latest technology by the elderly segment is more difficult due to the high costs still accounts. Older people, mostly pensioners cannot afford to buy the latest technology.
- **The exclusion of the elderly person in the consumer society:** technological products are currently the most publicized in the mass media (internet, computers, next generation mobile, ..., etc.). However, such advertising is rarely starring elderly. Companies tend to attract children, youth and adults, excluding

the elderly as potential buyers, which creates a feeling of indifference and indifference towards these products from our elders.

- **Technology is evolving faster than their own culture:** Cultural change and adaptation of people to technological innovation, so progress slowed with respect to technological development, advancing ever faster. This lag also affects the assimilation legislation regarding the use of new technologies, leading to situations of helplessness consumers from certain commercial abuses, even more so among older.

Objective for the future of public institutions as well as the family and social environment of the elderly should be bringing new technologies to the elderly, so they can maintain their independence from such resources, so pop is impose in our daily life (ATMs, mobile and internet, among many others). The results show the beneficial effects of these tools, as well as programs that attempt to bring them closer to our elders. The optimization of such resources is directly related with the autonomy of the person.

ADESPER also provided some Blog oriented for well-aged examples (Villa, 2004) which could be used as examples (figure 8) for the design of a senior friendly homepage.

*Literary Blog (left side): <http://weblog.maimonides.edu> *Psychology Blog (right side): <http://terceraedadvejez.wordpress.com/>



* New Challenges for society blog: <http://jubilacionterceraedad.blogspot.com.es/>



Figure 8: Examples for websites for seniors

2.4.4 Legal and regulatory framework and safety recommendations

2.4.4.1 Ireland

What	Examinations necessary		If yes, which ones, please describe (e.g., medical certificate, or questionnaire for food allergies)	Content of the medical certificate	
Physical activity course	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Physical activity event	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Nutrition course	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
	Necessary for each participant			Provided by organization	
Accident insurance	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

Fit for Life: Which is a private company; Give a questionnaire for physical activity answering yes to any of the questions requires them to visit a medical physician to pass them for physical activity.

2.4.4.2 **Italy**

What	Examinations necessary		If yes, which ones, please describe (e.g., medical certificate, or questionnaire for food allergies)	Content of the medical certificate	
Physical activity course	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	GP examination		
Physical activity event	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Medical certificate		
Nutrition course	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	GP or nutritionist examination		
	Necessary for each participant			Provided by organization	
Accident insurance	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

- For *non competitive* physical activities, a specific medical prescription is not needed even if having being checked by the doctor prior to beginning of the activity is recommended.
- For *competitive* physical activities a medical certification is required. This certificate must state that the person is healthy and his/her body is strong enough to do such activities and it is given by a sport and exercise doctor after a test took by the patient during exercise.
- In terms of insurances, if the physical activity is attended at a sport association is the association who is in charge of having the people sign to become members. Members are covered by the insurance.

(<http://www.uisp.it/puglia/files/principale/riviste/corriere/N40-5ottobre2010.pdf>)

2.4.4.3 **Poland**

What	Examinations necessary		If yes, which ones, please describe (e.g., medical certificate, or questionnaire for food allergies)	Content of the medical certificate	
Physical activity course	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Physical activity event	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Nutrition course	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
	Necessary for each participant			Provided by organization	
Accident insurance	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

2.4.4.4 Spain

What	Examinations necessary		If yes, which ones, please describe (e.g., medical certificate, or questionnaire for food allergies)	Content of the medical certificate	
Physical activity course	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	To perform physical activities and sports, such as swimming, aerobics, fitness, gymnastics for seniors, yoga, tai chi, you need a prior medical examination that enables the user to develop the activity. The evaluative test known functional capacity must be accompanied by an overall score of other diseases of the musculoskeletal and neurological system mainly.	Please, see the description in Annex 8	
Physical activity event	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Large free events related to physical activity do not require any medical certificate. Other competitions such as participation in a marathon requires being accredited suitable to perform the activity by a medical certificate is usually obtained in the GP of national social security.		
Nutrition course	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
	Necessary for each participant			Provided by organization	
Accident insurance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

2.5 National conclusions and recommendations

2.5.1 Ireland

In my research on Active Healthy Living for Seniors (AHLs) it has been difficult to find some of the information and some of the information does not fit the purpose of the Task, such as 2E. So I will outline some of the information that I have found to show whether there is a need for a program such as AHLs and if I have come across companies that are suitable for taking on this project.

Physical Activity:

The guidelines for seniors in Ireland for physical activity from the HSE (The Health Services Executive) (www.hse.ie) are basic and generalized and are the only guidelines available on their website. There is little effort in the way of a program available. It is up to the people to find this information and use it themselves. So Organizations such as Age Action, Age & Opportunity, Active Ireland could use this information to pass on to their members. But there is no impetus for them to carry out the plan and help guide interested seniors to the use this information.

I did find some companies such as www.FITFORLIFE.ie who are a primarily focused on helping communities, nursing homes and day care services engage in physical activity. They offer on-site progressive exercise sessions and therapies using physical rehabilitation techniques. They are currently providing this service to over 90 residential nursing homes and day care centres around the country. The Fit for Life team are qualified professionals consisting of exercise physiologists, physical therapists, and physiotherapists, many of whom have advanced research experience. Fit for Life is a private company with contracts that are paid by the nursing homes and day care centres.

Nutrition:

The recommendations nationally are from the HSE (www.HSE.ie) which are taken from the USA Program for Health. There are many independent programs for nutrition but none aimed specifically at seniors. Information is provided for organizations to use. The organizations such as Active Ireland, Cardi, Age Action, Age & Opportunity post information for their members but they do not devise any program for them to follow. Some information is published in their quarterly publications.

Mental Well-being:

There are Organizations such as Mental Health Ireland, Alzheimers Ireland, and the Department of Public Health that offer services for people with diagnosed mental health issues. Organizations such as Age Action within their groups use a program called U3A which helps to get groups together and helps with communication of outings, social events etc. These groups do not actively cover mental well-being except for social gatherings. There is no preventive help before issues arise unless

one joins a meditation class or a workshop for empowerment out of ones own initiative.

Cultural:

There is no direct information on cultural issues surrounding seniors, however see section 3B for some anecdotal observations. Additional issues for seniors would be transport and access to groups particularly those living in rural areas.

Best Practices:

In Ireland there is a lack of programs nationally for seniors in the areas of nutrition and mental well-being. The closest is a program on television called Operation Transformation which is in the reality TV genre. This covers all the areas of physical activity, nutrition and mental well-being for the contestants. However there is no complete plan for these areas on the website. It covers Physical Activity and Nutrition and one can select a program devised for the contestants to follow what best suits the individual.

The HSE has set up a Health and Well-being department to help promote a healthy living agenda by linking up with other organizations – The contact person is Janet Gaynor. This person should be contacted once the program is up and running to see if there is an avenue with the HSE to help with promotion to seniors.

Conclusion:

In my research findings it has been a challenge to gather information for this project and as such there are many gaps in the charts. A lot of data has been found that shows that there is a need for a program which combines all the factors to help seniors achieve a healthy active life and enjoy peace of mind. The organizations that I have been in contact with such as Age Action, Age Opportunity & Mental Health Ireland show willingness to engage with a new program. They have the organizational structure along with a large membership of the seniors community to be able to utilize the program.

2.5.2 Italy

From the analysis conducted in this research we understood that the first concern of elderly in Italy is the economic issue, a statistic redacted by the National AUSER (Italian association that works for active ageing and services for seniors) clearly says that the majority of the population over 65 invests his savings in the home and in

costs related to it, which overshadows the care for physical activity and attention to healthy eating. Despite this, over the past 10 years there has been a change in the habits of this segment of the population, due to the many possibilities at low cost, from projects to low impact fitness. Despite this cultural change they noticed that the main target group of these projects are women, while men engage in physical activities outside of medical or other types of recreational activities. For what concerns the care of mental well-being in Italy, there are many projects that tend to affect the primary concern for this age group: loneliness. There are several studies and research that analyse the need for facilities and places of sociability which give the possibility to structure social relations. From the research it is clear that there are subdivisions in bundles which define what we mean by "the third age": from 65 to 75/80 years of age, when people are not only active in physically and mentally, but where they take charge of other seniors and are part of associations and voluntary organizations; those over 75 tend to hold reservations about the proposals that go beyond the cultural roots tied to the popular saying "children play, youngsters study, adults work and elderly rest", must open a parenthesis that regards the end of the elderly suffering from conditions related to dementia (eg. Alzheimer), in this case it comes to people stationed in nursing homes or day care centres, for them there are many experimental projects that affect the psychological well-being.

What you need to do is strengthen messages for an improving action to which the practice of proper nutrition and regular physical activity can lead over time, another message to get across is that physical activity, understood as a group and non-competitive practice is a good way to create social relations that reduce the feeling of loneliness and abandonment. It's important to structure places for social activities and exchange, appropriate to this age group, where we take into account physical characteristics, not only the limitations but also the potential of the elderly. In Italy it is essential to work for the elimination of stereotypes associated with this segment of the population, in order to change the image of the elderly from that of being a burden to society and to exploit the potential of knowledge and experience of these people.

2.5.3 Poland

- Only about 10 % (or less) seniors in Poland use the Internet, but this 10% should be our target (this people are active, open-minded and looking for new challenges).
- In the Internet there is very hard to find any tips about training programs in polish. Of course you can find programs that you can adjust but no dedicated for seniors. Anyway the conclusion is there is a gap in the polish market.
- Promotion in the media other than the Internet in my opinion is useless.
- It has been very hard to find the data for Maraton Warszawski and the health care system in Poland seems to very different from other health systems. In polish language there does not really a word like well-being what shows that there is a lag in polish system regarding health promotion, especially for seniors.

2.5.4 Spain

After the celebration of the International Year Senior I have seen that in Spain there have been many works and projects aimed at improving the quality of life of the elderly, as well as their family and social circle.

One of the big remaining tasks is the accessibility of the elderly to new technologies. This is due both to lack of older people in a topic they see as complex and therefore do not believe themselves to be able to use them (even fear of damaging them) and the other is the high prices of the latest technologies making them inaccessible.

One of the major improvements that has changed is the perception that the rest of society has of our elders. If not productive, without a decision and low economic level, they are becoming intergenerational integrating elements and therefore active elements of society.

With increasing life expectancy, we must realize that 25% end of our life we are considered "old" and therefore, more and more legislation that protects the rights of older and more activities to them in order to improve their quality of life.

3 Conclusion and recommendations

The research reports and the conclusions of the partners show that it is really difficult to find some adequate health information with tailored messages to the need of seniors in the today's most important medium, the Internet. There are organizations, foundations or centers for seniors in each country, but an appropriate offer of healthy living courses and programs is rare which shows the big need of new concepts to a healthy active lifestyle promotion for seniors to improve physical and mental health conditions for home-dwelling people. Quality of life and participation of people with mental or physical disabilities are addressed in some programs. Our program will therefore strongly contribute to the development of health sectors in participating countries by providing different services for seniors addressing behavior change in physical activity, nutrition and mental well-being. Especially mental well-being is an aspect, whose importance is not yet conscious in all parts of Europe and also recommendations to this part seems to be harder to find than information on physical activity and nutrition.

The international recommendations for physical activity are used in every country, that's why we can use these information to our purposes. The recommendations for nutrition are more or less the same with some small anomalies regarding exact amounts of intake of (e.g.,) proteins. The main messages e.g., use a diversity of foods, eat lots of vegetables and fruits, reduce salt consumption, drink a lot of water are the same which is a good sign. Only in Spain exists a trend towards individualized nutrition advices. In our context, this would be too much. We only can consider preferences and can give tips, but it won't be our concern to consider the whole nutrition and medical history to give recommendations that fit to each state of health. The recommendations on mental well-being provide a broad span of tips affecting different parts of life ranging from knowledge of health (care system and own medical information), active lifestyle, public transport and mobility by car, contact to family, participation and exercises for the mind.

If we are able to consider the advices given by Wingate college regarding designing a successful course and avoiding factors for attrition and non-adherence, we will design a motivating course of high quality that (as mentioned before) strongly will contribute to the health promotion of seniors in participating countries.

Unfortunately the best practice examples didn't give us practical advice on what we really should have in mind to design a good course but they name some factors that are really important for seniors, namely, social support, combination of body and mind and participation.

The tasks on statistical and cultural background faced the biggest problems as it seems to me. It's really hard to find hard statistical data or experts of culture that can help in designing courses. Every person has an understanding of his or her culture but it seems to be hard to find reliable information on it. Especially for cultural information about eating habits would have been interesting but we nevertheless can add some personal knowledge to the course.

Internet and seniors are two words that do not really fit together in the first sight. But at least it should be possible to get an Internet access to all interested seniors in the Partners countries. The use of the online planer will be an important step to the independence of new resources for seniors.

The collection of the regulatory frameworks has been very important as a preparation for next year's course implementation. Only Spain definitively needs a medical examination prior to the course whereas other countries either don't need a certificate or examination in no condition (Poland, Ireland) or only need it for competitive sports.

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Annex 1: Aging and Food (provided by ADESPER)

(Fundación Edad y Vida, 2013; Public Health and Food Department, 2011)

Aging is a complex phenomenon that involves cellular, molecular, physiological, and psychological changes. The health and physiological problems decline develop progressively. However, the direct effects of the aging process not appear to be as clear, but there is a strongest evidence that shows cases of very elderly people who remain healthy if their nutritional status is adequate. Today we know that a large number of older persons who become fragile, have visual function decreased, increased cognitive alterations and balance disorders or affecting walking capacity movement, ... etc., may be limit the possibilities of acquiring and preparing food. In addition, an appetite decrease occurs, mainly due to less physical activity, problems oral or mood disorders, with the potential danger of reduce the intake of essential nutrients. (Public Health and Food Department, 2011).

From a global perspective, and without going into details the changes with a greater degree of influence on the nutritional status of the old will be, as stated above, the related directly to the digestive system. But even very schematically, I would like to highlight some other equally linked to issues related to food and nutrition:

- a) **Muscular loss** (sarcopenia) are expression usually limitations on the kind and quantity of food to be ingested into the process of aging. They also reflect the degree of physical inactivity. But in turn, the presence of sarcopenia will condition the possibilities of having the old feed themselves, to the extent that will have a direct impact on self-reliance (displacement activity dining, etc..).
- b) **Bone loss**. The appearance in old age of osteopenia and osteoporosis, as well as its intensity will be dictated largely by the type of diet maintained throughout life. Low levels of calcium and vitamin D are standard, as stated in the elderly and are forced in recent years to change up the recommended daily doses of these micronutrients.
- c) **Losses in the organs**. They are a constant in the older person. We are aware of usually affecting sight and hearing, but we are not aware of that compromise to taste and smell. Among the negative consequences should be noted a growing disinterest in food and eating, as well as greater difficulty in accessing food.
- d) **Loss in the immune system**. Also conditioned in part by the type of diet maintained throughout life. Offers some possibilities for preventive intervention and possibly correction in some cases, through specific dietary recommendations.

Aging is a universal biological trajectory, an organic process and that determines decisive changes in both the constitution and the body functionalism and the behavior and the way of being in the world.

Annex 2: Psychological well-being (provided by ADESPER)

(Vivaldi & Barra, 2012, references will be found in original literature)

The experiences that the individual acquires throughout his/her life can make the elderly person feel fulfilled or the other hand, hopeless and marginalized from the rest. While the pejorative stereotypes of old age still exist, they have been declining in recent years to favor a more positive conception of successful aging (Aguerre & Bouffard, 2008; Boone & Wink, 2006). Successful aging means that the individual is able to integrate and function effectively both in their family and in society, overcoming cultural barriers that prevent their full potential and maintain an adequate level of personal well-being.

The eudaimonic perspective (studying psychological well considered to indicate a positive performance in the individual, which enables the development of their skills and therefore their personal growth), has been systematized by Ryff in its multidimensional model of psychological well-being consists of six dimensions (Ryff & Singer, 2008), including the positive evaluation of oneself and the past life (self-Acceptance), a sense of continued growth and development as a person (personal growth), the belief that life has a purpose and meaning (purpose in life), the development and maintenance of quality relationships and trust with others (positive relations with others), the ability to effectively lead their own lives and the environment to satisfy needs and wants (environmental domain); and a sense of personal self-determination (autonomy). Welfare is influenced by sociodemographic characteristics such as age, gender and marital status, but certainly an important predictor of well-being is the assessment made by the individual opinion of its resources, including social support is perceived (Hicks, Epperly & Barnes, 2001).

Annex 3: Influence factors on mental health (provided by ADESPER)

(Vivaldi & Barra, 2012, references will be found in original literature)

Among the supports you receive the elderly, the family is one of the resources that provide greater benefit to the person, to provide care and protection to the physical and mental processes that traverse, especially when the person does not have the support of formal networks (Dominguez & Bayorre Espín, 2001). Thus, it has been found that older adults who live with their families have higher levels of mental, physical and emotional health than those living alone (Bozo, Toksabay & Kurum, 2009). Within the family it has been observed that marriage is a fundamental support, especially for men, as these and present a smaller social network, depend on their wives in performing activities (Reyes, Camacho, Eschbach & Markides, 2006).

Social support is a protective element of health in older adults, to moderate the negative effects of stress and contribute to the well-being and life satisfaction (Aguerre & Bouffard, 2008; Fernandez Clúa Baez & Ramirez, 2000). In the elderly there is an increase in chronic diseases and disabilities that affect quality of life, increased demands for care and health services use and consumption of drugs (Hambleton, Clarke, Broome, Fraser, Brathwaite & Hennis, 2005). Under the biopsychosocial perspective of health, lifestyle and quality of life of the elderly will be determined by the social context in which it is immersed, i.e., by the interaction between the characteristics of the individual and its environment (Azpiazu, Jentoft, Villagrasa, Abanades Garcia & Alvear, 2002, Garcia & Gonzalez, 2000).

The perception of the well-aged about their health and quality of life are influenced by their mental health and functional capacity (Azpiazu et al., 2002, Love, Goldman & Rodriguez, 2008). Therefore, perceived health is a construct associated with other psychological variables such as self-esteem, life satisfaction and depression (Mella et al., 2004; Winocur, Palmer, Dawson, Binns, Bridges & Stuss, 2007) and has proven significant associations with more objective indicators such as the number of chronic diseases that older adults have, the period of time you have lived with a disease, exacerbation of chronic problems, etc., (Beaman, Reyes, Garcia - Peia & Cortés, 2004). As for possible gender differences in well-being of older adults the evidence is not consistent. Some studies have found that women report lower levels of well-being, higher levels of exhaustion and less physical activity than men (Alvarado, Zunzunegui, Bamvita & Béland, 2008; Barrantes, 2006).

However, there are also studies that have found higher levels of well-being in women, which could be explained by their greater emotional stability with increasing age, and social comparison made by the person in the evaluation of the objective circumstances facing (Hicks et al., 2001; Pinguart & Sorensen, 2001). Another possible explanation is that aging men become more dependent to the loss of labor socially defined role, while women maintain further its social role, to take care of his family (Stefani, 2004).

Finally, marital status would be another variable that can affect welfare in the context of aging. Pinguart and Sorensen (2001) suggest that older adults have married an important source of support and validation of their partner, so divorced people be more likely to get sick and have higher mortality rates than those married.

Annex 4: Explanation to key guidelines for safe physical activity (provided by Muenster University)

- Understand the risks and yet be confident that physical activity is safe for almost everyone.
- Choose to do types of physical activity that are appropriate for their current fitness level and health goals, because some activities are safer than others.
- Increase physical activity gradually over time whenever more activity is necessary to meet guidelines or health goals. Inactive people should “start low and go slow” by gradually increasing how often and how long activities are done.
- Protect themselves by using appropriate gear and sports equipment, looking for safe environments, following rules and policies, and making sensible choices about when, where, and how to be active.
- Adults with chronic conditions obtain important health benefits from regular physical activity. When adults with chronic conditions do activity according to their abilities, physical activity is safe.
- Be under the care of a health-care provider if they have chronic conditions, disabilities or symptoms. People with chronic conditions, disabilities and symptoms should consult their health-care provider about the types and amounts of activity appropriate for them.

(USDHHS, 2008b, p. viii)

Choose Appropriate Types and Amounts of Activity (USDHHS, 2008b, p. 36)

Injury Risk Level	Activity Type	Examples
Lower Risk ↓ Higher Risk	Commuting	Walking, bicycling
	Lifestyle	Home repair, gardening/ yard work
	Recreation/sports No contact	Walking for exercise, golf, dancing, swimming, running, tennis
	Recreation/sports Limited contact	Bicycling, aerobics, skiing, volleyball, baseball, softball
	Recreation/sports Collision/contact	Football, hockey, soccer, basketball

Figure 9²⁶. The continuum of injury risk²⁷ associated with different types of activity (USDHHS, 2008b, p. 36)

²⁶ Note: The same activity done for different purposes and with different frequency, intensity, and duration leads to different injury rates. Competitive activities tend to have higher injury rates than non-competitive activities, likely due to different degrees of intensity of participation.

²⁷ People who have had a past injury are at risk of injuring that body part again. The risk of injury can be reduced by performing appropriate amounts of activity and setting appropriate personal goals. Performing a variety of different physical activities may also reduce the risk of overuse injury.

Increase physical activity gradually over time (USDHHS, 2008b, p. 37)

- Use relative intensity (intensity of the activity relative to a person's fitness) to guide the level of effort for aerobic activity.
- Generally start with relatively moderate-intensity aerobic activity. Avoid relatively vigorous-intensity activity, such as shoveling snow or running. Adults with a low level of fitness may need to start with light activity, or a mix of light- to moderate-intensity activity.
- First, increase the number of minutes per session (duration), and the number of days per week (frequency) of moderate-intensity activity. Later, if desired, increase the intensity.
- Pay attention to the relative size of the increase in physical activity each week, as this is related to injury risk.
- Seniors should consider three factors in individualizing their rate of increase: age, level of fitness, and prior experience.
 - o Age: Older adults appear to require more time to adapt to a new level of activity, in the range of 2 to 4 weeks.
 - o Level of Fitness: Less fit adults are at higher risk of injury when doing a given amount of activity, compared to fitter adults. Slower rates of increase over time may reduce injury risk.
 - o Prior Experience: People can use their experience to learn to increase physical activity over time in ways that minimize the risk of overuse injury.

Take appropriate precautions (USDHHS, 2008b, pp. 37-39)

- Use protective gear and appropriate equipment
 - o Gear should fit appropriately and equipment should be used consistently and correctly
- Be active in safe environments; look for
 - o Physical separation from motor vehicles, such as sidewalks, walking paths, or bike lanes;
 - o Neighborhoods with traffic-calming measures that slow down traffic;
 - o Places to be active that are well-lighted, where other people are present, and that are well-maintained (no litter, broken windows);
 - o Shock-absorbing surfaces on playgrounds;
 - o Well-maintained playing fields and courts without holes or obstacles.
- Follow rules and policies that promote safety
 - o Rules, policies, legislation, and laws are potentially the most effective and wide-reaching way to reduce activity-related injuries. For example, policies that promote the use of bicycle helmets reduce the risk of head injury among cyclists.
- Make sensible choices about how, when, and where to be active
 - o Consider weather conditions, such as extremes of heat and cold. For example, during very hot and humid weather, people lessen the chances of dehydration and heat stress by:
 - Exercising in the cool of early morning as opposed to mid-day heat;
 - Switching to indoor activities
 - Changing the type of activity (swimming rather than playing soccer);
 - Lowering the intensity of activity (walking rather than running); and
 - Paying close attention to rest, shade, drinking enough fluids, and other ways to minimize effects of heat.

Additional considerations for some adults (USDHHS, 2008b, pp. 41-44)

Some seniors show conditions raise special issues about recommended types and amounts of physical activity:

- Physical activity for people with disabilities²⁸
 - o People/seniors with disabilities should essentially follow the guidelines for older adults
 - o Seniors who aren't able to follow the guidelines should adapt their physical activity program to match their abilities, in consultation with their health care provider
- Physical activity for people with chronic medical conditions (e.g., osteoarthritis, diabetes type 2 or cancer survivor)
 - o When adults with chronic conditions do activity according to their abilities, physical activity is safe.
 - o Adults with chronic conditions should be under the care of health-care providers. People with chronic conditions and symptoms should consult their health-care providers about the types and amounts of activity appropriate for them.

Physical Activity and diabetes mellitus

One very important point is to consider some aspects for people with diabetes mellitus who want to do physical activities. The Scripps Whittier Diabetes Institute (2006) created a handout that can be found in figure 10. The American Diabetes Association (2003, p. S75) furthermore recommend to perform swimming, bicycling, rowing, chair exercises, arm exercises and other non-weight-bearing exercise for diabetic patients with loss of protective sensation. Contraindicated exercise for these people are treadmill exercise, prolonged walking, jogging and step exercises.

For people with type 1 diabetes who do not have complications and are in good blood glucose control, all levels of physical activity, including leisure activities and recreational sports, can be performed. Hypoglycemia, which can occur during, immediately after, or many hours after physical activity, can be avoided. This requires that the patient has both an adequate knowledge of the metabolic and hormonal responses to physical activity and well-tuned self-management skills. General guidelines that may prove helpful in regulating the glycemic response to physical activity can be summarized as follows (American Diabetes Association, p. S76):

1. Metabolic control before physical activity
 - o Avoid physical activity if fasting glucose levels are >250 mg/dl and ketosis is present, and use caution if glucose levels are >300 mg/dl and no ketosis is present.
 - o Ingest added carbohydrate if glucose levels are <100 mg/dl.
2. Blood glucose monitoring before and after physical activity

²⁸ The benefits of physical activity for people with disabilities have been studied in diverse groups. These groups include stroke victims, people with spinal cord injury, multiple sclerosis, Parkinson's disease, muscular dystrophy, cerebral palsy, traumatic brain injury, limb amputations, mental illness, intellectual disability, and dementia.

- Identify when changes in insulin or food intake are necessary.
- Learn the glycemic response to different physical activity conditions.

3. Food intake

- Consume added carbohydrate as needed to avoid hypoglycemia.
- Carbohydrate-based foods should be readily available during and after physical activity.

People with Type 2 diabetes mellitus may engage in physical activity, using caution when exercising with blood glucose levels exceeding 300 mg/dL (16.7 mmol/L) without ketosis, provided they are feeling well and are adequately hydrated. Those who are using insulin or insulin secretagogues are unlikely to experience hypoglycemia related to physical activity. Users of insulin and insulin secretagogues are advised to supplement with carbohydrate as needed to prevent hypoglycemia during and after exercise. Medication dosage adjustments to prevent exercise-associated hypoglycemia may be required by people using insulin or certain insulin secretagogues. Most other medications prescribed for concomitant health problems do not affect exercise with the exception of β -blockers, some diuretics and statins (ACSM and American Diabetic Association, 2010, pp. 2292-2293).

THE DOs AND DON'Ts OF PHYSICAL ACTIVITY

It is recommended that you have your health provider's support and a thorough physical examination before beginning a physical activity program. Your diabetes should be under control before starting a physical activity program.

PHYSICAL ACTIVITY DOs



- Check blood sugar before and after physical activity
- Begin physical activity at a moderate level and progress slowly
- Know the signs and symptoms of hypoglycemia
- Wear diabetes identification
- Always carry a sugar source
- Engage in physical activity 10 to 15 minutes after a snack or 20 to 60 minutes after a meal
- Engage in physical activity 4 to 6 times a week
- Always warm-up and cool-down
- Monitor physical activity intensity
- Drink water to replace lost fluids
- To avoid foot problems, invest in good shoes and avoid cement surfaces if possible

PHYSICAL ACTIVITY DON'Ts



- Don't engage in physical activity when you are not feeling well
- Don't engage in physical activity in extreme heat, cold or humidity
- Don't inject insulin into an area that will be stressed by physical activity
- STOP if unusual pain occurs
- Don't engage in physical activity during insulin peak times
- Don't engage in physical activity if blood sugar is 250 or more and ketones are present
- Don't drink alcoholic beverages before, during or after physical activity

IF A REACTION OCCURS!

- STOP physical activity
- Test blood sugar
- Treat as needed
- Retest blood sugar and contact your doctor if reactions continue

Figure 10: Do's and don'ts of physical activity for people with diabetes mellitus (Scripps Whittier Diabetes Institute, 2006)

Annex 5: Detailed description of Task “Instructor training” (Provided by Muenster University)

The course content will be a complex combination of physical activity, nutrition and mental well-being. This multidimensional and behavior-oriented approach pursues the main goal of behavior change of the seniors so that they have an imagination of a healthy and active life after the end of the official course. Older adults should acquire knowledge about a healthy active living as well as skills and competences to use this knowledge and these competences in their life. For this it will be important that the future instructors which will conduct the healthy living course will have the ability to understand the theory of behavior change by themselves, become familiar with it and impart this knowledge to a specific audience, namely older people.

Instructors also play an important role in uptake, attendance and adherence to senior's physical activity courses. Experience as well as the personality of instructors is shown to influence the attendance and adherence of older adults to exercise classes (Hawley, 2011). These remarks are only explored for exercise classes, but one can expect that this is also valid for the nutrition and mental well-being part of our course. To reach a high attendance in our course it will be necessary that our trainers/instructors are well educated and experienced. As Alan and Jones (2005, p. 302) say “excellent physical activity instructors, [...], are not created with just a few days of training”. Therefore one precondition to become an instructor in our healthy living course will be experience in at least one of the fields' physical activity, nutrition and well-being. Another precondition will be experience in the work with seniors. Both preconditions are very important because older people will likely show any medical condition or any kind of constraint or drugs intake and motivation problems that need more knowledge than the training of younger adults. Special knowledge, skills and practical training are necessary to provide a safe and effective physical activity lesson (Ecclestone & Jones, 2004; National Council on the Aging [NCOA], 2005). Beside this, instructors have to sympathize with the physical, psychological, cognitive and social circumstances (mostly declines and loss) of seniors.

In summary instructors need expert knowledge and skills in physical activity, nutrition, mental well-being and behavior change as well as methodical and didactical skills, social competences and talent for organizing (Schellenberger, 2006, cited after Beckers & Schmidt-Millard, 1991).

The International Curriculum Guidelines for preparing physical activity instructors of older adults have been developed in order “to

- (1) ensure safe, effective, and accessible physical activity /fitness programs for older adults;
- (2) develop competent physical activity instructors of older adults;
- (3) provide more consistency among instructor training programs preparing physical activity instructors of older adults;
- (4) inform administrators, physical activity instructors and others about the minimum guidelines recommended by the profession when recruiting physical activity instructors of older adults;
- (5) clarify the definition and role of physical activity instructor for older adults;
- (6) establish the level of expertise needed to help protect instructors and other facility staff from litigation (a lawsuit)” (Ecclestone & Jones, 2004, p. 468).

The International Curriculum Guidelines for preparing physical activity instructors of older adults are the following nine training modules. They are presented as separated modules with recommended areas of study information on different topics (-) and suggested topics (o). These guidelines have been developed for physical activity instructors of older adults. We modified them for our purpose for nutrition and mental well-being. (Ecclestone & Jones, 2004, pp. 469-474, slightly modified):

1) Overview of aging and active lifestyle

- general background information about the aging process and the benefits of an active lifestyle
 - o demographic considerations (e.g., ethnicity, culture, gender)
 - o definitions of aging (e.g., pathological, usual and successful aging)
 - o difference between the terms chronological, biological and functional aging
 - o benefits of physical activity as it relates to the multiple dimensions of wellness (e.g., intellectual, emotional, physical, vocational, social, spiritual) and the prevention of chronic medical conditions, health promotion and quality of life throughout the lifespan
 - o benefits of healthy nutrition on health promotion and quality of life throughout the lifespan
 - o benefits of mental well-being on wellness, health promotion and quality of life throughout the lifespan
 - o current research and epidemiology related to health/physical activity issues

- current research and epidemiology related to health/nutrition issues
- current research related to health/mental well-being

2) Psychological, sociocultural and physiological aspects of healthy living and older adults

- psychological, sociocultural, and physiological aspects of healthy living in order to develop safe and effective healthy living programs for older adults
 - exercise science: basic anatomy, physiology, neurology, motor learning and control and exercise psychology
 - ecotrophology/nutritional science: nutrient physiology, nutrients, food composition, calorie intake, food safety
 - myths, stereotypes and barriers associated with aging and physical activity participation in later life
 - myths, stereotypes and barriers associated with aging and malnutrition
 - stereotypes and barriers associated with aging and mental well-being
 - predictors of successful aging (e.g., biological, psychological and sociological theories of aging, environmental factors and lifestyle choices)
 - relationship between physical activity and psycho-social well-being
 - relationship between nutrition and well-being
 - age-associated physiological and biomechanical changes in multiple body systems (e.g., cardiovascular and respiratory systems, musculoskeletal system and central nervous system) and how these changes affect functional mobility and independence.

3) Screening, assessment and goal setting

- information on selection, administration and interpretation of pre-exercise health and activity screening, fitness and mobility assessments and eating habits appropriate for older adults
- this information will provide the basis for active living program design and appropriate referrals to other health professionals
 - guidelines and procedures for the selection, administration and interpretation of screening tools to determine the health, physical activity, nutrition and disability status of older adult participants
 - health, activity and other lifestyle appraisals, including cardiovascular and falls risk factor identification
 - how and when to make appropriate referrals to, or seek advice from, physicians and/or other qualified allied health and fitness professionals

- physiological and functional fitness assessments (e.g., heart rate, blood pressure, Body Mass Index, field tests for strength, flexibility, submaximal endurance and functional mobility such as balance, agility, gait, coordination and power)
- psychological (e.g., self-efficacy, depression, stage in behavior change models) and sociological (e.g., social support) assessments
- information on establishing, with client input, realistic and measurable short, medium and longterm goals
 - factors influencing healthy living among older adults (barriers, motivators, regular involvement in physical activity and behavior modification)
 - developing, monitoring, and modifying short- and long-term healthy living goals based on results from screening and assessments and input from the participant
 - importance of encouraging lifetime leisure physical activities (e.g., dancing, gardening, hiking, tennis, swimming) in addition to structured exercise programs as well as encouraging healthy lifestyle choices

4) Program design and management

- how to use results from screening, assessment and client goals to make appropriate decisions regarding healthy active living course program design and management
 - interpretation of pre-screening and assessment data and consideration of client goals for effective program development
 - exercise variables (e.g., mode, frequency, duration, intensity) and principles (over-load, functional relevance, challenge, accommodation)
 - exercise training components/methods (e.g., warm-up, cool-down, flexibility, resistance, aerobic endurance, balance and mobility, mind/body exercise, aquatics)
 - applied movement analysis for proper selection and implementation of specific exercises
 - training formats and session designs for different functional abilities and individual and group exercise sequencing for exercise programming
 - economic considerations and consequent equipment options (e.g., quality for cost, safety and age-friendliness)
 - accompanying course materials (age-friendliness, appropriate for stage of behavior change)
 - importance of making healthy lifestyle choices (e.g., proper nutrition, stress management and smoking cessation)

- an organizational system for participant recruitment, tracking exercise compliance and maintaining other client information
- methods for client re-assessment and program evaluation

5) Program design for older adults with stable medical conditions

- common medical conditions of older adults, signs and symptoms associated with medication-related negative interactions during activity and how to adapt exercise for clients with different fitness levels and stable medical conditions to help prevent injury and other emergency situations
 - age-related medical conditions (e.g., cardiovascular disease, stroke hypertension, respiratory disorders, obesity, arthritis, osteoporosis, back pain, diabetes, balance and motor control deficits, visual and hearing disorders)
 - how to adapt group and individual exercise programs to accommodate for age-related medical conditions and for people who have experienced falls, operations and illness
 - how to adapt group and individual exercise programs to accommodate for prosthetics (e.g., artificial hips, knees, legs)
 - how to design programs for preventative health (e.g., exercises to reduce risk of falling, control diabetes, heart disease)
 - recognize signs and symptoms associated with medication-related negative interactions during physical activity (e.g., postural hypotension, arrhythmias, fatigue, weakness, dizziness, balance and coordination problems, altered depth perception, depression, confusion, dehydration, and urinary incontinence) and refer back to health professional

6) Teaching skills

- information about motor learning principles that guide the selection and delivery of effective individualized and group exercises and physical activities and the construction of safe and effective practice environments
 - application of motor learning principles for proper client instruction, verbal cues, feedback and reinforcement
 - structure of the learning environment to facilitate optimal learning of motor skills
 - development of safe, friendly and fun healthy living environments (e.g., appropriate use of humor, special equipment, creative movements, music, novelty and props)
 - issues facing older adults that may affect motivation (e.g., depression, social isolation, learned helplessness, low self-efficacy)
 - development of lesson plans and elements of instruction

- methods for self-evaluation of teaching effectiveness
- monitoring and adjustment of exercise variables (e.g., intensity, duration, etc.)

7) Leadership, communication and marketing skills

- information on how to incorporate effective motivational, communication, and leadership skills related to teaching groups as well as professional leadership skills and how to create effective marketing tools for program and self
 - principles of individual and group dynamics in structured exercise or mental well-being settings
 - translation of technical terminology into client-friendly language
 - incorporating leadership skills into healthy living groups to enhance teaching effectiveness and client satisfaction
 - application of positive interpersonal interaction behaviors to work with a heterogeneous older adult population (e.g., gender, ethnicity, education level)
 - listening skills and reception to participant feedback
 - develop social support strategies (e.g., buddy system, telephone support)
 - develop effective, age-friendly marketing strategies and tools of program and self, and methods of delivering the "right" message

8) Client safety and first aid

- information on how to develop a risk management plan to promote a safe exercise environment and respond to emergency situations
 - signs that indicate need for immediate exercise cessation and/or immediate medical consultation
 - appropriate response to emergency situations such as would be covered in standard first-aid and CPR classes (e.g., cardiac arrest, airway obstruction, emergencies requiring rescue breathing, heat- and cold-related injuries, musculoskeletal injuries including strains, sprains and fractures, diabetic emergencies, food allergies, bleeding, falls, seizures and shock)
 - establishment of an emergency action plan
 - identification of a safe and age-friendly (e.g., working condition of equipment, accessibility, ventilation, lighting, floor surfaces, proper footwear, access to water and washroom facilities) and precautions for environmental extremes (e.g., high or low temperatures or excessive humidity)

9) Ethics and professional conduct

- information on legal, ethical, and professional conduct
 - legal issues related to delivering physical activity programs or healthy living courses to older adults (legal concepts and terminology)

- issues related to lawsuits (scope of practice, industry standards, negligence, types of applicable insurance coverage)
- ethical standards and personal conduct and scope of healthy living instructors of older adults
- accessing resources for the enhancement of professional skills (e.g., position stands, ethical practices, professional practice guidelines consistent with the standards of care)
- methods of continuing education to enhance one's professional skills

Recommendations for qualifications for instructors

The original guidelines mentioned above doesn't recommend qualifications of instructors and the NCOA (2005, p. 2) also says, "that no particular certification is a predictor of effectiveness, but rather a combination of preparation, experience, and attitude are the best indicators of an effective instructor". Nonetheless, we recommend some qualifications for our future instructors because they don't only have to conduct physical activity, nutrition and/or mental well-being classes but also have to support a behavior change among the older adults and have to train more instructors as described above. The recommendation to become a trainer/instructor of the initial course is restricted on a limited group of persons because they will have to train more trainers in their particular country. We want to be sure, that they will have the ability to train the trainers in an appropriate way. For this, we recommend that the trainer of the pilot course should at least have:

- an academic degree in either
 - sport and exercise science (degree: Bachelor or Master)
 - nutritional science (ecotrophology; degree: Bachelor or Master)
 - health science (degree: Bachelor or Master)
 - with courses/modules especially designed for older people respectively
 - gerontology (degree: Bachelor or Master)
- experience as a trainer in the field of physical activity, nutrition and/or mental well-being/relaxation
- experience in the work with older people (trainer for older adults physical, cooking classes, social worker)
- participation in the initial training for instructors

To be sure that everyone has the same understanding of the qualifications, we want to mention the European Qualifications Framework for Lifelong Learning (EQF). You can compare your national qualification system with European references under the website http://ec.europa.eu/eqf/compare_en.htm. What we (in Germany) understand of Bachelor and Master Degree equates to Level 6 (for Bachelor) and Level 7 (for Master) of the framework (Bundesministerium für Bildung und Forschung, 2013).

The trainers which will be educated by the initial trainers should at least have:

- a trainer/exercise instructor certification in the field of physical activity with a special education in physical activity for seniors (health exercise, exercise in prevention, exercise in rehabilitation, exercise in therapy)
- or a trainer/instructor license in mental well-being/relaxation with a special education in relaxation methods for seniors
- or an education in nutrition for seniors
- experience as a trainer in the field of physical activity, nutrition or mental well-being/relaxation
- experience in the work with older people
- participation in the training for instructors

These preconditions to become an instructor are comparable to those of other prevention programs in Germany (e.g., Lohmann et al., n.y.; Regelin et al., 2008). The level in the EQF can be classified into 4 to 5 (Szygusch & Liebl, 2012).

Competences of instructors

The NCOA (2005) names three characteristics *competence*, *communication* and *care* to be identified as an outstanding physical activity instructor. In the following explanation communication and care will belong to social competence. The instructors will need to have or learn some competences in the work with older people (Kleinert & Neuber, 1996; NCOA, 2005; Tittlbach, et al., 2012):

- *Professional competence*: First of all, the instructors need knowledge and understanding of aging processes and the effects of physical activity, nutrition and mental well-being on mental and physical health conditions as well as an understanding of the models of behavior change. They should have a basic understanding and skills on how to create a safe working condition and environment. See a more detailed description of topics related to professional competence that are recommended for physical activity instructors in the international guidelines provided in this chapter.

- *Planning competence*: The instructors should be able to appraise the basic conditions in their organizations and to plan and organize an appropriate environment of a healthy living course.
- *Mediating competence*: Competence to adapt the training and exercises to the personal preconditions (health condition, experiences with exercise) of the older people.
- *Social competence*: The instructors need to have empathy and sympathy for the special conditions of elderly people (e.g., loss of spouse, decline of physical, psychological and cognitive capacities) and have to consider these conditions in the course planning. They also have to care about the older adults with attention to all participants and by acknowledging all efforts and improvements by compliments or non-verbal clues (smile etc.). To mediate the course content to the seniors it will furthermore be necessary that the instructors have some *communication skills* which are appropriate for seniors (e.g., age appropriate language, clear voice, consideration of loss of hearing, meaningful and constructive feedback, communication with different personality types).

“Effective instructors have a genuine passion for what they do, and seek to inspire older adults to improve their health and well-being. They are always positive in their actions and words, and create a comfortable and nonthreatening environment in their classes” (NCOA, 2005, p. 3).

Recommendations for the training for instructors:

The NCOA (2005) recommends searching instructors through networking, personal connections and in universities where you can find highly motivated trainers. They also recommend a continuing education, observing experienced instructors, ongoing self-evaluation and participant feedback to become an outstanding physical activity instructor. We only have some days of training that is why we recommend the following approach of the training for instructors:

During the training of the instructors, the instructors should (a) get sensitized to the concept of Active I with the three aspects physical activity, nutrition and mental well-being and get motivated to use it and (b) should learn the competences mentioned above. These goals could be best reached by the examination of the methodical and didactical principles of the course with personal practical experiences (Kleinert & Neuber, 1996). There should be a combination of theoretical information and practical working phases with an active participation and integration of the experiences of the participants. Participants will experience by means of practical examples of health promotion through physical activity, healthy nutrition and mental well-being how a healthy active lifestyle can be communicated and experienced with different methods.

Annex 6: Kind of disabilities - statistics (provided by Maraton Warszawski)

(http://www.stat.gov.pl/gus/5840_14834_PLK_HTML.htm)

KIND OF DISABILITY	age group		MALE		FEMALE	
	Working – non-mobility	postworking	Working – non-mobility	postworking	Working – non-mobility	postworking
Total number	1026326	1098681	633869	376236	392456	722446
SIGNIFICANT	217321	498503	141866	173116	75455	325386
suffer the limitation of efficiency:						
total	112013	218767	74561	78176	37452	140591
serious	74603	203806	48121	68756	26482	135050
moderate	30705	75930	19184	26185	11521	49745
moderate	432692	402578	264202	138841	168490	263737
suffer the limitation of efficiency:						
total	25804	20402	17300	7686	8504	12716
serious	110433	131975	72411	47279	38022	84696
moderate	296455	250200	174491	83875	121964	166325
LIGHT	342829	172445	206614	56210	136215	116234
suffer the limitation of efficiency:						
total	6977	5136	4838	1941	2139	3195
serious	39835	27414	26644	9693	13192	17721
moderate	296017	139895	175132	44576	120885	95319
UNDETERMINED	33483	25156	21187	8068	12297	17088
suffer the limitation of efficiency:						
total	4273	4343	2886	1404	1387	2939
serious	9214	9193	6268	2766	2946	6427

Annex 7: Overview of medias that can be used for dissemination

Partner	TV	Radio	Magazines/newspaper	Internet
ProActive	RTE National TV Nationwide, Afternoon show which is full of lifestyle topics such as cookery, health	- News talk Radio - RTE Radio 1 - Today FM	- Bray People - Carlow Nationalist - Carlow People - Drogheda Independent - Enniscorthy Echo - Enniscorthy Guardian - Evening Herald - Fingal Independent - Gorey Echo - Gorey Guardian - Irish Daily Mail - Irish Daily Mirror - Irish Daily Star - Irish Examiner - Irish Farmers Journal - Irish Independent - Irish Mail on Sunday - Irish Sun - Irish Sun on Sunday - Irish Sunday Mirror - Kildare Nationalist - Laois Nationalist - New Ross Echo - New Ross Standard - Roscommon Herald - Senior Times - Sligo Champion - Sunday Independent - Sunday World - The Argus - The Corkman - The Irish Times - The Kerryman - The Sunday Business Post - The Sunday Times - Waterford News & Star - Weekly Papers: - Western People - Wexford Echo - Wexford People - Wicklow People Positive Life magazine (distributed in practitioner clinics and health stores)	http://www.seniortimes.ie
Kappaerre			Local daily	

			newspapers (“La Nazione”, “Il Tirreno”) Monthly magazines provided by associations and cooperative companies.	
Maraton Warszawski			<ul style="list-style-type: none"> - political magazines (Newsweek, Polityka, Do rzeczy) - tabloids (Super Express, Fakt) - magazines with TV listings, news on TV shows and celebrities, crossword puzzles (To&OWO, TeleTydzień) 	
ADESPER				http://weblog.maimonides.edu/ http://terceraedadyvejez.wordpress.com/ http://jubilacionterceraedad.blogspot.com.es/

Annex 8: Sports Doctor Recognition in the elderly (provided by ADESPER)

Physical activity programs cannot be performed in an uncontrolled way. You must know that 85% of people over 65 have a chronic disease: over 45% of over 65s suffer from any disease, there is a high prevalence of hypertension and these problems, as well as other processes can trigger problems with uncontrolled efforts.

The contents of the medical examination may vary depending on the situation of the elderly and in this sense is very useful the following classification of seniors (Garrido et al., 1996):

- Active elderly: Generally recently retired without pathology. It is given a complete and objective assessment of physical activity is to improve aerobic fitness (maximum gain of oxygen consumption).
- Vulnerable elder: It has a functional impairment and chronic diseases. There seems indicated a full assessment. It is necessary to conduct an analysis of the basic activities of daily living (Katz index) and / or instrumented Index (Lawton and Brody). You need to know their cognitive status (Pfeiffer Questionnaire: SMPMSQ).
- Frail elderly: Has minimal functional capacity is institutionalized and possibly also to present multiple medical problems. Requires a minimum valuation analysis of everyday life and mental state.
- It is difficult to answer whether the answer is a functional loss in the elderly, or simply reducing the normal physical activity. In this age can be very difficult to establish the barrier between the physiological and pathological.

The American College of Sports Medicine recommends exercise testing to all men over 40 and women over 50 who are in good health and are to perform vigorous exercise programs and all the elders with suggestive symptoms (or known existence) of metabolic, cardiovascular and pulmonary or who are planning a program of moderate exercise conditions. In the necessary clinical, detailed and thorough history, we must pay special attention to the presence of chronic diseases, the atypical presentation of these diseases and to the analysis of medication commonly consumed especially in regard to sedatives, antidepressants, antihypertensives, insulin, ADO, antihistamines, diuretics, beta blockers, etc. It is useful to know the levels of activity of the individual in order to establish objective and real work suitable to their abilities.

The exploration, which is analogous to that of the adult, should pay special emphasis on the analysis of the degree of flexibility of skeletal muscle in the right situation assessment of balance and gait, as well as exploration of vision and any disease that may have given the

great importance that will have on the subsequent development of physical program. It is noteworthy that deficiencies in these skills may pose constraints to development of physical activity of the elderly (Bertolín & Baldo, 2009).

Since the majority of the morbidity / mortality associated with exercise is associated with a pre-existing heart disease is essential to a complete evaluation of cardiac function including cardiac auscultation, taking blood pressure of supine rest and orthostasis, and embodiment of a resting electrocardiogram twelve lead. It is necessary to perform stress test, preferably in relation to the treadmill and bicycle ergometer in order to provide data on the functional status of the elderly, rather than for possible prognostic implications for ischemic heart disease. For proper data analysis, stress testing should be planned as maximum or limited type by certain criteria (exhaustion, ST modification, arrhythmias, hypertension stress, hypotension, vagal pict, etc. ...) for the calculations VO₂ max based on relationships between heart rate and oxygen consumption is rather vague in these age groups. The study of the various parameters is essential for the planning of subsequent physical activity, especially to determine levels of workload, heart rate limit, without forgetting the interventionist attitudes and treat arterial hypertension or ischemic heart disease effort. It is advisable to make an analytical control including: complete blood count, cholesterol, renal function, glucose, and ions arising from analysis of the patient's medical history.

Summary: Clinical history:

- Own and family medical history
- Previous physical activity program
- Current physical activity program: frequency, duration, intensity
- Suffered chronic and acute diseases
- Regular medication
- Symptoms chest pain, dyspnoea, claudication of extremities, joint clinical ...
- Risk factors: snuff, anxiety, obesity ...
- Hypertension (> 140 /> 90 mmHg).
- Hyperlipidemia.
- Glycemia.