

## REVIEW OPEN ACCESS

# Defining the Traditional Mediterranean Lifestyle: Joint International Consensus Statement

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## ABSTRACT

**Introduction:** The term “Mediterranean lifestyle” has gained increasing prominence in recent years, yet a specific definition remains elusive. In response, the Mediterranean Lifestyle Medicine Institute Board of Directors convened a multidisciplinary panel comprising international experts and leaders in lifestyle medicine. Their goal was to review existing literature and formulate a consensus definition of the “traditional Mediterranean lifestyle (tMedL),” referring to the historical way of living of the people in the Mediterranean region. This paper presents the agreed consensus statement and a comprehensive holistic definition of the term “traditional Mediterranean lifestyle.”

**Methods:** Major medical and social sciences electronic databases from inception to February 2023 were searched, employing keywords relevant to the Mediterranean lifestyle and its constituent elements (diet, physical activity, sleep, stress, socialization). Subsequently, definitions for each pillar were created and synthesized to derive a comprehensive definition of the “traditional Mediterranean lifestyle.”

**Results:** This proposed definition received ratification from the Mediterranean Lifestyle Medicine Institute’s expert working group during the First International Mediterranean Lifestyle Medicine Conference held in June 2023 on the island of Leros, Greece. “The traditional Mediterranean lifestyle is characterized by its diverse and adaptable nature. Key facets encompass conviviality, lifelong social connectedness, purposeful living, strong community and familial bonds, harmony with nature and the environment, profound spirituality, adherence to religious practices, preservation of local customs, resilience cultivated through adversity, and a commitment to moderation across all spheres of life.”

All authors are MEMBERS of the Mediterranean Lifestyle Medicine Institute, Leros, Greece.

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**Conclusions:** This definition comprehensively outlines the primary lifestyle factors ingrained in Mediterranean inhabitants across generations. Its holistic nature furnishes a crucial conceptual framework for directing lifestyle medicine practitioners in assisting patients to mitigate diseases, promote overall well-being, devise research initiatives to investigate the health ramifications of this lifestyle, and inform curriculum development.

## 1 | Introduction

The quest for longevity is a universal trait among all living organisms, with humans being no exception. Longevity is a complex characteristic, shaped by an interplay of genetic and environmental factors. Among these environmental factors, lifestyle assumes a paramount role. A healthy lifestyle has the potential to augment longevity, enhance life quality, and avert diseases [1].

The role of the Mediterranean diet (MD) in the health of the populations in the Mediterranean region piqued scientific interest during the mid-twentieth century. The initial systematic exploration was undertaken in the late 1940s on the Greek island of Crete by a scientific team led by Leland C. Allbaugh, an American epidemiologist commissioned by the Rockefeller Foundation [2]. The principal findings of this research revealed that the population practiced a “poor” diet based on cereals, legumes, vegetables, and fruit, with limited quantities of goat meat and milk, game, and fish and “swimming in olive oil.” Plant-based foods constituted approximately 60% of total calories consumed. Additionally, no meal was considered complete without bread, and wine was a standard accompaniment for all meals, barring breakfast.

Despite the wealth of knowledge presented in the Rockefeller report, the interest in the health implications of the MD reached its zenith with the publication of the results from the Seven Countries Study (SCS) [3]. This ground-breaking observational study, convened in the 1950s, sought to discern the relationship between diet and lifestyle, and heart disease, and to study healthy aging among participants from countries with divergent lifestyles. Spearheaded by lead investigator Ancel Keys, the original study examined men from the USA, Japan, Finland, the Netherlands, Italy, Greece, and the former Yugoslavia [3].

The SCS unveiled several crucial findings, primarily the compelling association between dietary factors and the risk of cardiovascular disease. This investigation revealed that the age-normalized cardiovascular mortality rate per 1000 population annually was significantly lower in Crete, Greece, at 7.2, compared to 41.6 in cohorts from Finland [4, 5].

Since the SCS many systematic reviews and meta-analysis of prospective studies ascertained that high fidelity to the MD corresponded with a significant reduction in the risk of all-cause mortality, cardiovascular disease, cancer, neurodegenerative diseases, type 2 diabetes, and enhancements in cognitive function and mental health outcomes [6–10].

While a substantial volume of research has focused on the MD and its effect on health outcomes, diet alone cannot fully account for the diversity and complexity of chronic degenerative diseases. Even in the SCS, an association was discovered between

cardiovascular risk and other lifestyle elements such as physical activity, smoking, and alcohol consumption [3]. Populations that demonstrated high levels of physical activity and lower levels of smoking and alcohol consumption exhibited decreased levels of cardiovascular disease [11]. Given that lifestyle diseases have multifactorial etiology and are strongly linked to personal lifestyle habits, their prevention and treatment necessitate a multifactorial approach. This approach must concentrate on the entirety of a person’s way of life.

Interestingly, revised Mediterranean pyramids, published in 2010 and 2020, not only provide information about the frequency and serving size of various food groups typical of the MD but also include lifestyle aspects integral to the traditional Mediterranean way of life and highlight sustainability and environmental concerns [12, 13]. These recently added components encompass principles of conviviality, frugality, and moderation that dictate consumption patterns, preference for locally sourced, biodiverse, seasonal, and traditional products and the preservation of a sustainable and eco-friendly diet. They also emphasize personal involvement in food preparation and culinary activities, social interaction during meal consumption, regular physical activity in open spaces, adequate hydration, and sufficient rest and relaxation [12]. These lifestyle factors create the environment within which the MD operates effectively, with the updated depiction of the Mediterranean pyramid signifying a shift from diet-focused research to an exploration of the overall lifestyle characteristic of the countries surrounding the Mediterranean Sea and the potential health benefits this lifestyle offers.

Consequently, the objective of this narrative review is to provide the background for constructing a holistic definition of the term “traditional Mediterranean lifestyle” (tMedL). This definition aims to encapsulate, as precisely as possible, the most prevalent lifestyle factors that have characterized the inhabitants of the Mediterranean region from ancient times to the present, referring to their historical way of living.

## 2 | Methods

### 2.1 | Review Question

We identify and summarize from existing literature the characteristic elements defining the lifestyle of the people living in the Mediterranean region.

### 2.2 | Context

The Mediterranean Lifestyle Medicine Institute is leading an international initiative to define the components comprising

the tMedL and to study its health effects (wellness, successful aging, quality of life, longevity, etc.) across all pillars of lifestyle medicine: Diet and nutrition practices plus alcohol (we have combined the diet and drug and alcohol pillars into one, as alcohol constitutes a significant component of the traditional Mediterranean diet), physical activity and movement patterns, sleep practices, stress and mental well-being, and social connectedness.

### 2.3 | Search Methodology

This is a structured rapid review (please see limitations of this search approach in the Discussion section). Literature searches were conducted within each of the pillars to inform simultaneous, in-depth critical reviews of the literature, and to develop the narrative review presented herein. The following databases, from the earliest available date to February 2023, were included: Ovid MEDLINE, Embase and PsycINFO, EBSCO CINAHL, Web of Science, Scopus, and ProQuest Social Science Premium. Searches were performed using keywords related to the Mediterranean lifestyle and its relevant components. Multiple subject headings and keyword search terms were included covering the following components: lifestyle behaviors, Mediterranean diet and nutrition, physical activity, sports/exercise, sleep pattern, social interaction family/social relationships, societal roles, purposeful living, stress, anxiety, depression, well-being, quality of life, healthy aging, successful aging, life expectancy, morbidity and mortality. Further filters were applied during the search of literature databases including limitations regarding the article types and the species studied. More precisely, with respect to article types, clinical trials, controlled clinical trials, meta-analyses, prospective studies, randomized controlled trials, reviews, and systematic reviews were included in the present work. Publication languages were English, Greek, Spanish, and Portuguese. Full details of the searches are available on request and will be published with the individual narrative reviews.

### 2.4 | Inclusion Criteria

From the search results across all pillars, publications were included in the present narrative review if (i) they assessed at least one component of the tMedL in their design, (ii) they assessed tMedL by using a combination of its components and explicitly mentioned the elements studied, and (iii) they originated in the countries mentioned below.

### 2.5 | Participants/Population

People living in the Mediterranean region: Albania, Bosnia and Herzegovina, Gibraltar, Algeria, Morocco, France, Croatia, Montenegro, Cyprus, Libya, Lebanon, Egypt, Malta, Monaco, Slovenia, Syria, Tunisia, Turkey, Vatican City, Greece, Spain, Israel, Italy, Portugal, Andorra, San Marino, Kosovo, Serbia, Jordan, and Sardinia.

### 2.6 | Main Outcome(s)

To define the characteristics constituting the “traditional Mediterranean lifestyle,” the definitions for each pillar were

#### BOX 1 | Definition

The traditional Mediterranean lifestyle (tMedL) is a diverse and adaptable way of living. Key aspects are conviviality, social connectedness across the life span, a purposeful life, a strong sense of community and family values, connection with nature and the lived environment, deep-rooted spirituality, religious practices, local customs, acquired resilience through adversity, and a sense of moderation in all aspects of life.

consequently combined to derive a holistic definition of the Mediterranean lifestyle (see Box 1 and a schematic diagram, named the “Mediterranean Lifestyle Medicine Temple” (Fig. 1). The proposed definition and the schematic diagram were ratified by the team of experts during the First International Mediterranean Lifestyle Medicine Conference in June 2023 held on the island of Leros, Greece.

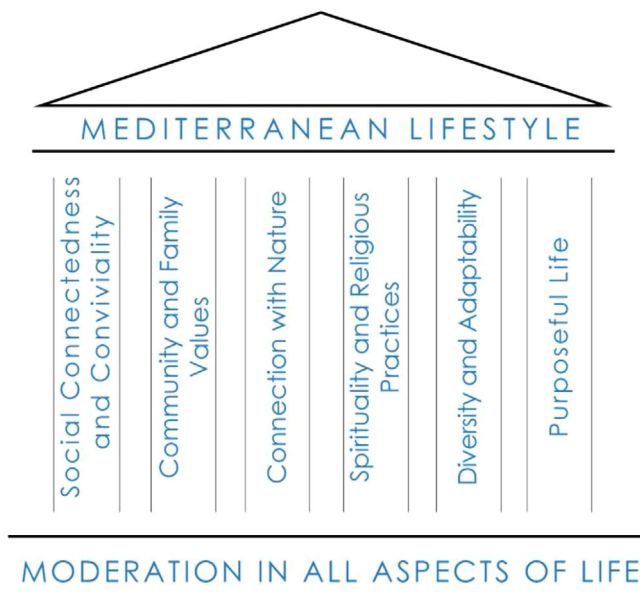
## 3 | Results

The primary findings of this investigation are described below, presented in accordance with each pillar of lifestyle medicine: dietary and nutritional practices, which encompass alcohol consumption, patterns of physical activity and movement, sleep practices, social connectedness, and stress management (see Figure 1).

### 3.1 | Traditional Mediterranean Diet and Dietary Practices

“Mediterranean” refers to a landlocked sea. Key defining features include its climate, characterized by sun-drenched, arid summers, and mild winters; the sea itself, serving as a tranquil conduit for human migration and trade since ancient times; the diverse terrain, marked by intricate mountain ranges along the coastline; a rich variety of vegetation, boasting notable biodiversity; and a longstanding tradition of urban civilization [14].

The term “Mediterranean diet” denotes the diet of the people living in the Mediterranean region. It was coined in the 1950s by Ancel Keys [3], and it was a way of life (more than just a way of dining) for millennia. The ancient Greek model of bread, wine, and olive oil was the triad characteristic of the MD [15]. Contrary to popular belief, the Ancient Greeks were essentially pesco-vegetarian. Additional foods included a wide variety of fruits and vegetables (figs, apples, wild greens, chicory, onions, leeks, lettuce, mallow, and mushrooms), tree seeds and nuts, yoghurt, and sheep’s cheese, and only a small amount of meat with a strong preference for legumes, fish, and seafood [15, 16]. The continuous exchange brought myriad novel foodstuffs into the Mediterranean region in antiquity, and such exchange was further amplified by the Moorish occupation of Spain (which brought, e.g., eggplant, apricot), the expansions of the Venetian and Ottoman empires (e.g., lemon, melon, spinach, green bean), and the return of explorers from the Americas (e.g., potato, tomato, corn, peppers). The tomato later became an important component of Mediterranean cuisine, both in the raw form and cooked in sofrito and salsa. Different types of cereals depending on the geographical area and traditions, acted as sources of energy for daily survival, especially for the poor working in the fields,



**FIGURE 1** | The “Mediterranean Lifestyle Temple”. The schematic diagram delineates the essence of the traditional Mediterranean lifestyle. Analogous to the supportive function of columns in ancient Greek temples, the multifaceted attributes of daily existence among inhabitants of the Mediterranean region epitomize the traditional Mediterranean lifestyle. Similarly, akin to the structural role of the stylobate beneath temple columns, the principle of moderation across all life domains forms the fundamental tenet of the traditional Mediterranean lifestyle (concept LS Sidossis; designed by Kallea S. Sofia, DArch).

and included sourdough bread, couscous, polenta, bulgur wheat, pasta, and others, used either on their own or incorporated in soups and other dishes [15–17].

The traditional MD, as defined by Ancel Keys, is a plant-based *peasant*-style diet, abundant in seasonal vegetables and fruits, legumes, and nuts [3, 18]. Extra virgin olive oil serves as the primary source of added fat in the MD. Wholegrain cereals, including sourdough bread, bulgur wheat, polenta, pasta, and rice, feature prominently in almost every meal. Fermented dairy products, such as yogurt and feta cheese are consumed regularly. Moderate portions of small oily fish are enjoyed up to three times a week, with frequency dependent on proximity to the sea. Red meats like lamb, goat, and pork, as well as processed meats, are consumed sparingly. Instead, there is a preference for legumes, enjoyed three to four times a week, along with occasional servings of white meats like chicken and quail, and game meats. Up to four free-range eggs are consumed weekly [3, 4, 18, 19].

Fresh and dried herbs, spices, fresh lemon juice, and vinegar are commonly used to flavor salads and cooked dishes. Traditional food combinations, such as lentils with rice, beans with potato, and couscous with hummus (chickpeas), contribute to a balanced protein (amino acids) profile, especially important when overall food intake is modest. Water is the primary beverage, complemented by herbal infusions and wine in moderation. Wine is typically enjoyed with meals, in accordance with the beliefs of each community [3, 4, 18, 19].

Local religions also influenced food intake by recommending fasting which entails abstinence from animal foods (veganism) for at least 100 days (and up to 180 days) of the year [20, 21]. This can involve periods of complete abstinence from food and drink for specific periods, such as Ramadan, where no food or drink is consumed during daylight hours throughout the 40-day fasting period; or a restrictive fast such as the Greek Orthodox custom of eating a completely vegan diet during numerous fasting periods (such as the 48 days before Easter), or on a regular weekly basis such as Wednesdays and Fridays [20, 22].

Eating patterns within Mediterranean cultures varied based on occupation, but typically the main meal of the day occurred in the late afternoon, followed by a period of rest, known as the siesta. Breakfast, often enjoyed in the fields, consisted of lighter fare like bread, olives, tomatoes, and onions. Late-evening meals tended to be lighter as well, featuring options such as soup, bread, or a small snack (*mezze*) accompanied by wine.

Unlike in some other cultures, snacking between meals and eating or drinking while on the move were not common practices among Mediterranean populations. Meals were viewed as moments for communal gathering and nourishment, prioritizing quality time spent together and savoring the flavors of freshly prepared dishes [23].

The traditional MD (from the Greek “*diata*,” or way of life), however, encompasses more than just food. It promotes social interaction since communal meals are the cornerstone of social customs and festive events. It has given rise to a considerable body of knowledge, songs, maxims, tales, and legends [23].

At its core, the traditional MD embodies values of hospitality, neighborliness, intercultural dialogue, and creativity. It reflects a way of life grounded in reverence for the land, biodiversity, culture, and religion. This dietary tradition placed great importance on environmental stewardship, viewing the land and water as sacred providers of life. Beyond sustenance, the traditional MD plays a pivotal role in cultural spaces, festivals, and celebrations, uniting individuals of diverse ages, backgrounds, and social statuses. Moreover, the craftsmanship and production of traditional receptacles for food transport, preservation, and consumption, such as ceramic plates and glasses, were integral to the Mediterranean culinary experience. These artifacts served as tangible expressions of cultural heritage and contributed to the aesthetic and sensory enjoyment of meals [17, 24, 25].

The family’s role within the MD was significant [17, 23]. Women were key in passing down the knowledge of the diet, preserving its techniques, and honoring seasonal rhythms and festive occasions. They instilled the values associated with this lifestyle in younger generations. Men, on the other hand, contributed by cultivating fruits and vegetables, producing olive oil, and overseeing animal husbandry. Activities like olive picking and food preservation, such as making tomato sauce, often become family endeavors, with children actively participating alongside their parents [17, 23, 24].

Overall, the traditional Mediterranean way of life places food and culture at the forefront of health and well-being, focusing on seasonality, sustainability, and environmental respect.

### 3.2 | Traditional Mediterranean-Style Physical Activity and Movement Patterns

The celebrated and extensively studied traditional MD stands as a focal point within the broader context of the Mediterranean lifestyle. Equally pivotal, however, is the role of physical activity in various shapes and forms as evident by its prominent role in the lives of the inhabitants of the Mediterranean region since ancient times.

The movement patterns and physical activity in the Mediterranean region were profoundly influenced by its distinctive climate, cultural beliefs, and constant state of warfare. Challenges arising from seasonal agricultural demands and maritime threats significantly shaped daily physical routines. Ancient societies, exemplified by the Greeks, Egyptians, and Romans, placed a high value on physical activity, emphasizing its importance for personal development, social cohesion, health, and military preparedness. Philosophical ideologies underscored the benefits of sports, and leaders such as Egyptian pharaohs demonstrated their fitness as a testament to their leadership capabilities. The prevalence of warfare further necessitated the cultivation of physical strength and endurance, particularly evident in societies like Greece and Rome [25–27].

In summary, the confluence of regional climate, cultural norms, and societal pressures rendered physical activity a vital aspect of daily life in ancient Mediterranean civilizations, serving both functional and recreational roles [26–28]. In essence, the physical activity patterns of these ancient civilizations were diverse and deeply ingrained in their daily lives, societal norms, and rituals, contributing substantially to their overall health and longevity.

The common types of physical activities in ancient Mediterranean civilizations, focusing on Greece, Rome, and Egypt, can be categorized into five groups:

- a. *Household activities*: Activities within the domestic sphere, were traditionally primarily undertaken by women and encompassed tasks ranging from basic chores like cleaning and cooking to agriculture-related activities such as grain grinding and fruit picking. Fetching water constituted a daily physical task [29–31].
- b. *Labor-related activities*: Labor, historically dominated by men, included agricultural pursuits like farming and fishing, trading, and craftsmanship. Challenges arose due to factors like climate change, geography, and threats such as piracy. Notably, Egyptian artisans created intricate carvings and paintings in tombs and temples [31, 32].
- c. *Military-related activities*: Given the persistent state of conflict in the Mediterranean region, military training assumed paramount importance. In Greece, it was deemed a civic duty with soldiers typically being self-funded citizens. Rome emphasized rigorous training for combat benefits, while in Egypt the military evolved from ordinary citizens to two well-trained armies [33–35].
- d. *Leisure activities*: Leisure activities included dancing, ball games, and physical exercises like wrestling and running, swimming, and ball games [27, 36, 37].

- e. *Festivals and social activities*: Sport and cultural festivals played a crucial role in ancient Mediterranean civilizations serving diverse societal functions. Greece is the birthplace of the Olympic games, and Greeks were known for their participation in sports events, while Rome and Egypt featured specialized festivals like gladiator battles and pharaoh-focused events, respectively [38–40].

Scientific evaluation of the role of physical activity in the lifestyle of Mediterranean residents commenced in the 20th century. These studies suggest that the Mediterranean region has maintained for many centuries distinct patterns of physical activity, deeply rooted in tradition and daily life, significantly influencing the health, longevity, and life expectancy of its residents separated into three categories.

- a. *Household activities*: Active household chores, blending environment, culture, and diet, characterized life in the Mediterranean. Studies highlight that many older residents independently performed all household tasks, such as gardening, dishwashing, and shopping. Gardening was a preferred activity among elderly populations in Greece and Italy [41–43].
- b. *Occupational activities*: Dominant occupations like agriculture and animal husbandry necessitated high levels of physical activity. Older men were known to cover long distances on foot to tend to their fields. Studies in “blue zones” areas, known for exceptional longevity, underscore farming, shepherding, and manual labor as common jobs [44–47].
- c. *Leisure activities*: Crucial for well-being and relaxation, leisure activities in the Mediterranean region included group games, dancing, festivals, swimming, and cultural experiences. Socializing, often oriented towards group participation, was integral, and walking was a favored leisurely pursuit, particularly among the elderly [43, 47–49]. Studies reveal significant energy expenditure among the very old, with more than 70% engaging in moderate to intense physical activity daily in Ikaria, Greece [43]. Moreover, sedentary lifestyles were less common, with the majority engaging in moderate to vigorous physical activity.

In conclusion, the inhabitants of the Mediterranean region have long embraced active lifestyles steeped in millennia of tradition. This distinctive fusion of household, occupational, and recreational pursuits likely contributed significantly to their robust health and extended lifespans.

### 3.3 | Traditional Mediterranean-Style Sleep

In addition to the traditional Mediterranean-style diet and physical activity patterns, unique sleep practices are also evident in the tMedL, which are associated with health, longevity, and quality of life [7, 12, 50, 51]. Individuals residing in the Mediterranean region had embraced a sleep regimen reflective of this distinct cultural lifestyle, often incorporating a midday or early afternoon nap alongside later bedtimes [49, 50].

In this section, we will elucidate the historical context of this sleeping pattern, its integral role in daily life, and its continued

prevalence despite encountering growing challenges within our contemporary work environments. Early Greek historical writings acknowledged the importance of sleep. As early as the second century CE, the Greek rhetorician and grammarian Athenaeus of Naucratis documented the Sybarites' practice of prohibiting noise in their city, recognizing its disruptive effect on sleep.

And the Sybarites first did not allow the trades that make noise to take place in the city, such as those of blacksmiths and carpenters and the like, so that their sleep be in every way undisturbed; and it was not allowed even to keep a rooster in the city. [52] (Translation: Emmanuel Aprilakis)

The Roman poets, Martial and Juvenal, complained about not being able to get a good night's sleep in the city.

There is no place in the city, Sparsus, for a poor man to think nor to rest. Life is denied by schoolmasters in the morning, corn-grinders at night, and the hammers of coppersmiths all day long; Here the idle moneychanger rattles a mass of Nero's coins on his dirty counter, there a beater of Spanish gold strikes his worn stone with a shining club. Neither does the fanatic throng of Bellona stop, nor the chattering shipwreck with his body bandaged up, nor the Jewboy taught to beg by his mother, nor the bleary-eyed peddler of sulfurated ware. Who is able to enumerate the disruptions of indolent sleep? [53] (Translation: Emmanuel Aprilakis)

But, what lodgings permit sleep? Only for those with great wealth is rest found in the city. Thence is the source of our sickness—the traffic of wagons in the narrow winding of streets and the outcry of a blocked cattle train will snatch sleep away from Drusus and even from sea-calves. [54] (Translation: Emmanuel Aprilakis)

In ancient Greece, the practice of midday napping was prevalent and was perceived as advantageous for both physical and mental well-being. Its origin is commonly attributed to the need to evade the midday heat and conserve energy [55, 56]. The Greek cultural concept of “mesimeri” (midday) spans from 3 p.m. to 5 p.m., coinciding with the sun's zenith and the hottest part of the day. Greeks believed that midday napping could enhance memory, stimulate creativity, and improve overall productivity. To facilitate rest and revitalization, most if not all businesses temporarily closed in the afternoon aligning with the philosophy of enhancing both productivity and general welfare [55, 56].

Greek philosophers, including Plato, underscored the significance of napping for health maintenance. In Plato's work “The Laws,” he advocated for a balanced approach to sleep, emphasizing its importance for health. “. . . reserving only so much time for sleep as is expedient for health” [57]. Additionally, the historian Plutarch documented the introduction of midday napping in Spartan culture by Lycurgus, aiming to enhance the well-being

of the Spartan people. In his work “Lives of the Noble Greeks and Romans” he wrote:

The third and most masterly stroke of this great lawgiver, by which he struck a yet more effectual blow against luxury and the desire of riches, was the ordinance he made, that they should all eat in common, of the same bread and same meat, and of kinds that were specified, and would stand in need of long sleep, warm bathing, freedom from work. [58]

A fundamental challenge inherent in the investigation of sleep and nap phenomena is the insufficient consideration of confounding factors such as nocturnal sleep duration, sleep quality, and occupational engagement. Previous scholarly propositions advocate for a comprehensive assessment of total daily sleeping hours, emphasizing the necessity to avoid isolating the effects of daytime or nighttime sleep when examining the impacts of sleep on health outcomes [51, 59].

The practice known as “Riposo,” originating from Italy, entails a traditional afternoon nap undertaken after lunch. Distinguished by its duration, typically spanning 30 min to an hour, and its intended purpose of providing repose and revitalization to both body and mind, the Riposo nap, or “Pennichella” has been an integral element of Italian cultural practices for centuries. This cultural tradition held particular prominence in southern Italy, where the climatic conditions are warmer, and the workday is protracted, necessitating a midday interlude for relaxation and rejuvenation [60]. The cultural salience of Riposo napping is further manifested in Italian artistic and literary expressions. Notably, the renowned Italian poet Gabriele D'Annunzio underscored the significance of the Riposo nap in his work “Pleasure,” articulating, “After lunch, rest for half an hour, then love for the rest of the day” [61].

Moreover, Riposo napping assumed cultural and social significance in Italy, symbolizing a deliberate deceleration to relish life. It was frequently accompanied by a light repast or social interactions with friends and family. Despite the historical underpinnings, the prevalence of the Riposo nap has diminished in contemporary Italy due to heightened societal demands and the imposition of more rigid work schedules [60]. Nonetheless, this tradition persists among many Italians, retaining its status as a crucial facet of the nation's cultural heritage.

In Spain, the historical practice of the midday nap, commonly referred to as “siesta,” constituted a deeply rooted tradition within the cultural fabric of the nation. Its origins can be traced back to ancient civilizations, notably the Romans and Moors, who inhabited the Iberian Peninsula. These cultures established a custom of taking a midday respite to seek refuge from the intense heat of the Mediterranean sun. The term “siesta” finds its etymological roots in the Latin phrase “hora sexta” or “sixth hour,” indicative of its initial scheduling at noon.

Over time, the siesta had become intricately intertwined with Spanish society, adapting to the climatic conditions and agricultural practices prevalent in the region. Historically, individuals engaged in agricultural labor, comprising a significant portion

of the Spanish populace until the mid-20th century, commonly observed the midday nap as an essential means of avoiding the oppressive midday sun. Consequently, numerous businesses and governmental offices in these regions persist in implementing afternoon closures to accommodate this cultural practice.

Despite the enduring cultural significance of the siesta, the advent of technology and modernization has posed challenges to its continuation in the Mediterranean region [55, 59, 62, 63]. The perception of napping as indicative of idleness or reduced productivity has emerged in the face of increasingly busy lifestyles. Although precise statistics on nap prevalence in the Mediterranean are challenging to ascertain, evidence suggests its continued practice across diverse age groups and geographical areas.

For instance, in Greece and Cyprus during the 20th century, the tradition persists within the context of a “quiet hour” or “quiet time” wherein families collectively engage in postlunch napping, leading to a deferment of business and social activities until the conclusion of this period. Recent surveys conducted among adults aged 18 to 86 in Greece and Spain revealed a weekly nap incidence of 58% and 35%, respectively [62, 63]. Notably, this phenomenon appears more prevalent among older demographics with 74% of Greeks aged over 65 and 56% of Israelis aged 75–94 reporting regular midday napping [55, 59].

The practice of napping extends to younger populations as well. Approximately 20% and 40% of Spanish and Greek adolescents, respectively, reported regular napping [64, 65], while among young adults (Spanish university student population), approximately 60% reported engaging in regular afternoon naps lasting between 5 and 30 min per day [66].

In summary, midday napping held a prominent place in the cultural and social fabric of daily life in the Mediterranean region. This practice, deeply rooted in tradition, reflected the region’s emphasis on maintaining a balanced lifestyle amidst the warm climate and slower pace of living. The prevalence of midday napping, usually less than 1 h in duration, was observed across all age groups and occupations, with many businesses and public services accommodating this cultural norm by adjusting their operating hours. Furthermore, this tradition fostered social connections, as families and communities often gathered during this time to share meals and spend quality time together, reinforcing the importance of rest and relaxation in the Mediterranean way of life.

### 3.4 | Social Connectedness Mediterranean-Style

The typically calm Mediterranean Sea has facilitated human migration and trade since ancient times, significantly contributing to the enduring tradition of urban civilization in the region [14]. Consequently, the region exhibited shared settlement patterns, marked by the prevalence of nuclear cities and the juxtaposition of expansive estates with smallholding peasant farmers in rural landscapes. The most influential description and investigation into the Mediterranean area to date belonged to Fernand Braudel who was fascinated by the Mediterranean region [67]. Braudel characterized it as a facilitator rather than an impediment stating that dynamic landscape and seascape

fostered economic and cultural exchanges and social interactions as well as multiple belief systems and religious practices. This diverse environment meant more conflicts and more resolutions that led to the everchanging, adapting, and moderating social and economic life of the Mediterranean region [67].

Despite the commonality in social features, the Mediterranean manifests a pronounced urban orientation, reliance on small kinships, and a vibrant community life [14]. This sociocultural identity is further underscored by a convivial and interdependent daily existence within densely populated neighborhoods along with the prominence of religion and ritual practices. Another salient aspect is the patronage system [14] ingrained in Mediterranean politics, representing a highly individualistic characteristic of client-building.

From a cultural perspective, Mediterranean societies traditionally exhibited a conspicuous emphasis on male dominance, coexisting paradoxically with a reality where families revolved around maternal figures. Themes of family solidarity and sibling loyalty were prevalent, albeit often accompanied by cultural contradictions including intense intrafamily hostilities and sibling antagonism. Some scholars contend, albeit controversially, that the foundation of Mediterranean social structure lies in ambivalence [14].

The Mediterranean, in antiquity, served as a crucial conduit for the Egyptians connecting their coastal towns of Cairo and Alexandria to the Roman Empire, Tunisia, and other distant realms. Through the Strait of Marmara, Egyptians gained access to the remote regions of Asia Minor, while the Suez facilitated connections to the Arabian Peninsula. The ancient Greeks, known for their maritime prowess, established colonies around the Mediterranean Sea, addressing issues of overpopulation, land scarcity, and political unrest. Therefore, the Mediterranean, often referred to as a “highway,” played a pivotal role in connecting regions and fostering cultural, economic, and social interactions among North Africa, Asia, and Europe [68]. This intricate trading network contributed to (a) interaction between humans and the environment; (b) development and interaction of cultures; (c) creation, expansion, and interaction of economic systems; and (d) development and transformation of social structures.

The trade routes facilitated cultural diffusion and exchanges, notably through the connections established by Greece and Rome with India and China. The Mediterranean sea’s unique significance which profoundly affected the social structure of the regions around it lies in its role as a nexus connecting the three continents of Africa, Asia, and Europe.

Patterns of endogamy (i.e., the practice of marrying within a specific social group, ethnic group, or community, often to maintain cultural or social cohesion within that group) and exogamy (i.e., the practice of marrying outside of one’s social group, ethnic group, or community) have been significant focal points in the historical evolution of family structures within Mediterranean societies [69, 70]. The persistence of exogamous practices in the Western Roman Empire is evident from the pre-Christian era, spanning the initial three centuries of the common era, until the establishment of Christianity as the state religion. Despite

the allowance of cousin marriages under pagan legal regulations, aristocrats rarely engaged in parallel and cross-cousin unions. Similarly, parallel-cousin marriages were infrequent among the modest inhabitants of the western empire [69]. Consequently, the Christian prohibition on marriages within the sixth degree of kinship had limited impact, as the dispersed pattern of property ownership among pagan aristocrats provided no incentive for intrafamily unions to safeguard consolidated estates. Their financial interests were adequately addressed through marriages within the same social class [69].

Simultaneously, Mediterranean honor was shaped by three distinct competitive influences: wealth acquisition, status attainment in terms of respect, and a narrowly defined masculinity linked to virility. Intersex relations formed a significant aspect of Mediterranean unity, with anthropologists consistently noting an “unbridgeable gulf between a male ‘public’ and a female ‘private’ sphere” [71]. Women’s networks, often downplayed in Mediterranean and Middle Eastern literature, played a pivotal role in female-dominated families [72], where gossip was a powerful tool for maintaining social control. In parallel with male political control in the Mediterranean region, women exercised oral dominance [73].

In conclusion, the tMedL historically underscores the significance of healthy relationships and social connectivity, characterized by several key elements. These include gregariousness, conviviality, and interdependence within the daily life of small, densely populated neighborhoods. The region is marked by cultural diffusion, cross-cultural exchange, and intermarriage facilitated by the convergence of continents [74].

Moreover, spiritual and religious communities played a crucial role in shaping the social fabric of Mediterranean societies. By providing support networks and fostering a sense of belonging, they contributed to the emotional well-being of individuals and the cohesion of communities. Recognizing the significance of these communities is essential for understanding the dynamics of Mediterranean societies and their resilience in the face of adversity [75–77].

In terms of work roles, individuals in the region often engaged in maritime professions such as sailors, explorers, and traders. These multifaceted aspects collectively defined the intricate tapestry of the Mediterranean lifestyle, emphasizing the interconnectedness of various social, cultural, and economic dimensions.

### 3.5 | Stress and Ancient Mediterranean Mental Health

The Mediterranean region, renowned for its rich history, diverse cultures, and breathtaking landscapes, was also characterized by unique stress relief and mental health approaches, deeply rooted in its traditions. These practices and beliefs were characterized by a rich diversity, reflecting the influence of various civilizations and cultures that inhabited the area throughout history. These aspects were intricately shaped by a myriad of factors, encompassing religious, spiritual, emerging medical, and philosophical dimensions with considerable geographical variations [78–81].

Religious and supernatural beliefs played a pivotal role, with many ancient Mediterranean societies attributing mental illnesses to supernatural forces or divine displeasure. Consequently, a range of religious rituals and ceremonies emerged to appease the gods or expel malevolent spirits, aiming to mitigate mental health afflictions. Temples and sanctuaries, dedicated to healing deities such as Asclepius in Greece and Serapis in Egypt, emerged as central hubs for mental health treatment [78–81].

Philosophical and medical approaches also significantly influenced mental health perspectives in the ancient Mediterranean [49, 81–83]. Philosophers like Plato and Aristotle in ancient Greece delved into the nature of the mind and emotions, while Hippocrates, considered the father of modern medicine, advocated for a scientific and naturalistic approach. Emphasizing the importance of maintaining the body’s humoral balance for mental well-being, Hippocrates laid the foundation for a more systematic understanding of mental health [78, 79].

Temple healing constituted an integral facet of mental health care, where individuals seeking assistance would reside in temples, engage in religious ceremonies, and receive counseling from priests or priestesses. The underlying belief posited divine intervention as a potential catalyst for the remedy of mental ailments [80]. The utilization of herbal remedies and dietary practices was also prevalent in addressing mental health disorders. Ancient Greece, for instance, witnessed the application of numerous plants and dietary regimens to balance humors and alleviate symptoms of mental disorders [82, 83]. Furthermore, dream analysis emerged as a diagnostic tool for mental health, with ancient cultures holding the belief that dreams could unveil hidden emotions or conflicts. Seeking guidance from dream interpreters was a common practice in navigating mental health challenges within these societies [81].

Several lifestyle factors unique or common to the region, such as a focus on communal living, strong family ties, and a relaxed attitude towards life appear to have influenced stress relief practices in the region [49, 84, 85]. The siesta, for instance, helps combat the physical effects of stress but also fosters a sense of balance in daily life [86, 87]. The traditional MD, renowned for its health benefits, plays a crucial role in stress relief. Rich in fruits, vegetables, olive oil, and lean proteins, this diet not only promotes physical well-being but also contributes to mental health [88–90]. The act of sharing meals with family and friends is a social ritual that enhances the overall experience, creating a supportive environment that alleviates stress.

The Mediterranean climate encourages an outdoor lifestyle, fostering a connection between individuals and nature. Whether it is a leisurely stroll, a visit to the beach, or enjoying a meal in an open-air setting, the outdoors is intricately linked to stress relief. The practice of spending time outdoors provides a sense of tranquility and promotes relaxation, counteracting the pressures of modern life [49, 55, 91, 92].

Ceremonial practices, rooted in tradition, were prevalent stress relief methods in Mediterranean countries. Festivals, religious celebrations, and local traditions offered opportunities for communities to come together, share joy, and temporarily escape the challenges of daily life. These events served as outlets



for emotional expression, promoting a sense of belonging and connection [85].

Mediterranean cultures often embrace mindfulness practices embedded in their daily lives [93]. Spirituality and religious practices wield a profound influence on mitigating stress offering a holistic approach to well-being that encompasses the mind, body, and soul. At the core of these practices is the recognition of a higher power or a transcendent force, providing individuals with a sense of purpose and meaning that can act as a powerful buffer against stressors [75–77].

Moreover, spiritual and religious communities often functioned as support networks, fostering a sense of belonging and shared values [75–77]. The communal aspect of religious practices often created a social fabric that provided emotional sustenance during times of stress. Whether through collective worship, rituals, or shared traditions, individuals have traditionally found solace and understanding within the embrace of a spiritual community, reducing feelings of isolation, and promoting a sense of unity [75–77].

In summary, the stress relief practices in Mediterranean countries were deeply intertwined with their cultural, historical, and environmental contexts. The emphasis on communal living, healthy nutrition, outdoor activities, ceremonial practices, and cultural mindfulness collectively creates a holistic approach to stress relief. Understanding and appreciating these practices can offer valuable insights for individuals seeking effective stress management strategies in a globalized world.

### 3.6 | The Significance of Moderation in the Mediterranean Lifestyle

At the core of the Mediterranean lifestyle lies the principle of moderation, a guiding philosophy crucial for maintaining harmonious equilibrium across all aspects of life. The Delphic maxim “μηδέν ἄγαν” (“Nothing in excess”) and the quote “Μέτρον ἄριστον” (“Everything in moderation”), coined by Kleovoulos from Lindos in the sixth century B.C., uniquely encapsulate this principle [94, 95].

Ancient Greek thinkers, particularly those of the classical period, underscored the significance of balance and restraint in various spheres of life. Socrates, the prominent ancient Greek philosopher, advocated for self-knowledge and temperance, positing that understanding oneself and practicing moderation leads to a virtuous life [96]. Plato, a disciple of Socrates, explored harmony and balance in his dialogues, arguing for a balanced and moderate life to attain inner and outer harmony [97].

In the context of the Mediterranean lifestyle, ancient Greeks valued moderation in eating. While the symposium, a social gathering, often involved wine consumption, excess was discouraged, with enjoyment tempered by moderation. In physical activity, Greeks promoted a sound mind in a sound body, cautioning against excess and obsession. Aristotle emphasized eudaimonia, or “flourishing,” stressing that moderation in all aspects is vital for achieving true fulfillment and happiness [98]. Stoic philosophers advocated for moderation in emotions and avoiding

extremes of joy or sorrow [99]. This emphasis on moderation in ancient Greece reflected a belief that excess in any aspect could lead to imbalance, disharmony, or harm. The goal was not abstinence but finding a middle ground for enjoyment without compromising well-being or virtue.

Beyond ancient Greece, several religions practiced in the Mediterranean region also prioritize moderation. Christians are advised to exercise self-control in daily activities, encompassing speech, diet, attire, and drinking habits [100]. In the Islamic context, “wasat” (the Arabic word for “best,” “middle,” “centered,” or “balanced”) refers to a “middle way” or “moderation,” avoiding extremes and experiencing things moderately [101]. Jewish philosopher Maimonides, influenced by Islamic and Aristotelian thought, upheld moderation as an ideal within Judaism [102].

In conclusion, moderation is fundamental to the tMedL, shaping dietary and sleep habits, social interactions, and physical activities. This balanced approach not only prevented chronic diseases but also fostered holistic well-being. Embracing moderation in all aspects allows individuals to fully enjoy the richness of the Mediterranean lifestyle, promoting longevity, vitality, and a profound appreciation for the interconnectedness of health and happiness.

## 4 | Discussion

In this study, the aim was to construct a comprehensive statement delineating the tMedL, referring to the historical way of living of the people in the Mediterranean region. This objective is of paramount importance for several reasons: (a) It establishes a consensus on the precise attributes of this lifestyle and facilitates future investigations into its health effects, (b) it informs healthcare providers, policymakers, and the public about the advantages and disadvantages of the tMedL, and (c) it enables clinicians to incorporate and apply this lifestyle paradigm in disease prevention and treatment strategies.

Extensive evidence detailing the various lifestyle components inherent in the daily routines of individuals in the Mediterranean region was reviewed. The investigation encompassed evidence from ancient Greek, Roman, and Egyptian civilizations up to the 1960s, marking significant changes to the tMedL, particularly in urban areas. The primary goal of assembling a diverse group of experts and scientific entities to review the literature and develop a consensus statement defining the tMedL was achieved.

However, certain limitations are inherent in this study. The lack of a formal systematic review, which typically employs rigorous criteria for evaluating evidence levels, is notable. Instead, a structured rapid review methodology was utilized over approximately 6 months, focusing solely on English and Greek language sources. Additionally, the composition of the expert panel, while representing 18 nations across four continents, showed a notable bias towards representatives from the United Kingdom, Australia, and the Eastern Mediterranean region.

A significant strength of this effort lies in the inclusivity of a diverse panel, consisting of academics from various disciplines, clinicians, leaders of lifestyle organizations, and advocates from

patient advocacy groups. The widespread endorsement of the proposed definition by established lifestyle medicine organizations presents an opportunity for collaborative efforts among all stakeholders to effectively investigate, disseminate, and implement this potentially beneficial lifestyle regimen for the improvement of human health.

In summary, the potential of tMedL in addressing noncommunicable diseases and preventing premature mortality is promising. However, to truly understand its effectiveness, a systematic and comprehensive evaluation across literature is crucial.

Traditional low-risk factors like a healthy diet, regular physical activity, limited alcohol consumption, and smoking cessation are important but may not encompass a holistic approach to wellness. tMedL, if rigorously assessed, has the capacity to offer a more targeted and holistic perspective on achieving wellness. This extends beyond the individual level, considering the broader dimensions of physical, mental, social, and environmental well-being.

As we navigate the landscape of health promotion, tMedL could emerge as a valuable tool, providing insights and interventions tailored to individual needs. By harnessing the power of data and advanced analytics, tMedL has the potential to revolutionize personalized healthcare, moving beyond generic recommendations to more nuanced and effective strategies.

Furthermore, the evolution of the tMedL to reflect modern cultural values, the changing needs of an aging society, and new challenges such as increased migration, the tech revolution, and climate change, may present both opportunities and challenges in our efforts to maintain the crucial aspects of this proven healthy lifestyle regime.

The overarching theme of this paper draws on the positive aspects of Mediterranean history. Like all histories, it often stems from a biased perspective, primarily that of the dominant classes and power bases. The historical context referenced in this paper predominantly reflects an elitist viewpoint, as seen through figures such as Plato and Aristotle.

It is important to question whether traditions that promote good health, such as connectivity through endogamy, might also be sources of ill health for the powerless and oppressed. For example, practices like forced marriages and the reinforcement of social hierarchies by the powerful can lead to negative health outcomes. Additionally, while philosophers like Plato and Socrates advocated for ideals such as calmness and moderation, they were affluent individuals with slaves and thus exempt from the daily hardships that distressed many people.

Although the lessons derived from historical figures remain valuable and resonate with modern lifestyles, it is crucial to recognize that many of these aspirations remain unattainable for the masses today, much like in ancient times, due to prevailing power dynamics. These unmet aspirations can become sources of stress and illness, as upstream determinants prevent people from accessing good food, maintaining meaningful connections, and having time for rest.

Nevertheless, the integration of tMedL into health practices holds promise for a holistic and personalized approach to well-being. However, it is imperative to critically evaluate and define its health effects through systematic research, ensuring that its potential benefits are maximized in the pursuit of a healthier and more fulfilling life.

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### Conflicts of Interest

The authors declare no conflicts of interest.

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Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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