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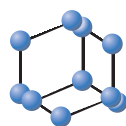
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REVIEW ARTICLE

BENTHAM
SCIENCE

Mediterranean Lifestyle: More Than a Diet, A Way of Living (and Thriving)

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Abstract: Although the Mediterranean Diet (MedDiet) may appear simple and locally inspired based on the provided definitions, mounting evidence reveals that adopting a dietary pattern aligned with MedDiet principles can yield numerous health benefits. Also, the MedDiet stands as the gold standard in preventive medicine, so it is not a simplistic diet centered around specific ingredients or cooking methods; instead, it emerges from a distinctive way of life (lifestyle) inherent to the Mediterranean region. This lifestyle encapsulates essential components of a balanced diet and life, including frugality and moderation in food consumption, the utilization of seasonal and traditional products, a focus on locally sourced, eco-friendly, and biodiverse items, personal engagement in culinary preparation, the emphasis on conviviality and social activities during meal consumption, regular engagement in physical activity, adequate hydration, and sufficient rest. In this review, we will establish the interconnections and links between the various aspects of the Mediterranean diet, how these pillars reflect the Mediterranean region's distinctive lifestyle, and how each element is a necessary part of the others. Finally, the seamless integration of social involvement, sufficient rest, regular physical exercise, and diet will be explored to provide a holistic view of the Mediterranean lifestyle and its inherent harmony.

Keywords: Mediterranean, longevity, diet, exercise, lifestyle, socialization, sleep.

1. INTRODUCTION

1.1. Mediterranean Diet (Definitions, Health Benefits)

From a holistic perspective, the Mediterranean diet encompasses a comprehensive set of skills, knowledge, rituals, symbols, and traditions that revolve around various aspects of food, from cultivation and harvesting to fishing, animal husbandry, conservation, processing, cooking, and most importantly, the sharing and communal consumption of food. Eating together holds profound cultural significance and is a foundation for the identity and continuity of communities across the Mediterranean basin. It serves as a moment of social exchange and communication, reinforcing and renewing family, group, or community identity [1]. From a practical standpoint, the traditional Mediterranean diet is characterized by certain key features: a substantial intake of plant-based foods, including fruits, vegetables, minimally refined bread and cereals, potatoes, beans, nuts, and seeds; a focus on minimally processed, seasonally fresh, and locally sourced foods; the common consumption of fresh fruits as a typical dessert, with sweets containing sugars or honey reserved for occasional indulgence; a notable reliance on olive

oil, especially virgin and extra-virgin varieties, as the primary source of dietary fat; moderate consumption of dairy products, primarily in the form of cheese and yogurt; an intake of up to four eggs per week; moderate consumption of fish and poultry; limited consumption of red meat; and the moderate enjoyment of wine, particularly red wine, in conjunction with meals [2]. The distinctive attributes of the Mediterranean diet, such as its relatively high intake of nuts, reliance on olive oil, and moderate consumption of wine, set it apart from other healthy dietary patterns. Nonetheless, at its core, the Mediterranean diet can be categorized as primarily plant-based, given its emphasis on a wide array of plant-derived foods [2].

Although the Mediterranean Diet (MedDiet) may appear simple and locally inspired based on the provided definitions, mounting evidence reveals that adopting a dietary pattern aligned with MedDiet principles can yield numerous health benefits. Studies have demonstrated that adhering to a Mediterranean-type diet can prevent cardiovascular diseases, both in Mediterranean and non-Mediterranean populations [3]. Meta-analyses of 14 prospective cohort studies have shown that individuals with high adherence to the MedDiet have a significantly lower risk of cardiovascular disease incidence and mortality [4]. Recent meta-analyses of 20 cohort studies have corroborated these findings [5]. Furthermore, the Nurses' Health Study (NHS), spanning a 20-year follow-up period, found that greater adherence to the MedDiet, as

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indicated by a higher MedDiet score, was associated with a lower risk of coronary heart disease (CHD) incidence and stroke in women [6]. These protective properties may be attributed, at least in part, to MedDiet's positive impact on cardiometabolic risk by reducing the risk of diabetes and metabolic-related conditions. An umbrella review of meta-analyses revealed that individuals following the MedDiet exhibited better anthropometric, metabolic, and inflammatory risk parameters than those on control diets. The MedDiet demonstrated potential effectiveness in reducing body weight, body mass index (BMI), and waist circumference, lowering total cholesterol, increasing HDL-cholesterol, and reducing inflammatory markers such as CRP and IL-6 [2]. The PREDIMED (PREvención con DIeta MEDiterránea) randomized nutrition intervention trial, designed for primary cardiovascular disease prevention, reported a remarkable 40% reduction in the incidence of type 2 diabetes (T2DM) in participants assigned to a Mediterranean diet supplemented with extra-virgin olive oil, compared to those assigned to a low-fat control diet [7]. Additionally, a meta-analysis of 50 prospective studies and randomized controlled trials (RCTs) suggested that adherence to the MedDiet was associated with a 50% reduction in the risk of metabolic syndrome (MetS) [8]. A study conducted on 1514 men and 1528 women residing in the province of Attica, Greece, further supported the inverse association between adherence to the MedDiet and the prevalence of T2DM [9]. Furthermore, in another RCT study (2022), coronary artery patients were divided into groups receiving either a Mediterranean or a low-fat diet and followed up for seven years. The findings indicated that, in terms of secondary prevention, the Mediterranean diet was more effective than the low-fat diet in preventing major cardiovascular events [10].

There is accumulating evidence supporting the potential role of the Mediterranean diet in the prevention of certain cancers. Notably, promising results regarding the prevention of (postmenopausal) breast cancer have emerged from the PREDIMED randomized trial. This trial estimated hazard ratios of 0.32 (95% CI, 0.13–0.79) for the Mediterranean diet with extra-virgin olive oil group and 0.59 (95% CI, 0.26–1.35) for the Mediterranean diet with the nuts group, as compared to the control diet group [11]. In addition, another epidemiologic study yielded similar findings, suggesting that the Mediterranean diet may modulate breast cancer risk through various mechanisms. These potential mechanisms include the reduction of endogenous estrogens, an increase in sex-hormone binding globulin levels, neutralization of free radicals, prevention of DNA damage, and the reduction of oxidative stress [12]. Taken together, these findings provide encouraging evidence of the potential benefits of the Mediterranean diet in the prevention of certain cancers, particularly (postmenopausal) breast cancer. However, further research and large-scale studies are warranted to validate and expand upon these observations and better elucidate the mechanisms involved in the protective effects of the Mediterranean diet against cancer [11].

Emerging research has shed light on a new and promising field, indicating that higher adherence to the Mediterranean diet is linked to a reduced risk of mental disorders, including cognitive decline and depression. Studies have consistently shown that high adherence to the MedDiet is associated with improved global cognition and episodic memory and re-

duced risks of cognitive impairment and neurodegenerative diseases [13]. In another study, higher adherence to the Mediterranean diet was correlated with less cognitive decline over a follow-up period of 4 to 26 years. Furthermore, a comprehensive meta-analysis encompassing 9 cohort studies with 34,168 participants reported that compared to those with the lowest adherence, individuals with the highest MedDiet scores had a lower risk of developing cognitive disorders [14]. The evidence supporting the beneficial impact of the Mediterranean diet on cognition outcomes is robust, with MedDiet being the most extensively researched dietary pattern in this context [15].

Polyphenols, a diverse group of phytochemicals commonly found in plant-based foods, have been extensively studied in recent years. Their potential antioxidant and anti-inflammatory properties make them subjects of interest, with potential implications for preventing metabolic conditions such as unhealthy obesity, type 2 diabetes, cardiovascular disease, and hypertension [16–18]. The Mediterranean diet is distinguished by its elevated consumption of phenolic compounds, prominently found in essential foods within this dietary pattern. These include extra-virgin olive oil, nuts, red wine, legumes, vegetables, fruits, and whole-grain cereals. In support of this, Ramón Estruch and colleagues observed a lower incidence of major cardiovascular events in individuals assigned to a Mediterranean diet supplemented with extra-virgin olive oil or nuts compared to those assigned to a reduced-fat diet, particularly among diabetic subjects at high risk of cardiovascular disease [18]. Phenolic compounds, commonly referred to as polyphenols, are now considered key contributors to the positive effects of the MedDiet [19–21]. Studies suggest that high dietary intake of flavonoids is inversely associated with excess weight and obesity [22], may lead to a reduction in oxidative damage and inflammation associated with obesity [23–26], may inhibit NADPH-induced oxidative stress [27], enhance the expression of glutathione peroxidase (GPX) and superoxide dismutase (SOD), and modulate the gene expression of numerous antioxidants and anti-inflammatory molecules in individuals with obesity [28, 29]. Furthermore, polyphenols may modulate cognition and neurodegenerative processes [30, 31], may exhibit neuroprotective effects in Alzheimer's disease [30], and serve as mood modulators and enhance neuronal well-being by elevating the levels of dopamine, serotonin, and noradrenaline in brain tissue [32, 33].

2. MOVING FROM THE MEDITERRANEAN DIET TO THE MEDITERRANEAN LIFESTYLE

The Mediterranean diet (MedDiet) stands as the gold standard in preventive medicine, likely owing to its harmonious combination of numerous elements with antioxidant and anti-inflammatory properties, surpassing the impact of any individual nutrient or food item. However, this dietary pattern holds greater importance than the mere sum of its components [34]. As previously defined, the MedDiet is not a simplistic diet centered around specific ingredients or cooking methods; instead, it emerges from a distinctive way of life (lifestyle) inherent to the Mediterranean region. This lifestyle encapsulates essential components of a balanced diet and life. In the following section, we will explore the evidence supporting the primary features of the Mediterranean

an Lifestyle. These fundamental elements include frugality and moderation in food consumption, the utilization of seasonal and traditional products, a focus on locally sourced, eco-friendly, and biodiverse items, personal engagement in culinary preparation, the emphasis on conviviality and social activities during meal consumption, regular engagement in physical activity, adequate hydration, and sufficient rest [35]. Recently, we have demonstrated that an active lifestyle and a proper diet [36, 37] can serve as a non-pharmaceutical and cost-effective approach to prevent non-communicable diseases [38, 39], geriatric syndromes [40-42], physical dysfunction [43], and enhance longevity [44], life expectancy [45], and overall well-being. The Mediterranean lifestyle goes beyond these factors, encompassing additional aspects (pillars) of life and emphasizing their interconnectedness.

3. FRUGALITY AND MODERATION - METPON APIETON (MODERATION IS BEST)

The Mediterranean dietary pattern encompasses a diverse range of food groups, and its healthfulness or potential risks lie in the variety of foods, culinary techniques, and appropriate frequencies and quantities integrated into the daily diet. Emphasizing a wide assortment of foods in the diet minimizes the risk of nutrient deficiencies. Studies have shown that higher adherence to the Mediterranean Diet (MedDiet) is associated with an improved nutrient profile, leading to a lower prevalence of inadequate micronutrient intakes than other dietary patterns [46]. A foundation of food items with the highest energy intake characterizes the MedDiet structure. In contrast, foods of animal origin and those rich in sugars and fats are consumed in moderation, with some reserved for special occasions. The importance of meals in the MedDiet is underscored, and the new representation emphasizes the significance of meal composition. A well-balanced meal composition should include fruits, vegetables, and cereals, complemented by other plant foods, dairy products, and protein sources, contributing in a lower proportion to daily energy intake. Portion sizes are governed by the principles of frugality and moderation, aiming to accommodate the energy needs of modern urban lifestyles while addressing the pressing public health challenge of obesity. Foods at the bottom of the pyramid should have larger serving sizes and be consumed more frequently as they provide satiety and moderate energy content. Conversely, foods at the upper levels, characterized by higher fat and simple sugar content, should be consumed in smaller amounts and less frequently. Furthermore, serving sizes should be adaptable to reflect local customs and autochthonous peculiarities, allowing MedDiet to align with the specific realities of each country and region [47].

4. SEASONAL AND TRADITIONAL PRODUCTS - HIGHER QUALITY, BETTER TASTE

The preference for seasonal, fresh, and minimally processed foods holds significant benefits, as it often maximizes the content of protective nutrients and beneficial substances in MedDiet. However, in the context of modern lifestyles, the consumption of fresh foods is increasingly being replaced by processed alternatives. Despite this trend, advancements in modern technology have enabled the preservation of nutrient content and the introduction of healthier

alternatives [48]. Notably, the nutritional value of fresh products can be influenced by several factors, including the growing methods employed, the specific variety chosen, the degree of ripeness at harvest, post-harvest handling, storage conditions, processing methods, and the distance of transportation [49]. The entire journey from seed to table has a direct impact on the nutrient content of food. Traditional knowledge and practices, developed through daily observations and interactions within rural communities, play a crucial role in transmitting production, procurement, and consumption techniques across generations [50]. This exchange of knowledge, deeply rooted in local traditions, fosters positive, responsible, sustainable, and healthy behaviors [51].

5. LOCAL, ECO-FRIENDLY, AND BIODIVERSE PRODUCTS - CARE OF THE ENVIRONMENT, BETTER HEALTH

The MedDiet should be recognized not merely as a collection of foods but as a comprehensive cultural model encompassing the entire food chain, from selecting and producing to processing and distributing foods to consumers [47]. Emphasizing its plant-centered nature, MedDiet contributes significantly to environmental preservation by reducing animal consumption and, in turn, production compared to Western dietary patterns. This reduced demand for animal-based products translates to decreased pressures on soil, water, and energy resources, making MedDiet a sustainable choice in our increasingly globalized world. The MedDiet is a prime example of a sustainable dietary pattern that places agricultural biodiversity at its core. The variety among and within species influences appearance and taste, impacting foods' micronutrient and phytochemical content [49]. Many endemic species and diverse landscapes, including cultivated areas, grasslands, forests, and ever-changing land use patterns, characterize the regions bordering the Mediterranean. This abundant agricultural biodiversity makes the Mediterranean area a global diversity hot spot. As a result, MedDiet thrives on the richness of agricultural biodiversity, providing a wide range of plant and animal food products from both wild and domesticated sources, aligning seamlessly with nutritional guidelines [52].

6. INVOLVEMENT IN CULINARY PREPARATION - THE SOCIAL DIMENSION

By promoting the cultivation of culinary activities and encouraging personal involvement in cooking, the Mediterranean Diet offers a diverse range of delicious and nutritious meals and fosters cultural continuity and the transmission of culinary traditions across generations. The development of culinary activities, encompassing cooking, crafting, and the organization of domestic space, plays a fundamental role in the social reproduction of each culture's identity [50]. Thus, allocating ample time and space for such culinary practices is emphasized, as they are pivotal in shaping everyday meals, celebrations, and religious festivals across diverse cultures [47]. Within the Mediterranean Diet (MedDiet) context, personal involvement in cooking practices emerges as a crucial lifestyle dimension accompanying this dietary pattern's consumption. This culinary behavior carries immense health-promoting potential, particularly among children. Studies

indicate that involving children in meal preparation enhances their vegetable intake and fosters positive feelings of valence and dominance [53]. It is worth noting that perceptions of cooking practices vary widely, ranging from cooking from scratch to including partly or fully pre-prepared meals and heating microwaveable packages. However, despite the prevalent use of convenience foods, there is a unanimous acknowledgment of the superiority of the cooking-from-scratch approach [54].

7. CONVIVIALITY AND SOCIAL CONNECTEDNESS FOR STRESS REDUCTION

Embracing the Mediterranean tradition of shared meals and focusing on togetherness enriches our dining experiences and cultivates a stronger sense of social connectedness and cultural continuity. Meal consumption holds a special significance for Mediterranean people, characterized by warmth, friendliness, and a sense of belonging, which epitomize the convivial nature of food intake and imbue it with social and cultural identity. The joy experienced during shared meals is paramount within the Mediterranean lifestyle (MedLife), setting it apart from other dietary patterns, regardless of their perceived healthfulness [55]. The emphasis on conviviality extends beyond nutritional aspects and plays a vital role in a meal's social and cultural value. Sharing food with family and friends around the table provides social support and nurtures a sense of community, providing opportunities for sharing news, solving problems, and reducing stress [56]. The pleasure derived from the conviviality of meals can positively influence food behaviors, impacting overall health status.

8. PHYSICAL ACTIVITY, MOVEMENT PATTERNS – THE MEDITERRANEAN WAY

Extensive evidence supports the profound impact of physical activity on the Mediterranean lifestyle. Physical activity is deeply integrated into various aspects of daily life, encompassing household chores, leisure activities, and occupational tasks. The Mediterranean diet embraces physical activity as essential to everyday routine, creating a culture where individuals naturally partake in active pursuits. Household activities like tending to chores and preparing meals involve physical exertion and contribute to overall energy expenditure. These activities promote physical fitness and foster community and shared responsibility within families [57]. Leisure time in Mediterranean cultures often revolves around physical activities that encourage movement and exercise, further reinforcing the value placed on an active lifestyle. Moreover, traditional occupations in the Mediterranean area, like shepherding, agricultural work, and hunting, not only play a crucial role in providing food and contributing to the creation of the Mediterranean diet but also inherently involve physical exertion, necessitating individuals to maintain an active way of life. These occupations demand strength, endurance, and agility, leading to regular physical activity becoming integral to work routines [58-60].

9. SLEEP PATTERN AND REST TIME - SIESTA

The movement patterns in the Mediterranean region hold significant importance, influenced by climate, environment,

and social factors, which can impact physical activity and working hours. Working hours typically ranged from 8 to 12 hours a day, with variations depending on the season. During the harvesting period, the working hours could extend to 12 hours. Rest time was equally important, as workers would utilize breaks to rest, eat, drink water, and potentially engage in leisure activities [61]. A prevalent practice in parts of the ancient Mediterranean region was the midday nap, known as the siesta. Countries like Spain, Italy, Greece, and Egypt traditionally observed the siesta. During this break, individuals sought cool and shaded areas to nap or rest, often following a light meal. The nap could vary from a few minutes to a few hours, depending on the region's preferences and cultural norms [62].

10. IS THE MEDITERRANEAN DIET AN INFLUENTIAL PART OF THE MEDITERRANEAN LIFESTYLE?

Based on the recently published pillars, the Mediterranean Diet (MedDiet) emerges as a proper, cost-effective, and sustainable diet and an integral part of the high-quality lifestyle prevalent in the Mediterranean region [47]. This lifestyle has been inherited from ancient times and continues to shape the current way of life in the region. As highlighted in the previous section, this lifestyle encompasses a harmonious combination of various elements, including high levels of physical activity in diverse forms, socialization through ceremonies, dancing, and traditional celebrations, a diet focused on eco-friendly, seasonal, biodiverse, and traditional foods, as well as adequate rest and proper sleep quality, often achieved through the midday nap (siesta) and post-work rest [55]. Interestingly, the MedDiet occupies a central position in this exceptional way of living because, since ancient times, most activities, habits, and cultures in the region have revolved around food as a fundamental survival aspect. As a result, the MedDiet is not merely a dietary pattern; it represents the outcomes of a distinct way of life known as the Mediterranean lifestyle (MedLife). In the forthcoming section, we will present compelling evidence showcasing how each feature of the MedDiet is deeply rooted in the ancient lifestyle, diligently preserved and integrated into the lives of the local communities inhabiting this region over the centuries. This convergence of historical practices and dietary habits sheds light on the Mediterranean lifestyle's enduring relevance and remarkable longevity, making it an enduring symbol of well-being, sustainability, and cultural heritage.

11. FROM THE PAST TO THE FUTURE

This section will present historical evidence from ancient civilizations inhabiting the Mediterranean region, shedding light on their social involvements, physical activity patterns, and rest and sleep patterns. From there, we will draw parallels to modern-day practices and demonstrate how elements such as communal gatherings, ceremonies, dancing, and traditional celebrations continue to be integral aspects of MedLife in today's Mediterranean societies. Furthermore, we will establish the interconnections and links between the pillars of MedLife, showcasing how each element is a necessary part of the others. The seamless integration of social involvement, sufficient rest, regular physical exercise, and diet will be explored to provide a holistic view of MedLife and its inherent harmony.

12. PHYSICAL ACTIVITY AND ITS CONNECTION WITH THE OTHER PILLARS FROM ANCIENT TIMES TO NOW

In the ancient Mediterranean region, physical strength and activity were vital for everyday life, and both men (mainly engaged in outdoor work) and women (predominantly involved in household tasks) collaborated closely to ensure their survival. Men were primarily involved in agriculture, facing challenges such as climate variations (hot and dry summers, heavy rainy winters), limited agricultural knowledge (farming in dry lands requiring plowing during rainy weather using animals like cows, approximately 3 to 9 times per year), geographical factors, and the distance to farming lands, making their labor exceptionally demanding [58]. The evidence suggests that mainly carried out by men, agriculture served as the foundation for producing seasonal and traditional products and locally sourced, eco-friendly, and biodiverse goods in the Mediterranean region. In challenging situations, women also contributed by assisting in tasks such as fruit picking, plowing with cows, and grinding grains, further emphasizing the collective effort of both genders in sustaining their way of life [57, 63].

In addition to their roles in agriculture, women in the ancient Mediterranean region were predominantly engaged in essential household activities such as cooking, weaving, wool working, and sieving mash for beer production, among other tasks. While agriculture was a significant source of income, it was a seasonal occupation, leading people to engage in other jobs for sustenance and livelihood [57, 60, 64]. Notably, fish and seafood are highly recommended in the Mediterranean Diet. When we examine the historical fishing activities in conjunction with this dietary pattern, it becomes apparent that the abundance of seafood in the diet may be attributed to the vigorous fishing practices of ancient Mediterranean people. These physically demanding activities were crucial for their survival, and including seafood in the diet may have contributed to a healthier way of living, aligning with the principles of the Mediterranean lifestyle. Moreover, hunting, fishing, and trading through the Mediterranean Sea (mainly in Greece and Rome) and the Nile River (in Egypt) were some of the additional endeavors undertaken to secure income and food. These jobs were physically demanding and often hazardous, as men would spend long hours rowing for fishing or trading expeditions [61, 65]. Additionally, leisure time was important in ancient Mediterranean life, where people participated in various activities, sports, and games. Socializing through communal meals, attending public events, and enjoying singing, dancing, and games were common pastimes. Considering the above, it is evident that leisure time in the Mediterranean region involves physical movement, social interactions (social connection), and adherence to a proper diet.

Furthermore, recent evidence suggests that most individuals in the Mediterranean region maintain an active daily lifestyle, performing household activities and chores. This reflects the continued involvement in culinary preparation as part of MEDDIET [60]. A study in this area also showed that half of the men and women in this region maintain moderate physical activity levels even in their later years [66]. Historically, physical work was demanding among the Mediterranean

population, especially for farmers and shepherds, starting from an early age (8-12 years old) and continuing into old age. This enduring tradition of physical labor could be one of the crucial factors contributing to the longevity and successful aging among the people in this area, which indicates the continued preservation of the culture of providing local, eco-friendly, biodiverse, and seasonal products [67].

Regarding leisure time, it is essential to consider that the definition of leisure activities may vary among Mediterranean residents due to cultural, habitual, and environmental factors. Recent evidence suggests that individuals in the Mediterranean region typically engage in diverse activities during their leisure time, such as swimming, culinary experiences, relaxation, and dancing. Being physically active during leisure time is a characteristic feature of Mediterranean residents, often seen through group games, dancing, and festival participation. A systematic review found that over half of the people in the current Mediterranean engage in sports, cultural events, and social activities for an average of more than three hours per week [68]. This evidence underscores the deep connection between leisure activities and involvement in social events. In other words, in the Mediterranean way of living, leisure activity is an integral part of socialization among the inhabitants.

13. SOCIAL CONNECTIONS AND THEIR CONNECTION WITH THE OTHER PILLARS FROM ANCIENT TIMES TO NOW

Socializing with others through large meals, attending public events, and engaging in singing, dancing, and gaming has always been a cherished aspect of life in the Mediterranean region. The tradition of dining in the Mediterranean is deeply rooted in promoting togetherness and creating a convivial atmosphere centered around food, which has been a crucial part of social connections throughout history and continues to be valued today. Dining satisfies hunger and holds immense social significance, maintaining connections and celebrating various occasions, such as births, marriages, deaths, family gatherings, seasonal changes, feast days, and more [61, 63]. This historical evidence supports the strong association between conviviality, social activities, culinary involvement, seasonal and traditional food consumption, and cultural engagements like dancing, gaming, and singing [47, 60]. In essence, it encompasses a holistic approach to life, where each aspect complements and enriches the others, creating the phenomenon known as the Mediterranean lifestyle.

Sports festivals were significant socializing events in ancient Mediterranean civilizations, serving multiple social, cultural, and political functions. Whether in Greece, Rome, or Egypt, these festivals allowed people to unite, exchange ideas, enjoy demonstrations, and learn from one another [69-71]. It became a place where social connections were forged and strengthened. Additionally, these festivals inadvertently encouraged physical activity, as participants witnessed the impact of physical strength on achieving pride, fame, and victory. Given the political instability, cultural diversity, and harsh conditions during drought seasons, physical strength was crucial for survival, defense, and attack [72]. Thus, participating in these events promoted socialization and instilled

a sense of physical fitness and resilience, essential aspects of the Mediterranean lifestyle. Combining the teachings of their philosophers with the culture of sport and exercise, the people of the Mediterranean region were encouraged to be socially engaged, physically fit, and protective of their land. This connection between socialization, physical activity, and cultural values was vital in shaping the Mediterranean lifestyle [73].

It is worth noting that the tradition of participating in sports and social events continues among the inhabitants of the Mediterranean region to this day. A study in Ikaria revealed that 80% of subjects over 70 regularly engaged in swimming activities, with some participants maintaining this activity until age 76. Additionally, dancing was a common social activity among the participants, who displayed a positive attitude towards this form of leisure. Furthermore, the participants demonstrated a strong sense of family solidarity, social interaction, and physical activity [74]. The large-scale MEDIS study found that subjects over 65 regularly went out with family and friends once or twice weekly. Another MEDIS study reported that older men and women over 80 engaged in walking and other activities for an average of two hours per day [75]. These findings underscore the significance of socialization through culinary activities, ceremonies, sports, and leisure as integral components of the Mediterranean lifestyle. The evidence highlights the deep connection between social involvement, diet, and exercise, all of which contribute to the well-rounded and vibrant lifestyle characteristic of the Mediterranean region.

14. SLEEP AND REST AND THEIR CONNECTIONS WITH THE OTHER PILLARS FROM ANCIENT TIMES TO NOW

In ancient times, people valued a regular sleep schedule and often used various herbs and plant extracts as sleep aids and remedies, highlighting the importance of rest time. Sleep disorders were addressed through nutritional approaches, indicating a connection between diet and sleep in their lifestyle. While there is no good evidence to suggest that ancient Greeks had a siesta tradition, they did have a midday break known as *Akratisma*, which provided a time for stopping work and resting, although not necessarily sleeping. This period was reserved for relaxation and unwinding, allowing them to take a break from work-related activities [61, 76]. Additionally, Romans in ancient times had a similar midday break known as *Sexta* or *Sexta hora*, occurring during the sixth hour of daylight. During this break, Romans would stop working, have their meal, and perhaps take a nap or rest, engaging in other activities such as bathing and sexual encounters [62]. These practices further emphasize the significance of rest and leisure in their daily lives, showcasing the interconnectedness of various lifestyle elements in the Mediterranean region.

It is worth noting that the historical working hours and midday rest time in the Mediterranean region were influenced by seasonal variations, with longer working hours during summer than winter [58, 60]. These movement patterns demonstrate how individuals adapted to the climate and environmental conditions, achieving a balance between physical activity and rest. As a midday rest, the siesta was

crucial in avoiding the day's hottest hours and conserving energy for the remaining work hours. This practice allowed individuals to rejuvenate and contribute to their well-being and productivity. The adaptation of the Mediterranean people to their specific working, eating, and environmental conditions showcases the significance of proper rest and sleep patterns in this culture [55].

Interestingly, the rest and sleep patterns have remained remarkably consistent from ancient times. Several studies conducted in the Mediterranean area shed light on this enduring aspect of human behavior. For instance, in an Ikaria study, approximately 70% of the participants reported taking a daytime nap, typically lasting less than an hour [74]. Another study by Panagiotakos *et al.* found that all study subjects over 80 in Ikaria, Greece, regularly engaged in daytime naps [77]. Furthermore, a large-scale MEDIS study in Greece revealed that more than 70% of participants over 65 still partook in regular afternoon naps, commonly known as siestas, particularly after lunch [78]. These findings suggest that the tradition of proper rest time and midday sleep has been ingrained and practiced as an integral part of the Mediterranean lifestyle since ancient times.

CONCLUSION

The Mediterranean lifestyle emphasizes maintaining a harmonious balance between work, rest, nutrition, and social activities. Hence, it can be asserted that adopting an active lifestyle (whether indoor or outdoor), following a plant-based diet, ensuring sufficient rest (adequate sleep), engaging in social events, and finding enjoyment through ceremonies, games, or dancing are advantageous aspects of the Mediterranean way of living. These elements collectively contribute to overall health. Transferring this lifestyle to modern society holds the potential to prevent non-communicable diseases and mental disorders while fostering longevity and well-being.

LIST OF ABBREVIATIONS

BMI	=	Body Mass Index
CHD	=	Coronary Heart Disease
MetS	=	Metabolic Syndrome
RCTs	=	Randomized Controlled Trials
SOD	=	Superoxide Dismutase

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