



**SAPIENZA**  
UNIVERSITÀ DI ROMA

**FACULTY OF PHARMACY AND MEDICINE**

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**DEPARTMENT OF PUBLIC HEALTH AND INFECTIOUS DISEASE**

**“SANARELLI” INSTITUTE**

**PHD IN INFECTIOUS DISEASES, MICROBIOLOGY AND PUBLIC HEALTH**

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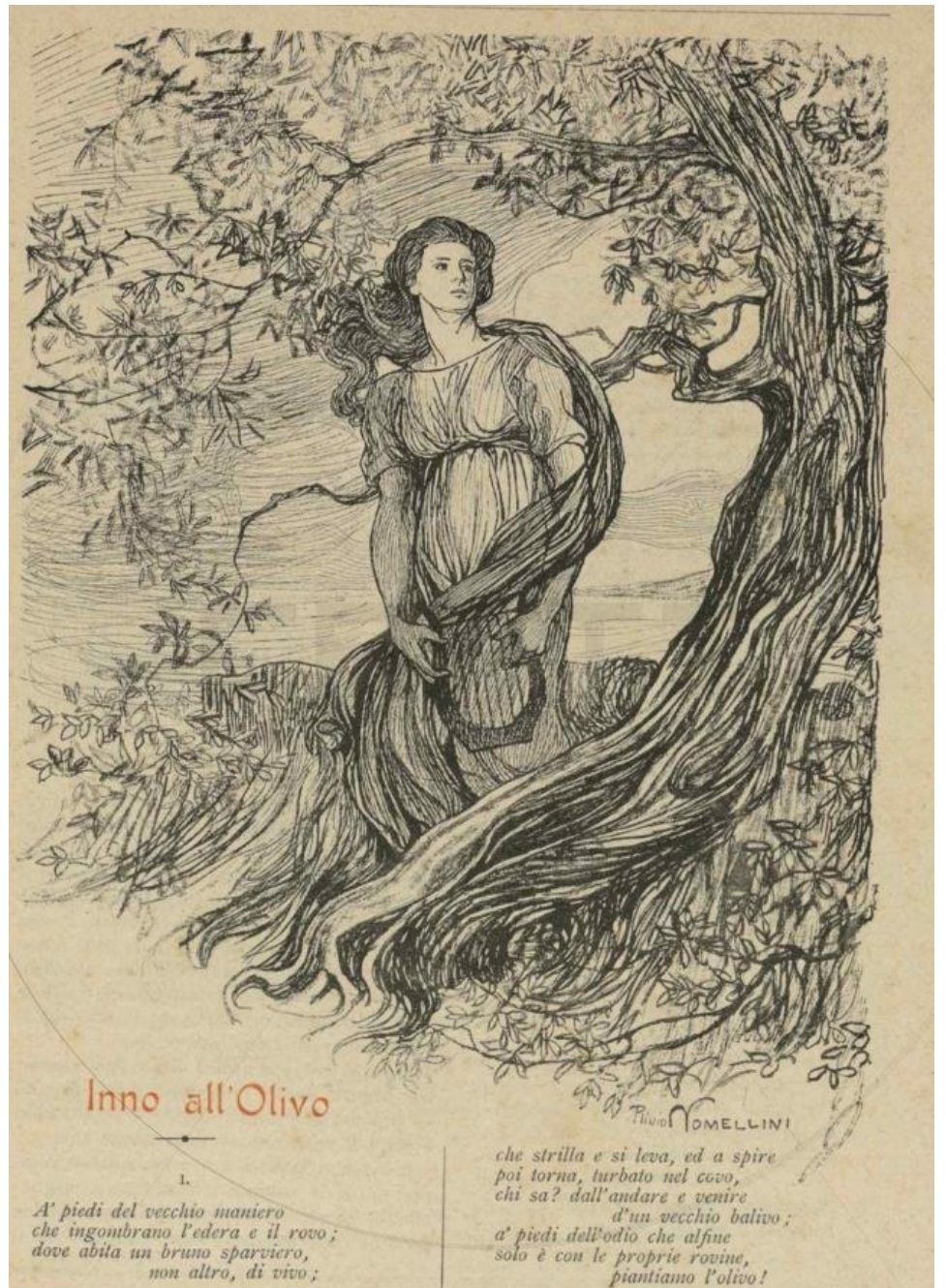
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*Se ti curiamo oggi, ti aiutiamo  
oggi.*

*Se ti educiamo, ti curiamo per  
tutta la vita*

*(OMS)*



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## **SUMMARY**

### **Background and objective:**

The growing impact of chronic degenerative pathologies (such as cardiovascular disease, type 2 diabetes and Alzheimer's disease) requires and pushes towards the development of new preventive strategies to reduce the incidence and prevalence of these diseases.

Lifestyle changes, especially related to the Mediterranean Diet (MD), have the potential to modify disease outcomes and ultimately costs related to their management.

The Mediterranean dietary pattern (MDP) is a useful tool in the primary and secondary prevention of cardiovascular diseases, and its adoption has significantly beneficial public health implications. The rise in chronic diseases, stresses the need to retain a healthy workforce.

Many chronic diseases are linked to unhealthy lifestyles and stress. Fortunately, in many cases the severity chronic disease can be altered and improved by appropriate nutrition, increased physical activity, smoking cessation and reduced alcohol consumption.

Unfortunately, high level of stress and unhealthy lifestyles are very common among university employees and students.

This calls for appropriate action focusing on improving and maintaining university employees and students' health.

Settings such as the workplace and the university, in particular, have been established as one of the priority settings for health promotion into the 21st century, as they can reach a great range of people of diverse backgrounds.

Therefore, the proposed project examined university employees' and students' health and well-being, with the overall aim to improve and promote health in "Sapienza" University of Rome.

## **Material and methods:**

*Phase 1:* The first part of the project followed a cross-sectional design. In order to identify areas of health-promotion and prevention, employee and student health were assessed through a self-administered questionnaire. Both groups participated in survey based on existing and validated instruments: Socio-demographic factors; Food Frequency Questionnaire (FFQ); Questionnaire on alcohol consumption (Audit c); Questionnaire on smoking habit and tobacco consumption (e.g. Fagerström Test); Questionnaire for the evaluation of physical activity (IPAQ); Questionnaire on the health related quality of life (SF-12).

The project provides the establishment of a pilot center of preventive medicine and health care and it was created an ad hoc website dedicated to these issues. It could be visualized on the following link:

<https://dspmi.uniroma1.it/strutture/progetto-preveniamo>

*In progress:*

*Phase 2:* based on the results of the first part target-oriented workplace and university health promotion efforts will be developed.

*Phase 3:* it will involve the evaluation and monitoring of the project. Evaluation and monitoring is an important in ensuring the ongoing development of the project as well as safeguarding that goals, objectives and strategies are being met. Evaluation will take place through questionnaires.

## **Results:**

On 760 University people, the mean score was 5 (SD 1.71; range:0-10).

The majority of the students/employees (n.632; 83.2%) showed a score < 6.99, indicating that they do not respect the rules of the MD; on the contrary, only 128 (16.8%) exceeded a score of 7, and therefore

adhered in varying degrees. In detail, no one reached the maximum score of 12 and no one of 11. The maximum score gained was 10 for only 2 people (0.3%).

By binary logistic regression, resulted that the likelihood of adhering to healthy eating habits increase in older people and to be an employee could reduce the likelihood of adhering to the Mediterranean dietary pattern.

About 23.1% declared to smoke cigarettes, 52.2% in the last 7 days never performed vigorous physical activities and 21.2% never performed moderate physical activities. A percentage of 45% of the sample in the last 7 days walked for at least 10 minutes every day. Only 5.5% of the sample answered “excellent” to the question on own health perception, 29.7% declared “very good”, 50.1% “good”, 13.3% “not very good”, 1.3% poor. Most of the sample (n. 256; 33.7%) consumes alcoholic beverages 2-4 times a week and for n.151 (19.9%) was happened to drink more than six glasses once a month.

## **Conclusions**

This study is a good starting point for carrying out larger study, with repeated health promotion interventions over time and long-term efficacy evaluation.



## **INTRODUCTION**

### **UNIVERSITY WORKPLACE AND HEALTH PROMOTION**

Where people live and work greatly influences their health.

In today's work life, employees are generally working for longer hours, as the rising levels of responsibilities require them to exert themselves even more strenuously to meet rising expectations about work performance. So that stress and unhealthy lifestyles among university employees is a serious concern.

Whereas, excessive working hours, with a high workload contribute long hours of physical inactivity; budget constraints, the pressure to write and publish papers, attending meetings, and seeking funding, add on to an already high stress level among university employees [HU 2016].

Likewise, many studies have been conducted highlighting the unhealthy lifestyle behavior of university students, and the increasing frequency of mental health problems including high levels of depressive symptoms. The effect of stress in university staff is not just of consequence to employees themselves, but can have serious consequences for students as well [Mark 2011].

Therefore, employee's and university student's health should be seen as a holistic model.

Furthermore, the rise in chronic diseases, such as diabetes and cardiovascular diseases, stresses the need retain a healthy workforce.

Cardiovascular diseases are the first cause of death in the western world. These pathological frameworks have a strong impact on the resources of the health system since they are not only the cause of the subject's death, but often turn into chronic conditions that accompany the individual in the rest of his life and make him/her a vulnerable person.

Many chronic diseases are linked to unhealthy lifestyles and stress. Fortunately, in many cases the severity chronic disease can be altered and improved by appropriate nutrition, increased physical activity,

smoking cessation and reduced alcohol consumption. The challenge is now to develop health-promoting workplaces and health promoting universities that encourage health-promoting activities and that consider the universities diverse population.

The workplace and the university have been established as one of the priority settings for health promotion into the 21st century, as they can reach a great range of people of diverse backgrounds.

The concept of the workplace and the university as health settings is not new.

The approaches workplace health promotion and health promotion university have its roots in the "Ottawa Charter" of 1986. While health workplace health promotion aims to balance lifestyle and health habits among workers (e.g. eating habits at the workplace) and takes on efforts to improve and maintain employees health, by reducing the general risk factors and in particular those most associated with the development and worsening of chronic diseases; health promoting universities aims to integrate processes and structures within the university's culture supportive of a commitment to health and health promotion [Proper 2007].

This initiative not only aims to promote the health and well-being of students, but also staff and the wider community. While universities can do many things to promote and protect the health of students and staff, a range of factors such as economic and cultural environments, social networks and leadership often influence universities, their employees and students.

Thus, they should consider to implement systems thinking and whole-systems thinking.

This includes how the university as a system works as a complete entity.

Therefore, this project placed great emphasis on lifestyles among students and staff by "Sapienza" University of Rome, that is the largest University in Europe, welcoming people from all over Italy and Europe.

## **LIFESTYLES AND CHRONIC DISEASES**

Many chronic diseases are linked to unhealthy lifestyles and stress.

Coronary artery disease, ischemic stroke, diabetes, and some specific cancers, are the dominant sources of morbidity and mortality worldwide [WHO 2002].

The primary determinants of these diseases are not genetic but environmental factors, including diet and lifestyle. Thus, considerable research has been aimed at identifying modifiable determinants of chronic diseases.

Prospective epidemiological studies, some randomized prevention trials, and many short-term studies of intermediate endpoints such as blood pressure and lipids have revealed a good deal about the specific dietary and lifestyle determinants of major chronic diseases.

A general conclusion is that reducing identified, modifiable dietary and lifestyle risk factors could prevent most cases of cardiovascular diseases, stroke, diabetes, and many cancers among high-income populations [Willett 2002].

The growing impact of chronic degenerative pathologies requires and pushes towards the development of new preventive strategies to reduce the incidence and prevalence of these diseases.

The rise in chronic diseases, also stresses the need to retain a healthy workforce. Many chronic degenerative diseases are linked to unhealthy lifestyles and stress.

Preventing these diseases will require changes in behaviors related to:

- 1. Smoking**
- 2. Physical activity**
- 3. Alcohol**
- 4. Diet and Healthy Weight**

Investments in education, food policies, and urban physical infrastructure are needed to support and encourage these changes.

### **a. Avoid Tobacco Use**

Avoidance of smoking by preventing initiation or by cessation for those who already smoke is the single most important way to prevent CVD and cancer.

The tobacco epidemic is one of the most important public health challenges.

The WHO estimates that in the world cigarette smoking kills about 6 million people every year, of which 5 million are smokers or former smokers. About 50% of current smokers will die from cigarette-related illnesses [WHO 2015].

Tobacco is a known or probable cause of at least 25 diseases, including chronic obstructive pulmonary disease (COPD) and other chronic lung diseases, oncological diseases, heart diseases and vasculopathies. Among the tumors, there is sufficient scientific evidence with respect to a direct causal relationship between cigarette smoking and tumor of lung, larynx, oral cavity, pharynx, esophagus, pancreas, bladder, cervix, stomach and acute myeloid leukemia [Gandini 2008].

The risk of premature death and the likelihood of developing smoking-related diseases depend on several factors, including the number of years spent smoking, the number of cigarettes daily smoked, the starting and terminating age of smoking, and if the person was already ill at the time of smoking cessation.

Smoking and passive smoking have been identified as modifiable risk factors for acute myocardial infarction (AMI) and acute coronary syndrome (ACS). The INTERHEART study is a case-control investigation on AMI conducted in 52 countries (Africa, Asia, Australia, Middle East and North and South America). This study showed that tobacco use is one of the most important causes of global AMI, especially in men. In a large multiethnic population [Heatherton 1991] the odds ratio (OR) for AMI in smokers was 2.95 compared to nonsmokers. Tobacco use is the leading preventable cause of death worldwide, responsible for 5 million deaths each year or 12% of all deaths. In addition, 29% of coronary vascular disease deaths are attributable to tobacco [Ware 1996].

### **b. Maintain Daily Physical Activity and Limit Television Watching**

Contemporary life in developed nations has markedly reduced people's opportunities to expend energy, whether in moving from place to place, in the work environment, or at home [Koplan 1999].

Dramatic reductions in physical activity are also occurring in developing countries because of urbanization, increased availability of motorized transportation to replace walking and bicycle riding, and mechanization of labor. However, regular physical activity is a key element in weight control and prevention of obesity [IARC 2002].

In addition to its key role in maintaining a healthy weight, regular physical activity reduces the risk of cardiovascular diseases, stroke, type 2 diabetes, colon and breast cancer, osteoporotic fractures, osteoarthritis, depression, and erectile dysfunction (Table 1). Important health benefits have even been associated with walking for half an hour per day, but greater reductions in risk are seen with longer durations of physical activity.

The number of hours of television watched per day is associated with increased obesity rates among both children and adults [Hernandez 1999] and with a higher risk of type 2 diabetes and gallstones [Hu 2001]. This association is likely attributable both to reduced physical activity and to increased consumption of foods and beverages high in calories, which are typically those promoted on television. Decreases in television watching reduce weight [Robinson1999]and the American Academy of Pediatrics recommends a maximum of two hours of television watching per day.

### **c. Alcohol Consumption**

Alcohol has been a part of human culture for all recorded history, with almost all societies in which alcohol is consumed experiencing net health and social problems [McGovern 2009].

With the industrialization of alcohol production and the globalization of its marketing and promotion, alcohol consumption and its related harms have increased worldwide.

Epidemiologic studies have established that alcohol abuse is associated with premature death and may increase the risk for developing several chronic conditions. Alcohol consumption is a risk factor for many chronic diseases and conditions.

The average volume of alcohol consumed, consumption patterns, and quality of the alcoholic beverages consumed likely have a causal impact on the mortality and morbidity related to chronic diseases and conditions. Twenty-five chronic disease and condition codes in the International Classification of Disease (ICD)-10 are entirely attributable to alcohol.

The main chronic diseases associated with alcohol abuse were alcohol-related neurologic disorders and cognitive impairments, alcohol-related cardiovascular diseases and alcohol-related cancer (upper airway, stomach, colorectal and liver) [Amelia M 1992].

Furthermore, alcohol has both beneficial and detrimental impacts on diabetes, ischemic stroke, and ischemic heart disease, depending on the overall volume of alcohol consumed, and, in the case of ischemic diseases, consumption patterns.

#### **d. Healthy Diet and Maintain a Healthy Weight**

Obesity is increasing rapidly worldwide. Even though obesity—a body mass index (BMI) of 30 or greater—has received more attention than overweight, overweight (BMI of 25 to 30) is typically even more prevalent and also confers elevated risks of many diseases.

Both overweight and obese people experience elevated mortality from cancers of the colon, breast (postmenopausal), kidney, endometrium, and other sites [Calle 2003].

Additional valuable information can be obtained by measuring waist circumference, which reflects abdominal fat accumulation. In many studies, waist circumference is a strong predictor of Cardiovascular diseases, stroke, and type 2 diabetes, even after controlling for BMI [Colditz 1999].

A waist circumference of approximately 100 centimeters for men and 88 centimeters for women has been used as the criterion for the upper limit of the healthy range in the United States, but for many people this extent of abdominal fat would be far above optimal. Because abdominal circumference is easily assessed, even where scales may not be available, further work to develop locally appropriate criteria could be worthwhile. In the meantime, increases of more than 5 centimeters can be used as a basis for recommending changes in activity patterns and diet.

Medical experts have long recognized the effects of diet on the risk of cardiovascular diseases, but the relationship between diet and many other conditions, including specific cancers, diabetes, have been documented.

- *Replace saturated and trans fats with unsaturated fats, including sources of omega-3 fatty acids.* Replacing saturated fats with unsaturated fats will reduce the risk of coronary artery disease [Hu 2002; WHO and FAO 2003] by reducing serum low-density lipoprotein (LDL) cholesterol. Also, polyunsaturated fats (including the long-chain omega-3 fish oils and probably alpha-linoleic acid, the primary plant omega-3 fatty acid) can prevent ventricular arrhythmias and thereby reduce fatal coronary artery disease.

Trans fatty acids produced by the partial hydrogenation of vegetable oils have uniquely adverse effects on blood lipids [Institute of Medicine. 2002] and increase risks of coronary artery disease [Hu 2002].

- *Ensure generous consumption of fruits and vegetables.* Strong evidence indicates that high intakes of fruits and vegetables will reduce the risk of coronary artery disease and stroke [Conlin 1999].
- Some of this benefit is mediated by higher intakes of potassium, but folic acid probably also plays a role [Hu 2002].

Substantial evidence also suggests that low folic acid intake is associated with greater risk of colon—and possibly breast—cancer and that use of multiple vitamins containing folic acid reduces the risk of these cancers [Giovannucci 2002].

- *Consume cereal products in their whole-grain, high-fiber form.* Consuming grains in a whole-grain, high-fiber form has double benefits. First, consumption of fiber from cereal products has consistently been associated with lower risks of coronary artery disease and type 2 diabetes [Hu 2001] which may be because of both the fiber itself and the vitamins and minerals naturally present in whole grains. High consumption of refined starches exacerbates the metabolic syndrome and is associated with higher risks of coronary artery disease [Hu 2002] and type 2 diabetes [Hu 2001]. Second, higher consumption of dietary fiber also appears to facilitate weight control [Swinburn 2004] and helps prevent constipation.
- *Limit consumption of sugar and sugar-based beverages.* Sugar (free sugars refined from sugarcane or sugar beets and high-fructose corn sweeteners) has no nutritional value except for calories and, thus, has negative health implications for those at risk of overweight. Furthermore, sugar contributes to the dietary glycemic load, which exacerbates the metabolic syndrome and is related to the risk of diabetes and coronary artery disease [Hu 2001] WHO has suggested an upper limit of 10 percent of energy from sugar, but lower intakes are usually desirable because of the adverse metabolic effects and empty calories.



- *Limit excessive caloric intake from any source.* Given the importance of obesity and overweight in the causation of many chronic diseases, avoiding excessive consumption of energy from any source is fundamentally important. Because calories consumed as beverages are less well-regulated than calories from solid food, limiting the consumption of sugar-sweetened beverages is particularly important.
- *Limit sodium intake.* The principle justification for limiting sodium is its effect on blood pressure, a major risk factor for stroke and coronary disease. WHO has suggested an upper limit of 1.7 grams of sodium per day (5 grams of salt per day) [WHO and FAO 2003].

**Table 1**

**Convincing and Probable Relationships between Dietary and Lifestyle Factors and Chronic Diseases**

Dietary and lifestyle factors	CVD	Type 2 diabetes	Cancer	Dental disease	Fracture	Cataract	Birth defects	Obesity	Metabolic syndrome	Depression	Sexual dysfunction
Avoid smoking	↓	↓	↓	↓	↓	↓		↑			↓
Pursue physical activity	↓	↓	↓		↓			↓	↓	↓	↓
Avoid overweight	↓	↓	↓		↑	↓			↓		↓
<b><i>Diet</i></b>											
Consume healthy types of fats <sup>a</sup>	↓	↓							↓		
Eat plenty of fruits and vegetables	↓		↓		↓	↓	↓	↓			
Replace refined grains with whole grains	↓	↓						↓	↓		
Limit sugar intake <sup>b</sup>	↓	↓		↓				↓	↓		
Limit excessive calories								↓	↓		
Limit sodium intake	↓										

*Note:* Bold = convincing; Standard = probable relation; ↑ = increase in risk; ↓ = decrease in risk.

a. Replace trans and saturated fats with mono- and polyunsaturated fats, including a regular source of N-3 fatty acids.

b. Includes limiting sugar-based beverages.

Source: WHO and FAO (World Health Organization and Food and Agriculture Organization of the United Nations). 2003. *Diet, Nutrition, and the Prevention of Chronic Diseases: Report of a Joint WHO/FAO Expert Consultation. Report 916. Geneva: WHO.*

## **MEDITERRANEAN DIET IN THE CHRONIC DISEASES PREVENTION**

The growing impact of chronic degenerative pathologies (such as cardiovascular disease, type 2 diabetes and Alzheimer's disease) requires and pushes towards the development of new preventive strategies to reduce the incidence and prevalence of these diseases.

Lifestyle changes, especially related to the Mediterranean diet, have the potential to modify disease outcomes and ultimately costs related to their management.

The Mediterranean diet has been widely reported as a model of healthy eating, for its contribution to a favorable healthy status and for numerous health benefits, including its inverse relationships with cardiovascular diseases (CVDs) and metabolic syndrome (a health condition characterized by abdominal obesity, dyslipidemia, elevated blood pressure and impaired glucose tolerance) [WHO/FAO 1986].

The contribution of MD to a favorable healthy status and its numerous health benefits are extensively linked with the reduction of cardiovascular disease events – especially with the incidence of recurrent myocardial infarction and cerebrovascular events – of some cancers, and of chronic degenerative diseases and mortality (Sofi2010) as well as with brain health (i.e., Alzheimer's disease) and cognitive improvement (Singh 2014; Féart 2013).

In addition, many investigators have already underlined the beneficial role that this dietary pattern may have in coagulation processes and inflammation, since it provides a significant source of antioxidant vitamins [Ambring 2004; Skroza 2012].

Cardiovascular diseases are the first cause of death in the western world. In 2014 cardiovascular diseases were responsible for 29.5% of all deaths in Italy [ISTAT].

In the literature, many epidemiological studies report high inhomogeneities in the incidence rate of cardiovascular diseases in relation to different geographical areas. Compared to the Northern Europe Countries and the United States, there is a lower incidence of coronary heart disease in the Countries of

Southern Europe and in particular in those facing the Mediterranean basin such as France, Spain, Greece and Italy [Keys 1986; Tunstall-Pedoe 1999; Masiá 1998].

This geographical variability has been attributed to environmental factors, lifestyles and different eating habits, which in the Mediterranean Countries traditionally reflect the characteristics of the “Mediterranean Diet”.

According to the LYON study, the Mediterranean diet decreases the mortality rate for coronary heart disease by 50% [Kris-Etherton 2001].

Other data show that an increase in adherence to the Mediterranean diet may result in a reduction in the overall incidence of cancer or mortality from cancer between 6 and 12% [WHO 2005].

In fact, it is widely considered a food model to be pursued, both in primary and in secondary prevention, since it is substantially able to change the cardiovascular risk profile towards achieving and maintaining good health and longevity [Trichopoulou 1995].

It is well recognized that there is a synergy among the nutrient-rich foods included in the MD that has a positive impact in the changes in intermediate pathways of cardiometabolic risk (i.e., blood lipids, insulin sensitivity, resistance to oxidation, inflammation, and vasoreactivity) [Jacobs 2009].

## **MEDITERRANEAN DIET AND ACADEMIC PERFORMANCE**

Also, a recent study reported that adherence to the MD may have a beneficial influence on academic performance in youth, independent of potential confounders, including body mass index, physical activity, fitness, and sedentary behaviour [Esteban-Cornejo 2015].

Several plausible mechanisms can explain the protective effect of adherence to the MD on cognition, including antioxidative and anti-inflammatory effects and reduced vascular comorbidities [Ambring 2004; Skroza 2012].

Other studies reported that the higher academic achievement, in both children and adolescents, were associated with richer intakes of fruits and vegetables [MacLellan 2008; Kristjánsson 2010; Sigfúsdóttir 2007; Martínez-Gómez 2012; Florence 2008].

Additionally, few studies in adolescents found a beneficial influence of fish consumption on academic indicators [de Groot 2012; Kim 2010].

At the contrary, McIsaac et al. found that youth that are moving away from the MD to adopt a less healthy diet (e.g., junk diet), may negatively affect their academic performance [McIsaac 2015].

## **MEDITERRANEAN DIET AND PHYSICAL PERFORMANCE**

In addition, according to a recent study, MD has beneficial effects also in relation to the physical performance. In fact, in a cohort study [Shahar 2012].

Individuals in the highest MD adherence group were more likely to be male, less likely to smoke, and more likely to have lower body mass index, higher energy intake, and greater physical activity ( $P < 0.05$ ).

Usual and rapid 20-m walking speed were highest in the high MD adherence group than in the other groups. Higher MD adherence was an independent predictor of less decline in usual 20-m walking speed.

Over 8 years of follow-up, the group with the highest adherence to the MD performed better at all time points.

At the contrary, a study conducted by Al-Attas et al., has demonstrated that, despite its positive effects on adiponectin, the MD failed to negate the adiponectin-lowering effect of cigarette smoking,

demonstrating the profound and independent capacity of cigarette smoke to negatively influence human health [Al-Attas 2013].

## **MEDITERRANEAN DIET: A CULTURAL MODEL FOR HEALTHY EATING**

The Mediterranean-style diet is not only a specific diet, but rather a collection of eating habits traditionally followed by people in the different countries bordering the Mediterranean Sea: “Passed down from generation to generation, it is constantly recreated by communities in response to their environment, their interaction with nature and their history, providing them with a sense of identity and continuity” [UNESCO 2013].

The term Mediterranean diet was coined in 1960 by the American physiologist Ancel Keys and his wife Margaret in their book *How to Eat Well and Stay Well the Mediterranean Way* [Keys 1975]. They identified the eating behaviors of countries such as Greece—Crete in particular—and southern Italy, with extension to other geographical areas around the Mediterranean basin. Based on their pioneer studies, the dietary patterns of these countries were associated with longevity and reduced rates of coronary heart disease morbidity and mortality, cancers, and other chronic diseases related to diet in the 1960s [Trichopoulou 2003; Sofi 2008]. The Mediterranean diet, however, did not begin in the 1960s but extends further back to biblical times.

The word diet is derived from the Greek “*diaeta*”, meaning not just food but “*way of life*” .

The Mediterranean Diet is more than just a defined diet, but it represents the plurality of various cultural expressions of different Mediterranean food cultures and lifestyles.

It constitutes a set of skills, knowledge, practices and traditions ranging from the landscape to the table, in total respect of the territory and of biodiversity. The MD is characterized by a nutritional model that has remained constant over time and space, consisting mainly in an elevated consumption of fruits, nuts

and vegetables, a moderate-to- high consumption of fish and seafood, the use of olive oil as the main source of fat, a low intake of red meat and dairy products and a low-to-moderate amount of red wine during meals, always respecting beliefs and traditions of each community [Berry 2011].

In its traditional form, the food in the region was eaten according to the season, dictated by climate and agriculture and over and above commemoration of landmarks such as annual festivals.

This legacy passed on and evolved in a constant temporal and spatial flow and acts as a living heritage in unique and outstanding cultural spaces; it is used to promote respect for cultural diversity and human creativity, an expression of sociability and communication between villages and individuals, a way to reinforce individuals' identities in their places of origin, an integrative element of the nature and the history of communities, and a mechanism of defense for agriculture, sustainable rural development, and the landscape and environment of the Mediterranean area [ Reguant-Aleix 2009].

The recent recognition by the United Nations Educational, Scientific and Cultural Organization (UNESCO) of the Mediterranean diet as an Intangible Cultural Heritage of Humanity reinforces, together with the scientific evidence, the Mediterranean diet as a cultural and health model [UNESCO 2010].

## **COMPONENTS OF THE ORIGINAL MEDITERRANEAN DIET**

A homogeneous Mediterranean diet is hard to deduce; each Mediterranean country brings its unique culture, history, and tradition to its food and eating. Diversity notwithstanding, Mediterranean regions share certain common dietary practices that remain a firm foundation for the food consumed that is responsible for health benefits.

According to the original definition of Keys [Keys, 1995], the typical Mediterranean diet is characterized by high consumption of olive oil (as the prevalent visible fat), vegetables, legumes, whole-grain products, fruits and nuts. The intake of saturated animal fats is relatively low, and there is a moderate fish

consumption (depending on the proximity to the sea), which furnishes enough provision of polyunsaturated fats, thus making it a low-glycemic-index diet [Willett 1995].

The generic Mediterranean diet is characterized by a high monounsaturated fat-to-saturated fat ratio, low total fat (<30%), low saturated fat (<10%), moderate alcohol intake (essentially wine), and high intake of vegetables, fruits, legumes, and grains (complex carbohydrates and dietary fiber) [Ferro-Luzzi 1995].

Contemporary adjustments in the Mediterranean cuisine have occurred as a result of new products and influences stretching from Asia to America with the introduction of tomatoes, potatoes, cornbeans, and cane and sugar, which, while widespread in modern cuisine, are not native to the region.

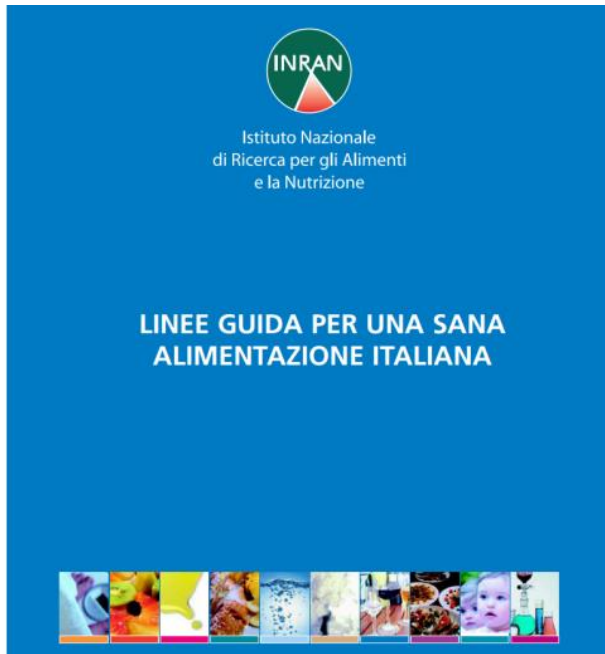
## **NUTRITIONAL ADEQUACY AND PUBLIC HEALTH**

Rapid changes in diets and lifestyles resulting from industrialization, urbanization, economic development, and market globalization are having a significant effect on the health and nutritional status of populations [Trichopoulou 1997].

Countries such as Spain and Italy have demonstrated a downward trend in adherence to the Mediterranean dietary pattern in recent decades [Nishida 2004; Bach-FaigA 2011; Alberti-Fidanza 1999]. The Guidelines for a Healthy and Correct Italian Food provide the “nutritional recommendations” that shape the characteristic Mediterranean diet: abundant consumption of fruit and vegetables, cereals, legumes, olive oil, fish, and, in less quantity, of meat, sausages, cheese and derivatives. An ideal dietetic pattern prefers poly and monounsaturated fats, in particular of the oleic acid contained in olive oil, limiting the intake of “trans” and saturated fats and cholesterol [INRAN 2003].



**FIGURE 1. Linee Guida per una sana e corretta alimentazione (INRAN)**



[http://nut.entecra.it/files/download/linee\\_guida/lineeguida\\_intro.pdf](http://nut.entecra.it/files/download/linee_guida/lineeguida_intro.pdf)

### **MEDITERRANEAN DIET PYRAMID TODAY. SCIENCE AND CULTURAL UPDATES**

The traditional Mediterranean diet (MD) is the heritage of millennia of exchanges of people, cultures and foods of all countries around the Mediterranean basin. It has been the basis of food habits during the twentieth century in all countries of the region, originally based on Mediterranean agricultural and rural models. However, the traditional MD is now progressively eroding due to the widespread dissemination of the Western-type economy, urban and technology-driven culture, as well as the globalisation of food production and consumption, related to the homogenisation of food behaviours in the modern era.

After the recognition of the MD as an Intangible Cultural Heritage of Humanity by UNESCO in 2010 considering the worldwide interest in the MDP and taking as a framework all the mentioned aspects, international scientists and experts have developed a new revised MD pyramid hoping to contribute to a much better adherence to this healthy dietary pattern.

The Mediterranean Diet Foundation together with the Forum on Mediterranean Food Cultures initiated the dialogue and process of gathering scientific opinion among international experts to develop a consensus position on a new revised MD pyramid representation (figure 2). The new revised MD and food lifestyle pyramid arises from the internal dialogues among scientific experts of the Mediterranean Diet Foundation’s International Scientific Committee and further discussions from a meeting held in the framework of the III CIISCAM Conference ‘The Mediterranean Diet today, a model of sustainable diet’ in Parma.

**FIGURE 2**

Mediterranean diet pyramid: a lifestyle for today  
guidelines for adult population

Serving size based on frugality  
and local habits  
Wine in moderation  
and respecting social beliefs



© 2010 Fundacion dieta mediterranea the use and promotion of this pyramid is recommended without any restriction



The final design of the MD pyramid today reflects the changing process that the MD is undergoing within the Mediterranean societies. This new graphic representation (Figure 2) was conceived as a simplified main frame pyramid, to be adapted to the specific realities of different countries (e.g. portion sizes) and variations in the dietary pattern related to the various geographical, socio-economic and cultural contexts of the Mediterranean region,

This pyramid is the result of an international consensus and is based on the latest scientific evidence on nutrition and health published in hundreds of scientific articles in recent decades.

It contributes to the harmonisation of educational tools used in the promotion of the MD and responds to the need for a common framework in the Mediterranean area, to be adapted to each country's and region's specific realities.

The use and promotion of this pyramid is recommended without any restrictions, and the material is available in English, Spanish, Catalan, Galician, Basque, French, Arabic, Italian, Portuguese and Greek. The 'Mediterranean diet pyramid: a lifestyle for today' summarises and updates the traditional MD of those areas of the Mediterranean basin that have evolved with modernization [Bach-Faig 2010].

## **BARRIERS AND OPPORTUNITIES FOR HEALTHY EATING**

Many current approaches to improving nutrition – e.g., clinical counseling, food labels, menu labeling, dietary guidelines – arise from an implicit assumption that dietary habits are a function of individual choice. In reality, multiple complex factors influence dietary choice (Figure 3). Even at the individual level, dietary habits are determined not simply by personal preference but also by familial norms, education, income, nutritional and cooking knowledge and skills, and health status [Brug 2008].

Additional relevant psychological factors include attitudes toward food and health, incentives, motivation, and values.

Other lifestyle behaviors such as television watching and sleep also influence patterns of food consumption [Epstein 2008].

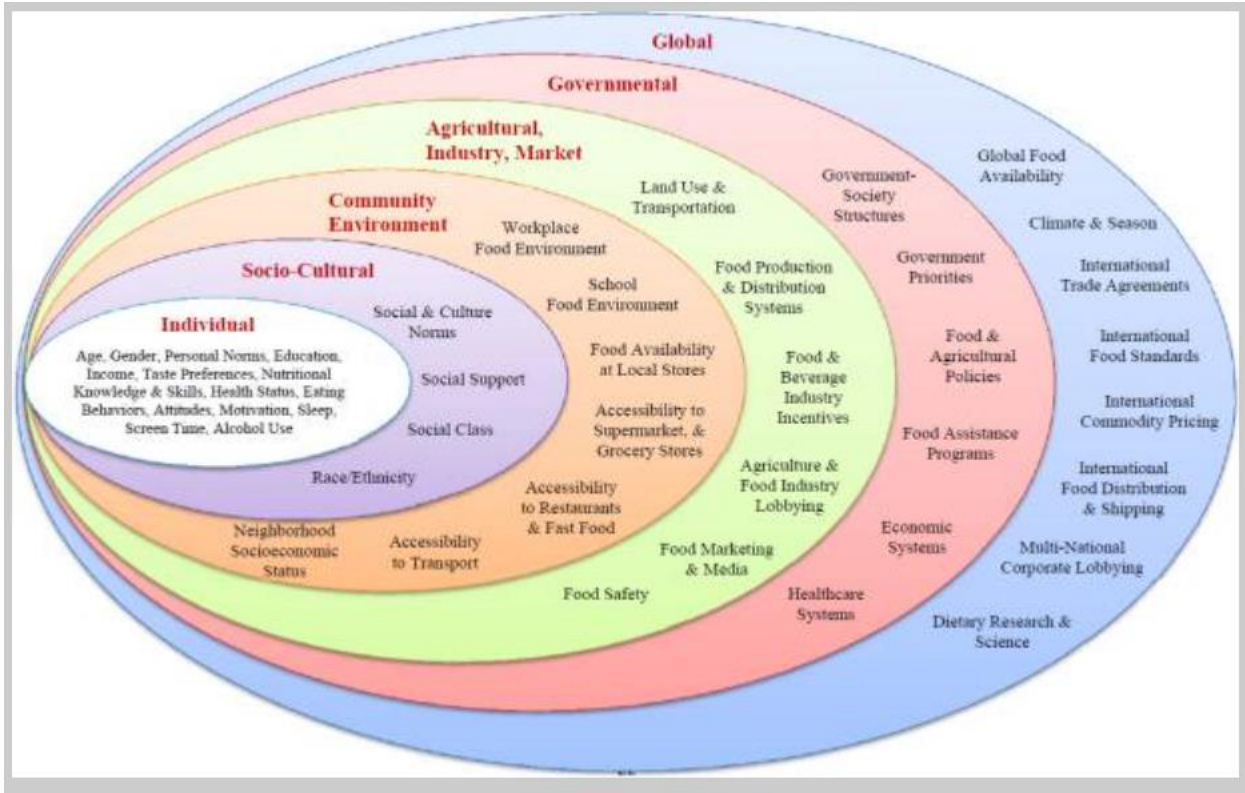
Sociocultural determinants include cultural norms, social pressures, social class, social networks, and race/ethnicity [Brug J 2008].

Environmental influences include neighborhood accessibility (e.g., food availability, cost, convenience) and climate. Each of these individual, environmental, and sociocultural determinants is shaped by, and in turn shapes, much broader drivers of food choice such as agricultural policy and production practices, food industry formulations and marketing, national and international trade agreements, other market forces, and agricultural policies. These complex determinants each represent a potential barrier, but also a promising lever and opportunity, for encouraging healthful diets. The observed diversity of diets within and across individuals, generations, cultures, and populations further belies a particular biologic preference for food [Singh2015].

Even the brain's unconscious reward/craving (“addiction”) centers are plastic and can be trained to respond to healthful rather than unhealthful [Deckersbach 2014].

Furthermore, for the food industry, the success or failure of specific products has often depended not on differences in contents of fat, sugar, or salt, but on the prowess and power of their convenience, packaging, marketing, and promotion [Mozaffarian2013].

Undoubtedly, taste plays a role in consumer choice, but so do availability, price, packaging, marketing, convenience, and culturally-driven perceptions of norms, status, and prestige. Each of these levers are powerful and can be used to influence selection of healthier foods.



Yamey G, ed. The Handbook of Global Health Policy. Wiley-Blackwell, San Francisco, 2014

## **PREVENTIVE MEDICINE AND HEALTH PROMOTION**

Considering the scientific evidences of literature on the important health consequences deriving from modifiable lifestyles, it is necessary to consider the need to actively intervene on these aspects.

Preventive Medicine, by enhancing the factors useful to health and the removal or correction of causes and states of predisposition and/or risk to the disease, cooperates to achieve a state of complete physical, mental and social well-being of the individual and the community.

At the same time, it contributes to decrease the costs of the health services, reducing disability and increasing work capacity. In order to achieve this goal, Health Promotion is an effective tool expressly aimed at promoting, modifying or eliminating behaviors capable of influencing the health conditions of individuals and of the population.

## **SCHOOL AND UNIVERSITY BASED PROGRAMS**

School and University-based programs include the roles of nutrition and physical activity in maintaining physical and mental health. School and University food services should provide healthy meals, both because they directly affect health and because they provide a special opportunity to teach by example. In many countries, school-based physical education remains a significant source of physical activity for young people. Maintaining these programs should be a high priority.

## **WORKSITE INTERVENTIONS**

Worksite interventions can efficiently include a wide variety of health promotion activities because workers spend a large portion of their waking hours and eat a large percentage of their food there. Interventions can include educating employees; screening them for behavioral risk factors; offering incentive programs to walk, ride a bicycle, or take public transportation to work; offering exercise programs during breaks or after work; improving the physical environment to promote activity; and

providing healthier foods in cafeterias. Worksite health promotion can result in a positive return on investment through lower health costs and fewer sick days.

## **UNIVERSITY EMPLOYEES**

Settings such as the workplace including the university, in particular, have been established as one of the priority settings for health promotion into the 21st century, as they can reach a great range of people of diverse backgrounds. Therefore, the proposed project examined university employees' and students' health and well-being, with the overall aim to improve and promote health.

## **YOUTH POPULATION AND UNIVERSITY STUDENTS**

The health of the European youth population is a critical and important aspect for Europe's sustainability and prosperity. A healthy population may result in substantial benefits in terms of public health, productivity and social development [WHO 2012]. It is of immense importance to encourage young people, such as University students to adopt healthy lifestyles.

The University environment, in particular, can play a crucial role in determining the behavior of young people. They generally spend a great amount of time at University contexts. Therefore, this setting seems to be an ideal place for nutrition, smoking, physical activity and alcohol use prevention. University-based prevention programs can have several short and long-term benefits. Among others, these include improved student health, an increased social awareness about the links between alcohol consumption, cigarette smoking diet and health, and finally, in the long-term, reduced healthcare costs

## OBJECTIVES

The project follows two main objectives:

1. To assess the overall health status of students and staff at the “Sapienza” University of Rome
2. To identify the need for the provision of university health services.

The focus of this project is on employees of the Faculty in Medicine and on students.

About 60% of these students left their families’ home and city.

Not rarely they deal with many difficulties especially due to the independent management of their own health (hence the loss of contact with their family physician). Often these subjects begin with unhealthy lifestyle habits that act as a source of stress negatively influencing their academic achievement on health and quality of life.

The overall strategic aim of this project is to develop and improve health resources in at the Sapienza University and to ensure good health and well-being, which may be achieved through the combination of two components:

- Improving the working and learning environment
- Promoting active participation in health promotion and prevention strategies

The specific aims of the present study were:

- To evaluate behaviors respect to lifestyles among the University employees and students;
- To examine the prevalence of adherents to a healthy diet (MD), smokers, sedentary lifestyles, alcohol drinking.
- To examine the prevalence of some pathologies such as hypertension, diabetes.
- To identify possible factors associated with unhealthy lifestyles such as tobacco smoking status, unhealthy diet and alcohol drinking among this population.



## MATERIALS AND METHODS

This project is allocated into two categories, namely employees and student's health and is be divided into three phases:

### *Phase 1: A Cross-sectional study on employee's and student's health status*

The first part of the project followed a cross-sectional design. In order to identify areas of health-promotion and prevention, employee and student health were assessed through a self-administered questionnaire. This is an important step of the project as it will low for target-group oriented prevention and promotion strategies to be developed. Both groups participated in survey based on existing and validated instruments, and consisted of the following sections:

- a) Socio-demographic factors;
- b) Food Frequency Questionnaire (FFQ);
- c) Questionnaire on alcohol consumption (audit c);
- d) Questionnaire for the evaluation of physical activity (IPAQ);
- e) Questionnaire on smoking habit and tobacco consumption (e.g. Fagerström Test);
- f) Questionnaire on the health related quality of life (SF-12);

The survey was conducted between 2017 and 2019 and was carried out in a Consecutive Sample of employees and students, consisting in 760 of a total sample (271 students of the Medicine Faculty and 489 employees).

Data collection was carried out through a questionnaire created ad hoc for the survey. It was distributed in the Preventive Medicine Centre during the occupational medicine control visit.

All 760 (100%) answered to the questionnaire, without any refused to participate.

The study was approved by Ethics Committee.

The questionnaires were administered mainly with close-ended type of questions with more response option (except for some answers as age, city of residence and some others) in voluntary way.

#### *Socio-demographic*

The following information of socio-demographic collected: Gender, age, marital status, educational level, profession, and place of residence (e.g. city and country).

#### *Alcohol consumption*

Alcohol consumption was assessed using the Audit-C questionnaire, consisting of the first three questions, measuring the amount and frequency of a person's drinking habit. Participants can be distinguished low risk and high-risk drinkers (e.g. harmful, hazardous, or likely dependent).

#### *Physical Activity*

Physical activity levels were measured using the IPQA (short-form), a valid and reliable tool, consisting of seven questions.

#### *Health-related quality of life*

To measure employee's quality of life, the SF-12 (Short Form-12 Health Survey) questionnaires, a 12-item questionnaire was used to assess generic health outcomes. Û

#### *Smoking habit and tobacco consumption*

For the assessment of exposure to cigarette smoke participants was for instance be asked "Do you smoke", "How many cigarettes a day do you smoke". Those who smoke was also asked to fill out the

Fagerström Test for Nicotine Dependence, a standard instrument for assessing the intensity of physical addiction to nicotine.

It was created an ad hoc website dedicated to these issues. It could be visualized on the following link:

<https://dspmi.uniroma1.it/strutture/progetto-preveniamo>

### **Target population:**

The research project was focused on the following target population:

- University employees: All staff currently employed at the “Sapienza” University, including teachers, technicians and librarians and administrative staff.
- University students: All students enrolled at the “Sapienza” University belonging to the Medicine Faculty.

### **Statistical analysis**

Data were analyzed with the software SPSS 23.0 for Windows.

Descriptive analyses were performed using frequencies, percentages, frequency tables for categorical variables and means  $\pm$  standard deviation (SD) at 95% confidence intervals (95% CI) for quantitative variables.

For the univariate analysis, the chi-square test was performed to evaluate differences for categorical variables.

A logistic regression model was used to identify possible factors associated with healthy lifestyle that is “*Following an healthy diet*”. Moreover, gender and age, as possible confounders, were included into the regression model such as some other variables (smoking habits and physical activity) that may have

affected the outcome variable. Before the analysis all variables were transformed into binary ones. Results were expressed as Odds Ratio (OR) with 95% CI and the p-value.

The approach to the regression model was carried out using the procedure “Backward stepwise (Wald)”; “the goodness of fit” of the regression model was assessed using the Hosmer-Lemeshow test [Hosmer & Lemeshow 1989]. The level of significance was set at  $p < 0.05$ .

### **Outcome measures**

The association between determinants and the outcome variable “adherence to the MD” was analyzed using the binary regression model, where those who did not adhere to the MD resulted in a score  $< 6.99$  vs those who were adherent to the MD pattern that obtained a MD score  $>7$ . The outcome measures were declared one by one in the binary logistic regression analysis.

### **Dietary assessment**

The usual dietary habits of the participants, over the year preceding enrolment, were assessed with the use of a food-frequency questionnaire (FFQ), which included about 12 food groups that are commonly consumed: cereals, legumes, vegetables, fruits, dairy products, white meat, red meat, fish, eggs, processed meats (such as ham), extra virgin olive oil, sweets.

For each of the items, respondents were asked to report their monthly, weekly, or daily average frequency of consumption in the last 6-12 months. The frequencies of consumption of the food items were reported on an incremental scale with nine levels (never; more than 2 times a week; 2 times a week; less than 2 times a week; 1-2 times a day; 3 times a day; more than 3 times a day). (CIISCAM). A dietary pyramid developed by CIISCAM (Inter-University Centre for International Studies on Mediterranean Food Cultures) in collaboration with former INRAN (National Institute for Food and Nutrition Research) -

now CREA (Research Centre on Foods and Nutrition) - was used to describe the Mediterranean dietary pattern.

The MD has been described by the following characteristics: an abundance of plant foods (fruits, vegetables, breads, other forms of cereals, potatoes, beans, nuts, and seeds); minimally processed, seasonally fresh, and locally grown foods; fresh fruit as the typical daily dessert, with sweets containing concentrated sugars or honey consumed only a few times per week; olive oil as the main source of fat; dairy products (principally cheese and yoghurt) only in low-to-moderate amounts; red meat in low amounts; and wine, usually red wine, in low-to moderate amounts, normally during meals.

### **The MD score**

Adherence to the MD was appraised according to the score such as that created by Trichopoulou et al. [Bach-Faig 2011]. A composite Mediterranean diet score was calculated for each participant on the basis of frequency of foods consumption of the main food groups typical of the Mediterranean diet, where those denoting a positive aspect with regard to the Mediterranean diet are assigned a value of +1 and those with a negative aspect a value of 0 [Bach-Faig 2011; Bach 2006].

High MD scores are characterized by high intakes of vegetables, legumes, fruits and nuts, cereals, fish, and olive oil and relatively low intakes of dairy products and meat. The total MD score ranged from 0 (minimal adherence to the traditional MD) to 12 (maximal adherence). Values of 0 or 1 were assigned to each indicated components: people whose consumption of presumed beneficial components (vegetables, legumes, fruits, cereals, fish) was below the recommended frequency consumption were assigned a value of 0, and a value of 1 otherwise. People whose consumption of presumed detrimental components (meat and dairy products) was below the recommended frequency consumption were assigned a value of 1, and a value of 0 otherwise. This MD score can take a value from 0 (minimal adherence) to 12 (maximal

adherence). Higher values of this diet score indicate a greater adherence to the MD, whereas lower values indicate adherence to a Westernized diet.

Adherence to the MD was categorized in a binary way as low (score 0–6.99), or high (score 7–12).

### ***Phase 2: Development of workplace health promotion strategies***

Based on the results of the first part target-oriented workplace and university health promotion efforts will be developed. These could be implemented at three functional levels, including:

Level I: Awareness programs such as newsletters and educational classes that may or may not directly improve individual health or influence behavioral change.

Level II: Lifestyle modification programs that are available to employees and students on an ongoing basis

Level III: The creation of an environment that assists employees in sustaining healthy lifestyles and behavior

### ***Phase 3: Monitoring and evaluation***

Phase 3 will involve the evaluation and monitoring of the project. Evaluation and monitoring is an important in ensuring the ongoing development of the project as well as safeguarding that goals, objectives and strategies are being met. Evaluation will take place through questionnaires.

**Here, it will be introduced results concerning dietary habits and lifestyle among University students and employees of “Sapienza” University of Rome, acquiring information on eating habits particularly in relation to the score of adherence to the MD pattern.**

## **RESULTS**

### **Socio-demographic characteristics**

The study was attended by 272 students and 488 employees.

Of the employees, most of the sample consisted in teaching staff (n 223; 29.3%) and administrative staff (n. 157; 20.7%) and librarians (n. 14; 1,8%) and researchers (n.12; 1.6%). Other professional figures were custodians, technicals, press officer and others. All students belonged to the Medicine Faculty.

Stratified by gender there were 434 (57.1%) females and 326 (42.9%) males. A number of 365 (48%) were born in Rome and 395 (52%) were born in other cities.

Mean age of all participants was 43.6 years old (SD 16; range 20-75 years old).

The mean years of employment was 19.16 years (SD 11.27; range: 1-55): n 259 (34.1%) has been working in a range of 1-5 years, n. 247 (32.5%) in a range of 6-20 years and 254 (33.4%) >21 years.

### **Chronic diseases**

Of the total sample, n. 13 (1.7%) reported suffering diabetes, n. 91 (12.%) hypertension.

### **Other pathologies**

Of the sample, 124 (16.3%) reported suffering of gastrointestinal disorders and n. 8 (1.1%) of celiac disease.

## Physical activity levels

The level of physical activity was low. The sample answered as follow:

*“In the last 7 days, for how many days have you performed vigorous physical activities, such as lifting weights, heavy work in the garden, aerobic activities such as racing or high-speed cycling? No. of days a week”*

Answers	Frequency	Percent
0 days	399	52,5
1 day	120	15,8
2 days	120	15,8
3 days	64	8,4
4 days	27	3,6
5 days	16	2,1
6 days	9	1,2
7 days	5	,7
Total	760	100,0



*“In the last 7 days, for how many days you have performed MODERATE physical activities, such as transporting light weights, cycling at a regular speed, activities in the gym, work in the garden, prolonged physical work at home”*

Answers	Frequency	Percent
0	161	21,2
1	166	21,8
2	161	21,2
3	113	14,9
4	51	6,7
5	41	5,4
6	18	2,4
7	49	6,4
Total	760	100,0

*“In the last 7 days, how many days did you walk for at least 10 minutes at a time? Consider all the walks made, like from home to work, to move from one place to another, and every other walk”*

Answers	Frequency	Percent
0	20	2,6
1	23	3,0
2	55	7,2
3	77	10,1
4	66	8,7
5	88	11,6
6	82	10,8
7	349	45,9
Total	760	100,0

### State of health and physical and mental well-being

Concerning wellbeing, in general the sample have not a really excellent physical and mental health.

The follows were some answers:

*In general you would say that your health is:*

Answers	Frequency	Percent
Excellent	42	5,5
Very good	226	29,7
Good	381	50,1
Not very good	101	13,3
Poor	10	1,3
Total	760	100,0

*Your performance was less than you would have liked*

Answers	Frequency	Percent
Yes	229	30,1
No	531	69,9
Total	760	100,0

*In the last four weeks, how long have your physical health or emotional state interfered in your social activities, with your family, with friends?*

Answers	Frequency	Percent
Almost always	19	2,5
A lot of time	49	6,4
Part of the time	223	29,3
Almost never	302	39,7
Never	167	22,0
Total	760	100,0

### **Smoking habits**

Smoking habits resulted widespread in the “Sapienza” sample, about 23.1% declared to smoke cigarettes and 421 (55.4%) of the sample have never smoked. Of the sample, 8.2% smoke cigarettes sometimes, only on special occasions or on the weekend. 19.3 stopped more than six months ago and 2.2% stopped less than 6 months ago.

A number of 305 (40.1%) reported to have smoked at least 100 cigarettes (5 packets) in their lifetime. Concerning current smokers, 14.9% of the sample light the first cigarette 30 minutes after waking up.

### **Alcohol drinking**

Most of the sample consumes alcoholic beverages 2-4 times a week (n. 256; 33.7%), n. 121 (27.9%) less than one a month, n. 135 (17.8%) reported never drinking and n. 107 (14.1%) 2-3 times a week, with an average of 1 or 2 glasses at a time for n. 534 (70%) of the sample, 3 or 4 for n. 75 (9.9%) and 5 or 6 for n. 10 (1.3%) of the sample.

For n. 5 (0.7%) happened to drink more than six glasses once a week, for n.151 (19.9%) once a month, for n. 29 (3.8%) just once a month in average.

As follow, some frequency of drinking:

Answers	Red wine		White wine		Beer	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
1-2 times a day	25	3,3	13	1,7	7	,9
2 times a week	59	7,8	51	6,7	49	6,4
never	331	43,6	337	44,3	310	40,8
less than 2 times a week	295	38,8	317	41,7	355	46,7
more than 2 times a week	50	6,6	42	5,5	38	5,0
Total	760	100,0	760	100,0	1	,1

### **Anthropometric indexes**

Abdominal circumference of the sample was 88,4 cm for the total sample (SD 13 cm). Stratified by gender, a mean of 83.4 cm (SD 11.4 cm; range: 67-126 cm) and 95 cm for males (SD 11.51; range: 70-149 cm).

BMI for females was 22.9 in mean (SD 4.12; range: 16.26-57.14) and males was 25.44 in mean (SD 4; range: 18.31-59.52).

Stratifying BMI for employees and students, resulted that 33.2% of the students sample were in a normal weight (BMI=18.50-24.99) vs 26.1% of the employees; 18.4% of the students were in overweight (BMI=25-29.99) vs 7% of the employees and 5.2% of the students vs 0.9% were in obesity range (BMI >30) of students were in a

From the start of University employment, the body weight was changed for 306 (40.3%) of the sample and the dietary habits were changed for 44.2 of the sample. For n. 130 (17.1 %) the weight gain was related to the employment.

## Eating habits

The consumption of the food groups was as follow:

### Milk and yoghurt

Answers	Frequency	Percent
1-2 times a day	311	40,9
2 times a week	71	9,3
3 times a day	10	1,3
never	89	11,7
less than 2 times a week	109	14,3
more than 2 times a week	162	21,3
more than 3 times a day	8	1,1
Total	760	100,0

### Cheese and dairy products

Answers	Frequency	Percent
1-2 times a day	58	7,6
2 times a week	219	28,8
3 times a day	2	,3
never	33	4,3
less than 2 times a week	167	22,0
more than 2 times a week	280	36,8
more than 3 times a day	1	,1
Total	760	100,0

**Legumes (lentils, peas, beans, chickpeas, etc)**

Answers	Frequency	Percent
1-2 times a day	20	2,6
2 times a week	229	30,1
3 times a day	1	,1
never	19	2,5
less than 2 times a week	302	39,7
more than 2 times a week	187	24,6
more than 3 times a day	2	,3
Total	760	100,0

**Vegetables and vegetables (lettuce, spinach, broccoli, chicory, carrots, etc.)**

Answers	Frequency	Percent
1-2 times a day	449	59,1
2 times a week	42	5,5
3 times a day	39	5,1
never	3	,4
less than 2 times a week	24	3,2
more than 2 times a week	175	23,0
more than 3 times a day	28	3,7
Total	760	100,0

**Fruit (oranges, apples, pears, cherries, peaches, bananas, etc.)**

Answers	Frequency	Percent
1-2 times a day	429	56,4
2 times a week	41	5,4
3 times a day	68	8,9
never	10	1,3
less than 2 times a week	47	6,2
more than 2 times a week	140	18,4
more than 3 times a day	25	3,3
Total	760	100,0

**White meat (chicken, turkey, rabbit, etc.)**

Answers	Frequency	Percent
1-2 times a day	47	6,2
2 times a week	259	34,1
3 times a day	1	,1
never	37	4,9
less than 2 times a week	189	24,9
more than 2 times a week	226	29,7
more than 3 times a day	1	,1
Total	760	100,0

**Red meat (veal, beef, beef, sausage, etc.)**

Answers	Frequency	Percent
1-2 times a day	18	2,4
2 times a week	187	24,6
3 times a day	78	10,3
never	379	49,9
less than 2 times a week	97	12,8
more than 2 times a week	1	,1
more than 3 times a day	760	100,0

**Cold cuts (cooked, raw, bresaola, turkey breast, salami, mortadella, etc.)**

Answers	Frequency	Percent
1-2 times a day	29	3,8
2 times a week	196	25,8
3 times a day	2	,3
never	61	8,0
less than 2 times a week	283	37,2
more than 2 times a week	188	24,7
more than 3 times a day	1	,1
Total	760	100,0



## Eggs

Answers	Frequency	Percent
1-2 times a day	3	,4
2 times a week	195	25,7
3 times a day	1	,1
never	36	4,7
less than 2 times a week	475	62,5
more than 2 times a week	49	6,4
more than 3 times a day	1	,1
Total	760	100,0

## Fish (cod, sea bass, salmon, tuna, etc.)

Answers	Frequency	Percent
1-2 times a day	7	,9
2 times a week	250	32,9
never	39	5,1
less than 2 times a week	322	42,4
more than 2 times a week	141	18,6
more than 3 times a day	1	,1
Total	760	100,0

**Desserts (biscuits, snacks, various sweets, chocolates)**

Answers	Frequency	Percent
1-2 times a day	187	24,6
2 times a week	106	13,9
3 times a day	10	1,3
never	53	7,0
less than 2 times a week	208	27,4
more than 2 times a week	191	25,1
more than 3 times a day	5	,7
Total	760	100,0

**Extra virgin olive oil**

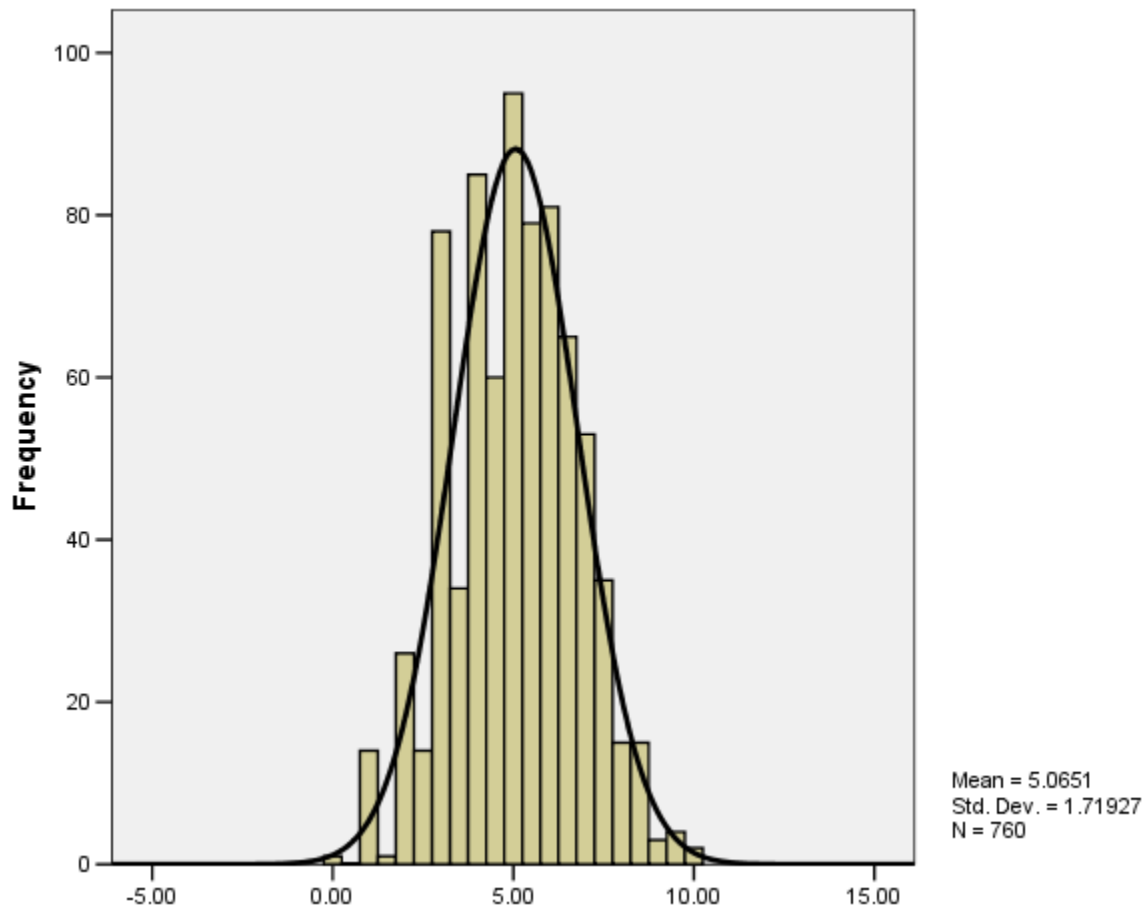
Answers	Frequency	Percent
1-2 times a day	525	69,1
2 times a week	14	1,8
3 times a day	59	7,8
never	2	,3
less than 2 times a week	18	2,4
more than 2 times a week	121	15,9
more than 3 times a day	21	2,8
Total	760	100,0

### **Score of Adherence to the MD**

We were able to calculate the MD score on all 760 University people (100% of the sample). The mean score was 5 (SD 1.71; range:0-10). 632 (83.2%) showed a score < 6.99, indicating that the majority of the students/employees does not respect the rules of the MD; on the contrary, only 128 (16.8%) exceeded a score of 7, and therefore adhered in varying degrees. In detail, no one reached the maximum score of 12 and no one of 11. The maximum score gained was 10 for only 2 people (0.3%). (Figure 3).

The mean score reached by males was 5.1 (total participants n. 434) and 4.9 reached by females (total participants n. 326). No differences were found for gender (a score < 6.99 was reached for 47.5% of females group and for 35.7% of males group; a score >7 was reached by 9.6% in the females group and by 7.2% in the males group) (p=0.530).

The mean score reached by employees (mean MD score: 5.2; DS: 1.6) was similar to that reached by students (mean MD score: 4.8; DS: 1.7).



### **Binary Logistic regression model for the outcome “adhere to the MD”**

Values resulted from the analysis, in the association with the outcome “adherence to the MD”, were statistically significant in relation to the age: the likelihood of adhering healthy eating habits increase in older people (OR = 1.03;  $p < 0.001$ ). To be an employee could reduce the likelihood of adhering to MD dietary pattern (OR = 0.59;  $p = 0.053$ ), at the limits of statistically significant values.

Hosmer-Lemeshow Test was 5.956. (Table 2).

**Table 2 Binary logistic regression analysis**

Dependent variable: “*Adhere to the MD model*” . Covariates entered in the model: “Sex”, “Età”, “Smoker”, “wine drinker”, “alcohol drinker”, “vigorous physical activity”. Method: Backward Stepwise (Wald)

Covariates	1' phase			6' phase		
	ADJUSTED OR	Sign. (P)	CI 95%	ADJUSTED OR	Sign. (P)	CI 95%
<i>Smoker (vs no)</i>	1.08	0.708	0.728-1.596			
<i>Employee (vs student)</i>	0.59	0.057	0.348-1.016	0.59	0.053	0.345-1.006
<i>Vigorous physical activity (vs sedentary)</i>	1.19	0.385	0.801-1.775			
<i>Age: older (vs yonger)</i>	1.04	<0.001*	1.018-1.054	1.03	<0.001*	1.016-1.050
<i>Alcohol drinker (vs no)</i>	1.2	0.430	0.767-1.864			
<i>Female (vs male)</i>	1.17	0.450	0.781-1.747			
<i>Red/white drinker (vs no)</i>	1.12	0.593	0.736-1.710			
Hosmer -Lemeshow test= 5.956						

\*statistically significant

## CONSIDERATIONS AND CONCLUSIONS

Due to the global epidemic of several chronic diseases, which, among others, are caused by obesity, the adoption of healthy eating patterns has been at the center of interest in many studies.

Dietary habits influence a myriad of cardiometabolic risk factors, including blood pressure, glucose-insulin homeostasis, lipoprotein concentrations and function, inflammation, endothelial health, hepatic function, adipocyte metabolism, cardiac function, metabolic expenditure, and pathways of weight regulation, visceral adiposity, and the microbiome. Based on these diverse effects, diet quality is more relevant than quantity, and the primary emphasis should be cardiovascular and metabolic health, not simply body weight or obesity.

The MD is a documented model of healthy diet that always represented the dietary pattern of many populations from the Mediterranean areas.

The MD is characterized by a nutritional model that has remained constant over time and space, consisting mainly in an elevated consumption of fruits, nuts and vegetables, a moderate-to- high consumption of fish and seafood, the use of olive oil as the main source of fat, a low intake of red meat and dairy products and a low-to-moderate amount of red wine during meals, always respecting beliefs and traditions of each community.

Our results clearly show how the “Sapienza” University population follow an unhealthy diet leaving the frequency consumption of typical foods of the MD and replaced them with those foods typical of the Western world, based mainly on sweet and red meat, devoid of the protective effects against cardiovascular and metabolic diseases. In our sample a percentage of 24,6% eat desserts (biscuits, snacks, various sweets, chocolates) and in the same percentage eat red meat (veal, beef, beef, sausage, etc.) 2 times a week.

To the same conclusions came several observational studies investigating the eating habits of Italian population, so that health promotion is becoming a priority [Saulle 2016].

In fact, despite its health benefits, adherence to MDP has declined in the last decades.

Indeed, da Silva et al. [Da Silva R 2009] found a decrease in the level of adherence to MDP in the period 2000–2003 compared to 1961–1965. Bonaccio et al. [Bonaccio 2014] recorded a deep decline in adherence to MD, the prevalence falling from over 30% to 18% among subjects included in the Molisani study during the period 2005–2010.

Ecological studies have reported a substantial departure from MD all over Europe, but this is more evident in Mediterranean countries that have experienced a “westernization” process of food habits [Vareiro 2009].

Possible cause of this phenomenon could be the increasing prices of some of the major food items of the Mediterranean pyramid; this seems to have led people to give up this eating pattern in favour of less expensive products that allow people to save money, but that are unhealthy, energy-dense foods that typically have lower nutritional quality. Another cause could be an inadequate time to eat. Providing enough time for University people to choose meals and sit with friends/colleagues to enjoy them was among the top 10 factors identified by health professionals as important to the development of healthy eating behaviors.

Diet is one of the cornerstones of a healthy lifestyle, and it is sometimes characterized in university people by a lack of meals and essential foods, and by the intake of large amounts of sugar, and saturated fats [Papadaki 2007].

Concerning students, these facets may be influenced by the place in which the student lives (e.g., shared flat, halls of residence), with moving away from home to live in the city of the university being a potentially important factor [Arnett 2014; Harford 2002; Martínez-González, 2014].

It should be noted that this is not the case for all students, with one study of students enrolled in nursing courses showing a higher adherence to the MD [Torres-Luque, 2014; Rodrigo 2014]. Studying subjects

related to nutrition may, therefore, be a protective factor for some of the previously identified negative habits. It could explain our case, where students, attending the Faculty of Medicine, have a higher likelihood to adhere to healthy dietary habits comparing to employees of “Sapienza” and, going forward with the years of study, they adhere more. It is an important result because these students, attending the Faculty of Medicine, will be the practitioners who will play an important role both as advisers and role models in the specific field of health promotion, preventive lifestyle and healthcare [Arnett 2014; Cervera 2013].

There is a problem with the employment in “Sapienza”, where the classic Mediterranean dietary model is becoming a kind of “endangered species”, and research is needed to define the ways in which such traditional and healthful dietary patterns could be preserved and promoted.

In addition, several studies have shown that a worse adherence to the MD is associated with lower academic performance and subsequent negative academic self-concept and negative emotions, such as higher levels of stress and anxiety, and a subsequent negative emotional self-concept and health self-perception [Esteban-Cornejo, 2016; Mamplekou 2010].

In our sample, on their own health perception, people answered “excellent” only for 5.5%, “very good” for 29.7%, “good” for 50.1%, “not very good” for 13.3% and poor for 1.3%.

Interventions concerning environments and specific education about the healthy diet may be useful to recover dietary patterns as in the old eating tradition [Lopez 2009].

Food choices must be strongly supported by behavior change efforts, policy strategies, including those targeting economic incentives.

Benefits of the MD suggest that widespread adoption of this dietary strategy could have significant public health implications, being able to lead to the prevention of degenerative pathologies and to an improvement in life expectancy, a net gain in health and a reduction in total lifetime costs.



Multiple evidence-based strategies for improving dietary behaviors have now been identified, including at the individual (patient) level, in health systems, and in populations.

Integrated, multicomponent approaches that include all lifestyle behaviors (such as physical education, dietary habits, alcohol consumption, smoking habits) may be especially effective. In fact, as in our sample, University people often show unhealthy diet but also reduced levels of physical activity and greater engagement in sedentary behavior and the consumption of harmful substances such as alcohol. [Chacón-Cuberos, 2017].

Most of the sample consumes alcoholic beverages 2-4 times a week (n. 256; 33.7% and for n.151 (19.9%) was happened to drink more than six glasses once a month.

Based on these facts, it is imperative initiating appropriate programs of prevention and health promotion in the Universities and in particular a promotion of proper nutrition, especially designed on the basis of specific peculiarities emerged from this investigation.

## **Conclusions**

This study is a good starting point for carrying out larger study, with repeated health promotion interventions over time and long-term efficacy evaluation.

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## APPENDIX 1

### ORIGINAL QUESTIONNAIRES



Inserire il codice numerico che le è stato assegnato:

1. CODICE \_\_\_\_\_

2. Attualmente che attività lavorativa svolge in Sapienza

- Amministrativo
- Tecnico
- Docente
- Altro : .....

3. Da quanti anni è dipendente Sapienza (indicare numero anni ): .....

Indichi quali sono, tra le seguenti, le patologie di cui soffre.

- 4. Diabete  SI  NO
- 5. Ipertensione  SI  NO
- 6. Celiachia  SI  NO
- 7. Disturbi gastrointestinali  SI  NO

8. Da quando è dipendente Sapienza il suo peso è aumentato ?

- Si
- No

Se "Si": 9. Quando è stato assunto all'incirca quanto pesava? (indicare kg ) .....

10. Pensa che l'aumento del suo peso sia legato all'attività lavorativa?

- Assolutamente si
- Abbastanza
- Poco
- Per niente

11 . Da quando è dipendente Sapienza le sue abitudini alimentari sono cambiate?

- Assolutamente si
- Abbastanza
- Poco
- No

## QUESTIONARIO AUDIT C - Abitudini sul consumo di alcool

1) Con quale frequenza consumi bevande alcoliche?

- Mai
- Meno di 1 volta / 1 volta al mese
- 2-4 volte al mese
- 2-3 volte a settimana
- 4 o più volte a settimana

2) Nei giorni in cui beve, in media quanti bicchieri standard di bevande alcoliche consuma?

- 1 o 2
- 3 o 4
- 5 o 6
- Da 7 a 9
- 10 o più
- Non bevo

3) Con quale frequenza ti è capitato di bere 6 o più bicchieri di bevande alcoliche in un'unica occasione?

- mai
- meno di 1 volta al mese
- 1 volta al mese
- 1 volta alla settimana
- ogni giorno o quasi
- Non bevo

## CONSUMO ALIMENTI - Le sue abitudini alimentari

4) Latte e yogurt

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

5) Formaggi e latticini

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

6) Legumi ( lenticchie, piselli, fagioli, ceci, etc.)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

7) Cereali ( pane, pasta, fette biscottate, corn-flakes , riso, orzo farro)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

8) Verdure e ortaggi (lattuga, spinaci, broccoli, cicoria, carote, etc)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

9) Frutta

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

10) Carni bianche (pollo, tacchino, coniglio, etc )

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno



11) Carni rosse ( vitello, vitellone, manzo, maiale, etc)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

12) Affettati (cotto, crudo, bresaola ,fesa di tacchino, salame, mortadella, etc)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

13) Uova

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

14) Pesce

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

15) Vino (rosso)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

16) Vino (bianco)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

17) Birra

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

18) Superalcolici e cocktail

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

19) Dolci (biscotti, merendine, pastarelle, cioccolatini, torte, ecc.)

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

20) Olio extravergine di oliva

- mai
- meno di 2 volte a settimana
- 2 volte a settimana
- più di 2 volte a settimana
- 1-2 volte al giorno
- 3 volte al giorno
- più di 3 volte al giorno

## Questionario IPAQ

Il presente questionario è finalizzato a misurare il tipo e la quantità di attività fisica che fai normalmente tutti i giorni. Le domande vogliono definire per quanto tempo hai fatto dell'attività fisica negli ultimi 7 giorni. Includono domande riguardo alle attività che svolgi al lavoro, a casa, per spostarsi da un posto all'altro, e infine durante il tuo tempo libero.

Nel rispondere alle domande tenga in considerazione i seguenti criteri :

- Per **INTENSA** attività fisica si intende una attività che richiede uno sforzo fisico elevato e che la costringe a respirare con un ritmo molto più elevato del normale .

- Per **MODERATA** attività si intende una attività che richiede uno sforzo fisico moderato e che la costringe a respirare con un ritmo solo moderatamente più elevato del normale .

### ATTIVITA' VIGOROSE

1a) Negli ultimi 7 giorni, per quanti giorni ha compiuto attività fisiche VIGOROSE, come ad esempio sollevamento di pesi, lavori pesanti in giardino, attività aerobiche come corse o giri in bicicletta a velocità elevata? *(cerchiare il N. di giorni a settimana: per es. tutti i giorni, scelga 7)*

0   1   2   3   4   5   6   7

1b) Normalmente in uno di questi giorni in cui compie attività fisiche INTENSE per quanto tempo, le svolge? *Indicare numero di ore. (Per es. mezz'ora scriva 0,5 ; 15 minuti =0,25; se non ne fa mai metta 0)*

.....

### ATTIVITA' MODERATE

2a) Negli ultimi 7 giorni , per quanti giorni ha compiuto attività fisiche MODERATE, come ad esempio trasporto di pesi leggeri, giri in bicicletta ad una velocità regolare, attività in palestra, lavoro in giardino, lavoro fisico prolungato in casa .... Non consideri le camminate. *(cerchiare il N. di giorni a settimana).*

0   1   2   3   4   5   6   7

2b) Normalmente in uno di questi giorni in cui compie attività fisiche MODERATE per quanto tempo in totale le svolge? *Indicare numero di ore.*

.....

CAMMINARE

3a) Negli ultimi 7 giorni, quanti giorni ha camminato per almeno 10 minuti di seguito? Consideri tutte le camminate compiute, come da casa al lavoro, per spostarsi da un posto ad un altro, ed ogni altra camminata che le è capitato di fare anche solo per piacere, esercizio o sport.  
(cerchiare il N. di giorni a settimana).

0 1 2 3 4 5 6 7

3b) Per quanto tempo in totale, normalmente in uno di questi giorni, lei ha camminato? *Indicare numero di ore*

.....

3c) A che passo lei ha prevalentemente camminato? Ha camminato a un:

- passo INTENSO, che la fa respirare ad un ritmo molto più elevato del normale .
- passo MODERATO, che la fa respirare ad un ritmo solo moderatamente più elevato del normale .
- passo LENTO, tale che non c'è stato nessun cambiamento nel suo ritmo di respiro.

SEDUTO

4a) Le ultime domande riguardano il tempo che lei ha trascorso seduto mentre era al lavoro, a casa, si recava al lavoro e durante il tempo libero . È compreso il tempo trascorso seduto ad una scrivania, visitando degli amici, per leggere, o si è seduto o disteso per guardare la televisione. Quanto tempo in totale lei ha trascorso seduto, durante un giorno lavorativo ?  
*Indicare N. di ore.*

.....

4b) ...e quanto tempo in totale ha trascorso seduto in un giorno non lavorativo? *Indicare N. di ore.*

.....

**QUESTIONARIO SF-12.** Questo questionario intende valutare cosa Lei pensa della Sua salute. Risponda a ciascuna domanda siglando la risposta. Se non si sente certo della risposta, scelga quella che comunque Le sembra migliore.

Q1) In generale direbbe che la Sua salute è:

Eccellente  Molto buona  Buona  Passabile  Scadente

LA SUA SALUTE LA LIMITA ATTUALMENTE NELLO SVOLGIMENTO DI UNA DELLE SEGUENTI ATTIVITÀ:

Q2) Attività di MODERATO impegno fisico, come spostare mobili, usare l'aspirapolvere, fare un giro in bicicletta:

Sì, mi limita parecchio  Sì, mi limita parzialmente  No, non mi limita per nulla.

Q3) SALIRE un piano di scale:

Sì, mi limita parecchio  Sì, mi limita parzialmente  No, non mi limita per nulla.

NELLE ULTIME 4 SETTIMANE, HA RISCONTRATO I SEGUENTI PROBLEMI SUL LAVORO O NELLE ALTRE ATTIVITÀ QUOTIDIANE, A CAUSA DELLA SUA SALUTE FISICA:

Q4) Ha reso meno di quanto avrebbe voluto:

SÌ  NO

Q5) Ha dovuto limitare alcuni tipi di lavoro o di altre attività:

SÌ  NO

NELLE ULTIME 4 SETTIMANE, HA RISCONTRATO I SEGUENTI PROBLEMI SUL LAVORO O NELLE ALTRE ATTIVITÀ QUOTIDIANE, A CAUSA DEL SUO STATO EMOTIVO (QUALE IL SENTIRSI DEPRESSO O ANSIOSO)?

Q6) Ha reso meno di quanto avrebbe voluto:

SÌ  NO

Q7) Ha avuto un calo di concentrazione sul lavoro o in altre attività:

SÌ  NO

Q8) Nelle ultime 4 settimane, in che misura il dolore L'ha ostacolata nel lavoro che svolge abitualmente (sia in casa che fuori)?

Per nulla  Molto poco  Un po'  Molto  Moltissimo

Q9) Per quanto tempo nelle ultime 4 settimane si è sentito calmo e sereno?

Sempre  Quasi sempre  Molto tempo  Una parte del tempo  Quasi mai  Mai

Q10) Per quanto tempo nelle ultime 4 settimane si è sentito pieno di energia?

Sempre  Quasi sempre  Molto tempo  Una parte del tempo  Quasi mai  Mai

Q11) Per quanto tempo nelle ultime 4 settimane si è sentito scoraggiato e triste ?

Sempre  Quasi sempre  Molto tempo  Una parte del tempo  Quasi mai  Mai

Q12) Nelle ultime 4 settimane, per quanto tempo la Sua salute fisica o il Suo stato emotivo hanno interferito nelle Sue attività sociali, in famiglia, con gli amici?

Sempre  Quasi sempre  Molto tempo  Una parte del tempo  Quasi mai  Mai

### ABITUDINI TABAGICHE

T1) Durante la scorsa settimana, è stato esposto a fumo passivo (per esempio vicino a un fumatore o stanze dove solitamente si fuma) per più di 30 minuti?

- SI       NO

T2) Ha fumato almeno 100 sigarette (5 pacchetti) nella Sua vita?

- SI       NO

T3) Quale delle seguenti affermazioni La descrive meglio:

- a) Fumo tutti i giorni  
 b) Fumo, ma non tutti i giorni  
 c) Ho smesso da meno di 6 mesi  
 d) Ho smesso da oltre 6 mesi  
 e) Non ho mai fumato

---

**Se risposto "e": FINITO IL QUESTIONARIO.**

---

**Se risposto "c" o "d". Parte per gli EX-FUMATORI:**

T4) A che età ha iniziato a fumare? .....

T5) A che età ha smesso di fumare (ultima volta se ha provato più volte)? .....

T6) Quante sigarette fumava al giorno mediamente? .....

---

**Se risposto "a" o "b". Parte per i FUMATORI:**

T7) A che età ha iniziato a fumare? .....

#### TEST DI FAGERSTROM

F1) Quanto tempo dopo il risveglio accende la prima sigaretta?

- Entro 5 minuti  
 Dopo 6-30 minuti  
 Dopo 31-60 minuti  
 Dopo 60 minuti

F2) Trova difficile astenersi dal fumare nei luoghi dove è vietato?

- SI       NO

F3) A quale sigaretta farebbe più fatica a rinunciare?

- La prima del mattino  
 Qualsiasi

F4) Quante sigarette fuma al giorno?

- 10 o meno  
 11 a 20  
 21 a 30  
 31 o più

F5) Fuma con maggiore frequenza nelle prime ore dopo il risveglio che durante il resto della giornata?

- SI       NO

F6) Fuma quando è costretto a letto da qualche malattia intercorrente?

- SI       NO

**TEST DI MONDOR: Questionario sulla motivazione a smettere di fumare**

M1) Recentemente ha pensato di smettere di fumare?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M2) In precedenza ha provato a smettere di fumare e ci è riuscito per più di una settimana?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M3) Attualmente ha problemi sul lavoro/studio?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M4) Attualmente ha problemi sul piano familiare?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M5) Considera il fumo una schiavitù?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M6) Pratica dello sport/ha intenzione di praticarlo?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M7) Vorrebbe raggiungere una forma fisica migliore?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M8) Vorrebbe curare il suo aspetto fisico?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M9) È incinta/Mia moglie è incinta?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M10) Ha dei bambini piccoli?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M11) Attualmente è di buon umore?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M12) Di solito porta a termine quello che intraprende?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M13) È di temperamento calmo e disteso?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M14) Il suo peso è abitualmente stabile?	<input type="checkbox"/> SI	<input type="checkbox"/> NO
M15) Vuole migliorare la Sua qualità della vita?	<input type="checkbox"/> SI	<input type="checkbox"/> NO

**GRAZIE per la collaborazione!**

# In Salute In Sapienza

## **Informativa sulla privacy e consenso al trattamento dei dati personali**

### **NOTA INFORMATIVA**

Questo studio è promosso dal Dipartimento di Sanità Pubblica e Malattie Infettive e il Centro di Medicina Occupazionale dell' Università Sapienza di Roma . Per svolgere tale ricerca abbiamo bisogno della Sua collaborazione e disponibilità. Comunque, prima che Lei prenda la decisione di accettare o rifiutare di partecipare, legga con attenzione quanto segue.

#### *Finalità dello studio*

Lo studio, inserito nell' ambito della promozione della salute nei luoghi di lavoro, (WHP- Workplace health promotion ) ha come obiettivo generale quello di rilevare la situazione esistente nell'azienda che aderisce al programma riguardo i determinanti di salute e fattori di rischio. Affinché la WHP abbia successo, si rende necessaria un'azione congiunta azienda-lavoratori, che punti a promuovere - e quindi migliorare - la salute ed il benessere nei luoghi di lavoro.

#### *Cosa comporta la Sua partecipazione allo studio*

Nel caso Lei acconsentisse a partecipare Le sarà chiesto di firmare questo modulo di Consenso Informato e Le sarà somministrato un questionario a risposta chiusa che riguarderà : i Suoi consumi alimentari, la valutazione dell'attività fisica, le Sue abitudini tabagiche e alcoliche e la valutazione della qualità della vita salute correlata.

L'adesione a questo studio non comporta per Lei nessun onere finanziario.

#### *Cosa succede se decide di non partecipare allo studio*

La partecipazione allo studio è volontaria e Lei è libera di non partecipare e non subirà alcuna discriminazione.

### **Riservatezza dei dati personali**

Ai sensi del Decreto Legge N°196/03 (Art.7 e 13) relativo alla tutela della persona per il trattamento dei dati personali, la informiamo che i suoi dati personali verranno raccolti ed archiviati in modo adeguato e saranno utilizzati esclusivamente per scopi di ricerca scientifica. Lei ha diritto di sapere, se lo desidera, quali informazioni saranno archiviate ed in che modo.

L'accesso a tali dati sarà consentito solo a personale autorizzato e coinvolto nella ricerca. Il Comitato Etico di questo Istituto, potrà ispezionare l'archivio senza però poter risalire alla Sua personale identità.

Firmando il modulo di Consenso Informato autorizza l'accesso a tali dati.

I risultati della Ricerca a cui partecipa potranno essere oggetto di pubblicazione, ma la Sua identità rimarrà segreta.



### *Ulteriori informazioni*

Per qualsiasi informazione Lei potrà rivolgersi a:

- Dipartimento di Sanità Pubblica e Malattie Infettive, Università Sapienza di Roma:

Prof. Giuseppe La Torre: [giuseppe.latorre@uniroma1.it](mailto:giuseppe.latorre@uniroma1.it)

Il protocollo della ricerca che Le è stato proposto è stato redatto in conformità alle Norme di Buona Pratica Clinica della Unione Europea e alla revisione corrente della Dichiarazione di Helsinki ed è stato approvato dal Comitato Etico competente per questo Istituto, che opera al fine di assicurare la salvaguardia dei diritti, dell'integrità e del benessere dei soggetti coinvolti nelle sperimentazioni.

In caso di adesione al progetto, potrà chiedere in qualsiasi momento informazioni ulteriori sulla ricerca e sui progressi conseguiti.

Lei potrà inoltre accedere alla documentazione relativa alla ricerca in oggetto ed al parere espresso a riguardo dal Comitato Etico.

## **In Salute In Sapienza**

### **Consenso allo studio e al trattamento dei dati personali**

Letto e compreso quanto riportato nella nota informativa, in modo libero e volontario, con la presente:

accetto  non accetto

di partecipare al suddetto studio.

Acquisite le informazioni sul trattamento dei dati personali e sensibili, e con la presente,

autorizzo  non autorizzo

al trattamento dei miei dati personali, anche sensibili, per i fini indicati nella Nota Informativa.

Nome:

Cognome:

Luogo e data di nascita :

Data

Firma