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# Lifelong Healthy Habits and Lifestyles

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## Abstract

The expression “lifestyles” describes several expressed behaviors, usually in the form of consumption and behaviors patterns, which characterizes how an individual or group fits into society. Although, with the advancement of science and the facilitation of human tasks in the daily living, there is a reduction in mortality from infectious diseases and an increase in longevity, however the appearance of chronic-degenerative diseases that negatively affect the quality of life have been found when some behaviors, defined as “good” lifestyles are not considered. The lifestyles could be defined as a set of mediating structures that reflect a totality of activities, attitudes and social values closely related and that depend on economic and social conditions, education, age, among other factors. It manifests historical and cultural experiences and emerges from a set of decisions, over which the subject assumes control, thus, the lifestyle is revealed to be fundamental in the promotion and protection of health. This chapter intends to describe how healthy lifestyles could be considered adequate through our living period since young ages, maintaining and distinguishing them during adulthood and making them useful in older ages.

**Keywords:** Lifestyles, Habits, Exercise, Physical Activity

## 1. Introduction

Healthy lifestyles constitute an obstacle to disease [1] and include preventive health, good nutrition and weight control, leisure, regular physical activity, periods of rest and relaxation, the ability to face adverse conditions or situations and to establish affective and solidary relationships, adopting a posture of being and being in the world with the objective of living well [2]. Historically, the study of healthy lifestyles can be marked until today by three major periods: a first period beginning in the 19th century, until the middle of the 20th century; a second period, which closes the second half of the twentieth century and a third period which focuses on the present. During the first period, studies stand out [3–5] that healthy lifestyles, dependent on a sociological view and individual factors, of the individuals who were part of the social strata that could keep. In the second period [6, 7], several authors reported an incorporation of healthy lifestyles in health and studies on what are isolated, seemingly condoning or conducive to a style or a healthy lifestyle. In the third period, there was a development up to the present [8, 9], that reflect healthy behaviors integrated in different contexts, or even the relationship of

different dimensions with healthy lifestyles, such as motivation or basic psychological needs, seeking to perceive self-determination for a given practice and the adoption of healthy behaviors.

In relation to healthy lifestyles, we use the terms healthy lifestyles and health-related lifestyle synonymously, encompassing both behaviors that enhance health (practice of physical activity, adequate eating habits and resting habits), such as those that harm it (drug use) [10]. Considering that the behavioral patterns acquired in the early stages of life are likely to be maintained during adulthood [11], those adolescents who finish their educational stage integrating a healthy lifestyle will tend to be adults with less probability of exposure risk factors [12]. A study conducted [13] showed the prevalence, throughout life, of healthy and unhealthy behaviors, initiated in childhood or adolescence. Of these, healthy behaviors stood out: eating habits, physical activity habits, resting habits, accidents and their prevention and the practice of free time activities. As unhealthy behaviors, the study showed the consumption of alcohol, tobacco or medication. Currently, the healthy lifestyle construct has a close relationship with the modern food pyramid and is investigated according to multivariate models, which involve quality of life or the absence of disease [13]. There are several examples of programs to promote physical activity as a mean of promoting a healthy and active lifestyle, namely The Sports Play and Active Recreation for Kids (SPARK); Health Behavior in School-aged Children (HBSC); Healthy Lifestyle in Europe Nutrition in Adolescence (HELENA); Strategy for Nutrition, Physical Activity and Prevention of Obesity (NAOS); Lifestyle Education for Activity Program (LEAP); Adolescents' Nutritional Status and Valuation (AVENA); Forum Ghana Salud; Global Movement for Active Aging; Health is in the Movement; The Ever Active Adults (EAA); The Exercise "Take Care" in the province of Extremadura; Physician-based Assessment and Counseling for Exercise - PACE; Peso program, the latter two, both in Portugal.

These studies reflected in this chapter will demonstrate the importance of a healthy lifestyle, which should be started very early and continued throughout life. It presents the main actions and behaviors related to a healthy lifestyle, as well as control parameters for metabolic and bio-feedback variables. However, certain adaptations can be made as to the instruments for assessing and quantifying lifestyle, as there is still no standard and unalterable method that provides maximum fidelity for the assessment of a healthy lifestyle. It also becomes evident that some investments must be made in terms of public health, since the practice of physical exercises is a habit that must be part of the daily life of the human being and that age should not interfere when it is desired to have a healthy life.

## **2. Historical perspective**

The globalization of social activity was a worldwide process for developing genuinely ties that relates an involvement of events and social relationships with the contexts of each location [14]. On the other hand, we should also not neglect the environmental dimension because the problems that exist in it have repercussions on the level of the global lifestyle, reflected in the awareness and extent of the potential risks of an ecological crisis that induce practices and lifestyles, and thus, new forms of culture, which can both contribute to new social alignments, as well as to reinforce individualization processes in the social insertion of its individuals [14].

Another aspect that had a great impact on the social changes and lifestyles of more contemporary populations was, without a doubt, the access of women to the world of work outside their homes. The woman who, for many generations, has been mainly engaged in domestic activities, starts to work outside, side by side

with her husband, in equal circumstances, making this phenomenon a clear sign of emancipation. Home life is transformed, there is a need for more direct help from husbands in household chores and the education of children, the economic capacity of families improves and they have a better purchasing capacity that will be reflected in the acquisition of goods and services that would otherwise be prohibited [14]. Lifestyles correspond to a set of standards of conduct that characterize the general way of life of an individual or group. It is also mentioned that the concept of “lifestyles” when related to health, should be understood in a broad dimension, encompassing different living standards of citizens, as well as the cultural context in which they live and social dynamics, psychological and historical aspects of that environment [15].

Lifestyles were interpreted as “the material expression of the way of life, personal ideas, intentions and vital projects, in short, they are the way in which each individual organizes his life. Ways of life based on identifiable patterns of behaviour determined by the interaction between the individual’s personal characteristics, social interactions and socioeconomic and involvement conditions” [16]. The behavior patterns mentioned in the definition are, frequently tested and interpreted in social situations, and are therefore subject to frequent modifications. The term “lifestyle” is somewhat diffuse, because different sociological ideas coexist that, although starting from homogeneous premises, present different approaches:

- The psychological-evolutionary approach starts from the idea that lifestyles are determined by basic and supplementary needs, as well as by the framework of individual values whose variation will determine social change [16].
- The socio-structural quantitative approach that studies lifestyles as forms of consumption where the feeling of freedom of choice predominates in the consumption of different goods and services [16].
- The qualitative approach that bases its analysis on the perception of the subject’s daily life, considering in what way, work, free time and family (...) determine their opinions, attitudes and conduct [16].
- The theoretical approach based on social classes that is based on economic differences and their influences on the systems of values and attitudes. In this sense, the existence of a close relationship between the class structure, the set of cultural guidelines and the model on which culture is based to reproduce the class structure of modern societies is highlighted, [14]. Between 1981 and 1988, although there were different approaches on how to understand lifestyles, the important thing is: “looking at lifestyles and being able to see all differences simultaneously as something personal and social with great doses of originality and privacy but first of all, as something socially constructed” [17, 18]. In view of the opinion previously expressed, we can say that lifestyles can be seen as something individual or grouped, thus being able to speak about the lifestyle of an individual, group or culture [14]. The lifestyle constitutes a general way of life as the interaction of living conditions, in a broad sense and the individual standards of conduct determined by socio-cultural factors and personal characteristics [19]. Lifestyles are linked to values, motivations, opportunities and specific issues related to cultural, social and economic aspects [16]. The expression “lifestyles” describes a set of expressed behaviors, usually in the form of consumption patterns, which characterize the way in which an individual or social group fits into society [16]. This was an expression that originated from research inherent to non-infectious diseases, mainly in developed

countries [20]. Although, with the advancement of science and the facilitation of human tasks, there is a reduction in mortality from infectious diseases and an increase in longevity, but on the other hand, the appearance of chronic-degenerative diseases that negatively affect quality of life [20].

### **3. Lifestyles through life**

There are some opinion differences in those who defend the approach of changing behaviors towards healthier lifestyles and those who advocate changing the physical and socioeconomic environment for better health. Initially, [21] it was justified the need for these two determinants: lifestyles and the environment, since both are somehow interconnected, since to change individual behavior, favorable environments are also necessary for the it is carried out. Setting the example of a sedentary person who intends to start exercising regularly, he must have conditions of a social environment conducive to being able to do it (time), but also physical conditions (sports facilities).

According to this, the characterization of lifestyles is fundamental, since inadequate habits can be reflected in health problems, which is why it is important to have preventive and constructive education from both the family and the sports environment. Sport and physical activity are basic pillars of education and health promotion, as well as healthy lifestyles [22]. Healthy lifestyles can also be identified as a set of relatively stable patterns of conduct, by individuals or groups, that are beneficial to health [22]. It is also mentioned that a healthy lifestyle is what manages or maintains health, which is multifactorial in nature, including physical, mental and social dimensions [23]. There are also other positive and negative factors in lifestyle that affect our health and well-being, in the short and long term, namely from middle age (40–60 years), our mobility [23]. People's autonomy and quality of life are directly associated with lifestyle variable, presented on the "Pentacle of Well-being" [24]. In the early 90's, several authors tried to join efforts to clarify the concept of healthy lifestyle, its variables, as well as ways to promote health. The main variables in the studies on healthy lifestyles carried out between 1987 and 1993 were: Alcohol consumption; Tobacco consumption; Eating habits; Physical activity; Consumption of drugs and medication; Resting habits; Accidents and risk behaviors and their prevention; Dental hygiene; Medical exams; Free time activity; Sexual conduct; Hygienic habits; Others [24].

The lifestyle is defined [25] as a set of mediating structures that reflect several of activities, attitudes and social values closely related and that depend on economic and social conditions, education, age, among others. Other factors. It manifests historical and cultural experiences and emerges from a set of decisions, over which the subject assumes control, thus, the lifestyle is revealed to be fundamental in the promotion and protection of health. It is an analysis that is based on healthy lifestyles, considered as ways of life that consider and understand aspects such as harmonious relationships, self-esteem and good communication, which directly influence the quality of life of each individual [26]. In the last decade, the values of blood pressure and obesity in children and adolescents increased exponentially, such as the body mass index, which promotes these same characteristics in adulthood, namely due to the lack of habits or specialized activity programs. [27, 28] A large part of the population does not control their weight in a healthy way without limiting their calorie intake even though maintaining a regular level of physical activities [28]. Eating a varied diet rich in vegetables, reduce the total amount of calories ingested [29]. Children's sports practice is of great importance in promoting values such as discipline and motivation to overcome obstacles during

the course of life [30]. Physical activity has a predominant role in behaviors that promote a healthy lifestyle, since childhood. In modern civilizations, automation and computer technology have made every day physical tasks simpler and easier. Leisure activities such as television and computer games have also reduced the amount of time to be more physically active [28]. However, these forms of leisure do not show more physical effort, so it is needed a regularly exercise for our body, so that the variables of physical inactivity do not harm our state of physical and mental health. To have that, it is recommended the performance of routine tasks, resulting in improvement quality of life [28]. The model of a healthy lifestyle is not a definition. In general, the lifestyle considered healthy is one that in its context promotes a lower probability of diseases and disabilities [28]. Healthy lifestyles are structured around a set of behaviors that create interest in the individual and which prevail over other, less healthy behaviors [28]. There are others associated with the concept of lifestyle, to better understand how various behaviors fit the current health model [31]. It is important to understand several terms and concepts, such as health, physical activity, physical fitness, food, sleep quality, rest habits and others. It is well documented that participation in physical activity on a regular basis is an important factor in improving the quality of life, as it is essential for the body to function and develop in a healthy way, [31]. Changes in lifestyles have significantly positive effects on long-term health [27]. It is easy to see that there is a close conception between a healthy lifestyle, the levels of physical activity of each individual and their behaviors.

In a comparison between practitioners and nonpractitioners of physical activity, and between genders, among college students it was found better indicators of lifestyles in students who practice physical activities, meaning that this variable is a determinant for a healthy life [32]. The study demonstrated also that resting heart rate has a positive association with physical activity and the lifestyle variables such as diet, respect for meals time and resting habits [32]. Is important to practice these healthy lifestyles in early adulthood, so that these practices, all together, can be maintained through life. In a study with 150 surf practitioners it was reflected that, according to the years of practice that young surfers had, the better their physical activity levels were, also a lower prevalence of sedentary habits better sleeping habits [32]. Also, the surfers who were competitors demonstrated to be more physically active, to have a lower prevalence of sedentary habits, a better control of their sleeping habits and risk factors (alcohol and tobacco) [28]. In adult practitioners, surfers with more years of practice had better care in feeding and were more physically active [32]. Analyzing all practitioners in general, the best results obtained were revealed in the context of nutrition, physical activity, preventive behaviors and social relationships. In terms of health education, this field has shown concern mainly with changing lifestyles, to instil in people the alteration of their habits, to better adapt to the environment in which they live. As an alternative to this way of acting and living, two different and complementary perspectives on education and health promotion emerge: the information provided to people, so that they can consciously choose and by their own choice, and the creation of physical and socioeconomic structures favorable to the practice of these healthy lifestyles [33]. Modern habits, such as exposure to stress, smoking and lack of adequate sleep are not considered healthy, because due to these, the increased risk of cardiovascular diseases, some types of cancer and the risks of mortality stand out among the main factors [33]. It is a percentage higher risk in smokers, as well as mental and physical tiredness resulting from insufficient number of hours of sleep or quality of sleep [34]. Sleeping habits have an influence on physical and emotional well-being, which in turn, influence quality and lifestyles [35]. The number of hours slept becomes a fundamental indicator of health and well-being, since sleep is a state that offers

the individual a feeling of physical and mental rest, allowing him to perform in good physical and mental conditions the tasks of the patient next day [36]. The quality and quantity of sleep time will be determined by sleep habits, which occur between bedtime and waking up. One of the main benefits of sleep for sports is the physiological capacity for muscle recovery that occurs when we sleep [37]. Analyzing sleeping habits between genders, it was found that women have more sleep problems, as sleep latency is higher in women than in men, justified by the influence of hormonal variation of the female organism, and this aspect has been seen as a tendency [38–40]. These factors can also result from increased pressure in work activities and psychological stress with more impact on women in the dual role of mother and professional, since they work in periods that should be intended for rest [41].

In a study with veteran athletes the dimensions of lifestyles with the highest percentage were balanced diet and respect for mealtimes, followed by resting habits, as well as in other studies found, where the two dimensions that revealed the greatest concern for the participants in the study were balanced eating and resting habits, including sleep [42].

### **3.1 Motivation, lifestyles and gender**

As previously mentioned, the term quality of life is treated and analyzed from different perspectives, namely through science and common sense, from an objective or subjective point of view and in individual and collective approaches. It is a concept focused on the ability to live without disease or to overcome difficulties related to states or conditions of morbidity [43]. Regarding the differences between genders, this subject has always had different interpretations and continues to be the object of study in several areas of knowledge [44], since opinions are divided at national and international level and point to a good amount of data indicating the existence of very significant differences between men and women. More studies reveal [45] that male individuals have a higher quality of life in general, when compared to the female gender. For the realization, intervention, practice or adoption of behaviors aimed at the feasibility of other healthy lifestyles, it is necessary to feel and realize that there must be an internal and personal change, that is, a motivation for such behaviors [46]. It is important to understand the concept of motivation, since it is one of the most central concerns of any human activity, proving to be beneficial both at a biological and psychological level [47], as well as giving energy and direction to behavior [48], assuming a leading role in all contexts of human life [49]. When we approach the context and concept of motivation, it is important to remember that the reason is the basis of the motivational process, being, therefore, the essential element to trigger the initiative and subsequent maintenance of the activity performed by man [50]. Following this perspective, it is stated that motive is an internal factor, which initiates, directs and integrates a person's behavior, and relates motivation to reason, as an intrinsic strength, an impulse, a purpose, leading the individual to act in a certain way, directing his actions and the intensity of efforts to reach a goal [50]. Motivation is conceived as the dynamic object of behavior, through which one seeks to understand the process of orienting behavior towards preferred situations and goals [50]. It is one of the fundamental psychological skills inherent in sports and determinants in the psychological profile of athletes, being one of the factors that drive certain behaviors to achieve certain goals [51]. Motivation is characterized as an active, intentional and goal-oriented process, which depends on the interaction of personal (intrinsic) and environmental (extrinsic) factors [52]. According to this model, motivation has an energetic determinant, which corresponds to the level of activation, and a determinant of the

direction of behavior, as is the case with intentions, interests, motives and goals. Therefore, motivation can be classified in two ways: intrinsic motivation, which refers to the rewards that originate from the activity itself and related to instinct factors and needs; and extrinsic motivation, referring to the rewards that are not obtained from the activity, but are the consequences of the same, such as the status and affirmation [53].

Intrinsic motivation results in high quality learning and creativity, being especially important in the details of factors and forces that engender or compromise it [54]. It is the basis for growth, psychological integrity and social cohesion, it is also a natural tendency to search for novelties, challenges, as well to acquire and test your own abilities [54]. It is mentioned that intrinsically motivated individuals are more likely to be more persistent, to present higher levels of performance and to perform more tasks than those who require external reinforcements [55]. In the case of physical activity, individuals can also participate and compete sports for intrinsic reasons, for example, when they feel satisfied with learning new techniques in their modality. According to several authors [56–58] the intrinsic motivation can be classified taking into account different dimensions, such as: intrinsic motivation to know, when athletes are happy to learn something new, as a new technique; intrinsic motivation to perform, when the activity experienced generates pleasure and satisfaction in the accomplishment of something, such as, for example, trying to master a certain technique that we consider more complicated; and intrinsic motivation to stimulate the experience, when an activity starts as a way to experience the sensations derived from it, such as pleasure, fun and joy [56–58]. On the other hand, extrinsic motivation comes from external factors, in the form of positive and / or negative reinforcements, such as, for example, when athletes participate in competitions only to obtain recognition from coaches and/or family members. This refers to a diversity of styles that range from external regulation to integrated regulation, characterized by individual action goals, being directed by some consequence separately [59]. External regulation is characterized by the search for external incentives to practice, and the individual is committed to the task only to achieve a reward or avoid punishment [60]. This represents extrinsic motivation as it is traditionally defined, being the least self-determined form of extrinsic regulation. Other perspectives [61–63] revealed that male individuals have higher levels of lifestyles in general, when compared to females, however, more studies [64] found that, despite the fact that women have a state of depression higher than that of men, it can be the product of family attitudes, community and society in general, as a way of protecting or abusing people. Also [65] women feel less tense, happier, with more energy and have higher levels of mental health, since programmed physical activity helps to improve both physical and psychological taste and well-being the same.

Regarding situations that most favor the quality of life, [66] female gender establish a group's unity, the good relationship with others, the experience and competence of the coach and positive feelings, which proves that the stronger the identification of women with the group of athletes, with the coach and with the technical team, the greater the dedication, persistence and discipline for training [66–68]. Women need more emotional feedbacks and social support than men. For them, the most important situations are dedication in training, positive feelings and a winning attitude, hence they present high levels of competitiveness. Addressing the topic of motivation takes us to a context of Self Determined Theory (SDT) and Basic Psychological Needs. SDT argues that individuals are active organisms, with an inherent tendency for psychological development and growth, which through various challenges stimulates and increases their capacities [69]. This is a theory that has grown regarding the study of motivation, as it explains what the pillars of motivation (intrinsic and extrinsic) are, as well as the factors related to its

promotion [70] considering the personality factors in social contexts and the causes and consequences of self-determined behavior [71]. People need to feel competent and self-determined to be intrinsically motivated, and as mentioned above, the subject's motivation is related to the satisfaction of three basic psychological needs: autonomy, that is, the need to feel independent, to the extent that that it is the individual himself who regulates his needs; competence, that is, the need to feel competent, to interact successfully according to the stimuli of the environment; and relationship, that is, the need to feel connected to others, that is, to be considered and appreciated [70]. In this way, we can say that it is these three psychological needs that explain the regulation of people's behavior, which is established in a motivational continuum, ranging from the lack of regulation or lack of intention to act, through the most controlled forms and ending in the forms more autonomous of motivation [71]. The theory of self-determination proposes that motivation varies over a continuum and that it takes different forms according to different levels of self-determination, with intrinsic motivation at one end, characterized by high levels of self-determination and in which, when carrying out an activity, there is no demand to achieve external rewards [72] and, on the opposite, there is demotivation characterized by the lowest level of self-determination, which corresponds to the absolute absence of both motivation intrinsic as extrinsic [73]. Intrinsic motivation is among the most important factors for maintaining exercise behavior and people who intrinsically regulate their motivation, demonstrate greater persistence, commitment, effort and pleasure in the activities they perform [54].

According to the relationship between gender and motivation [60], a study with veteran male athletes showed higher levels of motivation and introjected regulation than female athletes, that is, they are individuals who are involved in the practice of physical activity but fail to value it or simply practice it. to avoid internal pressure [73]. In turn, it is the female gender that has higher levels of external regulation, identified regulation and internal regulation [73]. As for basic psychological needs, we found that there are significant differences between genders, as the female gender has higher average values in the three dimensions: autonomy, competence and relationship, that is, veteran athletes feel that they are given the possibility to choose from the different sporting situations and in the face of behavior, they feel able to practice physical activity, as well as being able to obtain a positive relationship with other athletes [73]. It is the athletes who have higher levels of intrinsic motivation who feel more competent and autonomous [71]. Thus, we can say that the female athletes surveyed have higher levels of psychological well-being in relation to male athletes, as they obtained higher values of satisfaction with life and positive affections. Other results in veteran athletes, where the evaluation of the perception of satisfaction and the basic psychological needs for autonomy lead to behaviors motivated autonomously, promoting these, better eating habits and rest, as well as high satisfaction with life, and a lower consumption of tobacco [74]. Autonomous motivation has not proved to be a significant mediating variable between the basic psychological need for autonomy and lifestyles and satisfaction with life.

Another model proposed [75] also analyzed the predictive capacity of intrinsic motivation on the development of positive behaviors, finding that the most self-determined motivation positively predicts the variables of lifestyles that enhance health. In that model [76], people with higher self-determined motivation tended to perceive more advantages from physical exercise and a better quality of life. In addition [77] intrinsic motivation was crucial for the development of healthy habits such as eating and resting habits in adult and elderly women and, in this same population subject to study, [78] it was found that the promotion of intrinsic motivation positively favored eating habits. In a study conducted [78] with Physical Education teachers it was determined that to satisfy the basic psychological needs

of the students during the sessions, the students developed a more positive motivation, and at the same time, they were able to commit to behaviors associated with the contents taught in this discipline, such as the adoption of healthy lifestyle habits, being able to integrate those behaviors into their lifestyles. It was relevant to carry out cooperative and collaborative games in PE classes to encourage teamwork and, in by this, favor interpersonal relationships with a better feeling of affiliation to the group [75]. All these factors determined a more self-determined motivation of the students towards this field, which lead to a greater prediction of variables that enhance healthy lifestyles. Regarding the relationship between gender and motivation, significant differences were found in another study [46] where female gender had higher levels of external regulation. Regarding the basic psychological needs, there were significant differences between genders, since the male gender presented higher mean values in the three dimensions: autonomy, competence and relation, that is, the male students felt able to obtain a positive relationship with others. According to that, male students present higher values of life satisfaction, women are more vigorous and have higher levels of mental health, since physical activity is an essential factor for their physical and psychological well-being [46]. However, it was the male students who presented higher mean values of life satisfaction. Also, it can be found that the variable that correlates directly with intrinsic motivation towards practice is the intention to be physically active [79]. The practice of physical activity involves other habits related to a healthy lifestyle [80]. However, there are several studies [81, 82], that support a direct relationship between intrinsic motivation and the intention of future practice. There is a direct relationship between intrinsic motivation towards the intention to be physically active. The gender motivations differences exist, determining that in younger ages women tend to have more orientation and greater intrinsic motivation towards the practice of healthy lifestyles [83]. Men, also, tend to have more orientations towards the ego, and therefore a more extrinsic motivation. Women have a healthier diet than men, but as age advances, this diet improves in quality, especially in men, [84]. Other studies with active adults showed high levels in basic psychological needs and autonomous motivation, and lower values of controlled motivation and amotivation [51, 52]. In terms of lifestyles, it has revealed high levels of nutrition habits and rest, and lower values of tobacco consumption. The basic psychological needs showed positive and significant correlations with autonomous motivation levels, nutrition habits and rest [84]. Levels of satisfaction with life showed significant and positive correlations with autonomous motivation levels and positive affect, and negative correlations with controlled motivation and amotivation [84]. Also, nutrition habits and rest are predicted positively by autonomous motivation, as well as the basic psychological needs, showing healthy lifestyles related to the self-determination. This self-determination results from the motivation factor as one of the fundamental psychological skills inherent in sports practice and determinants in the psychological profile of athletes, being one of the factors that lead to certain behaviors to achieve certain goals, or that is, motivation is characterized as an active, intentional and goal-directed process, which depends on the interaction of personal (intrinsic) and environmental (extrinsic) factors [51, 52]. According to this model, motivation has an energetic determinant, which corresponds to the activation level, and a determinant of behavior direction, as is the case of intentions, interests, motives and goals. It's also revealed that motivation is a skill that depends on the interaction between personality and environmental factors, such as facilities, attractive tasks, challenges and social influences, not forgetting that over the years, the importance The personal and situational factors mentioned may change depending on current needs and opportunities. In another view, motivation is an internal state regulated by needs that activate or arouse behavior aimed at satisfying

those same needs [85]. The concept of motivation encompasses all psychic processes and states, including the totality of needs, impulses, aspirations, voluntary motions, moods, affections, and emotions. We can also consider it as the cause of movement and change, as well as the totality of forces that trigger, direct and maintain behavior towards a goal. Motivation is seen as a socio-cognitive process in which individuals become motivated or demotivated through the assessment of their skills in a context of achievement and the meaning of the context for the person in the last years [86]. Motivation is also understood as a set of biological and psychological mechanisms that enable the triggering of action, orientation towards a goal or to move away from it, the more motivated the person is, the more persistent and greater the activity [87].

As for other lifestyles analyzed [41] it was shown that the female gender had better results than the male gender, showing significant differences regarding food and hours of rest, as it is the female athletes who eat a more balanced diet, they respect the hours of food and rest, and, although without significant differences, they still consume less tobacco. It was found that the female gender has a more balanced diet, consuming more fruits and vegetables than the male gender, which in turn, consumes more sweets [87]. According to resting habits, contrary to what the literature says, it is women who have higher values, so and since this is directly related to food [88]. Women had a more balanced diet, they also felt that they were able to have more regular sleep habits. Continuing with gender comparison, [46] male students were identified with more favorable values for eating habits, resting habits, and Resting Heart Rate than female students. However, male students had higher values of alcohol and tobacco consumption with significant differences [88]. In the comparison between physical activity practicing and nonpracticing students, those who practice physical activity present the best lifestyles with differences in eating habits and RHR. This study suggested that male students give more importance to energy and nutritional consumption because it is essential for the maintenance of performance, body composition, and health.

In other investigations [89] high evaluations have been obtained in eating and resting habits and lower evaluations in tobacco consumption, [90, 91]. These investigations lead to adopt the idea that individuals highly connected to sports or physical activity assume behaviors related to healthy lifestyles and eliminate others that are limited for health behaviors. In relation to a balanced diet, most studies [92, 93] show that women have a healthier diet than men, but as age advances, this diet improves its quality, especially in men. In terms of eating and resting habits, [94] its confirmed that the female gender shows significantly better behaviors as well as a non-significant lower consumption of tobacco, [95, 96] also stressing that intrinsic motivation is crucial for the development of healthy habits, such as adequate eating and resting habits, particularly for adult and elderly women. In this segment, we can also mention that women are more concerned with their psychological and physical health and well-being than men, as it is women who give greater importance to adequate intervals of food and rest /rest, a since the existence of excessive training loads and competitions combined with insufficient recovery can cause a series of health disorders, such as physical and mental tiredness, injuries, muscle fragility, physical pain and discomfort, ultimately affecting the quality of life of the athletes [97].

### **3.2 Instruments to evaluate lifestyles**

To evaluate lifestyles, instruments were created and used in research to measure several contexts of healthy lifestyles, we highlight those set out in **Table 1**, as well as the measured variables and the population of incidence in the respective validation process.

Questionnaires	Variables of healthy lifestyles	Population
Questionnaire CHVSAAF (Cuestionario de Hábitos de Vida Saludables de Alimentación y Actividad Física) [98]. (Questionnaire of healthy Lifestyles of food and physical activity – Spanish version)	Healthy food and physical activity	8 to 12 years of old.
Escala de Qualidade de Vida de [99]. (Quality of Life Scale)	Economic well-being, family life, education and idleness, media, religion and health.	Teenagers (from 13 years old)
Escala de Satisfação com a Vida [100] (Satisfaction with life scale)	Satisfaction with life	Teenagers and Adults
The Health Behavior in School Children: HBSC. [101]	Physical Activity, healthy food, tobacco consumption, alcohol and drugs, personal hygiene and sexual education.	Teenagers (11 to 17 years old)
Índice de Estilos de Vida [102]. (Lifestyles Index)	Consumption of Tobacco, alcohol, cannabis, healthy foods, insane foods, physical activity and sport.	Teenagers
Physician-based Assessment and Counseling for Exercise: PACE [103]	Physical Activity	Teenagers
Inventario de Actividad Física Habitual en Adolescentes (IAFHA) [104] (Inventory of Usual Physical Activity in Adolescents - Spanish version)	Physical Activity during school time; physical activity in a leisure context; physical activity in sports practice.	Teenagers (14 to 18 years)
Questionnaire ESVISAUN (Estilos de vida y salud en estudiantes universitarios: la Universidad), [105] (Lifestyles and health in university students: the University – spanish version)	Sociodemographic data, perceived health status and quality of life, physical activity, tobacco, alcohol and other drugs, eating habits, sexuality, safety, dental hygiene, illness and disability and health promotion at the university.	Teenagers
Cuestionario de Estilo de Vida Saludable en Estudiantes de Postgrado [106] (Questionnaire of healthy Lifestyles in post-graduation students – spanish version)	Sports, food, sleep and rest.	Post-graduation students
Cuestionario de Estilo de Vida Saludable en Estudiantes Universitarios [107] (Questionnaire of healthy Lifestyles in post-graduation students – spanish version)	Ludic and sport activities, academic and family satisfaction, food consumption.	Post-graduation students
Teachers' Perceptions and Attitudes to Health Education Questionnaire: TPAHEQ [108]	Smoking, resting habits, alcohol consumption, physical exercise, own health status and attitudes towards personal health.	Adults

<b>Questionnaires</b>	<b>Variables of healthy lifestyles</b>	<b>Population</b>
Questionarios de Prácticas y Creencias sobre estilos de vida [109] (Questionnaire of practices and beliefs about healthy lifestyles – spanish version)	Practice of physical activity and sport, leisure time, self-care, eating habits, consumption of psychoactive substances and sleep.	Adults
Global Physical Activity Questionnaire: GPAQ - 2.0 [110]	Physical Activity	Adults and elderly
Questionario para determinar los Estilos de Vida (IMEVID) [111]. (Questionnaire to determine healthy lifestyles – spanish version)	Physical activity, nutrition, alcohol and tobacco consumption.	General population
Questionnaire FANTASTIC [112]	Family and friends, Physical activity, Nutrition, Tobacco consumption, Alcohol consumption, Sleep and stress, Personality type, Introspection, driving to work, other drugs.	General population
Versão Preliminar do Questionário de Estilos de Vida Saudáveis - EVS [113] (Preliminary version of healthy lifestyles questionnaire – spanish version)	Tobacco use, alcohol consumption, consumption of other drugs, respect for mealtimes, maintenance of a balanced diet	High school students
Questionário de Estilos de Vida Saudáveis - EVS [114] (Healthy lifestyles questionnaire – Portuguese version)	Eating habits, resting habits and tobacco consumption.	Veteran athletes (from 30 years old)
Cuestionário de Estilos de Vida Saudables - EVS [115] (Healthy lifestyles questionnaire – spanish version)	Tobacco consumption, rest habits, respect for mealtimes, and maintaining a balanced diet.	Persons between 14 and 88 years old
Questionário de Estilos de Vida Saudáveis - EVS II [116] (Healthy lifestyles questionnaire – Portuguese version)	Balanced diet, Respect for mealtimes, rest habits, consumption of other drugs, consumption of alcohol and consumption of tobacco.	Veteran athletes (from 30 years old)
Healthy Lifestyles Questionnaire (CEVS-II) [117]	Balanced diet, Respect for meal schedules, Rest habits, Tobacco consumption, Alcohol consumption, Consumption of other drugs, Physical activity.	Persons between 14 and 88 years old
Questionário de Estilos de Vida Saudables - EVS [118] (Healthy lifestyles questionnaire – spanish version)	Balanced Diet, Respect for Mealtimes, Tobacco consumption, Rest Habits.	Ecuadorian university students

**Table 1.**  
*Healthy lifestyle questionnaires.*

All these studies demonstrate the importance of a healthy lifestyle being started very early and continued throughout life, and define the main actions aimed at a healthy lifestyle, as well as parameters of controls for metabolic variables. However, reservations should be made regarding the instruments for assessing and quantifying lifestyle, as there is still no gold standard method that provides security for assessing a healthy lifestyle. Thus, we suggest the continuation of studies to continuously assess lifestyles, with the possibility of including or excluding other variables, or of them in different contexts, whether economic, social and educational.

#### **4. Sedentary behaviors**

Whether in the dimension of scientific knowledge production or in the broad context of professional intervention in areas related to physical activity, health and well-being, it is of utmost relevance to begin this subchapter with a clarification of terms. In the scientific literature, the term 'sedentary' is used with the intention of characterizing those individuals who do not adhere to daily physical activity recommendations.

Sedentary behavior is characterized by behaviors with energy expenditure below 1.5 (METs) remaining in a sitting, reclining or lying position [119]. Unlike sedentary behavior, physical inactivity has been used to describe individuals who do not perform formal physical activity of moderate to vigorous intensity, that is, individuals who do not meet the specific recommendations for the practice of physical activity [120]. Sedentary lifestyle has been understood as the absence of physical exercise or very low energy expenditure (less than 1000 Kcal) [121]. From the time when man is a hunter to the present, there has been a drastic change in the way he lives. Recently, with technological and robotic advances, man has become even more inactive, in addition to starting to consume more tobacco and having an increasingly unhealthy diet [122]. With the industrialization process, the number of sedentary people increased due to the few opportunities for physical and sports activities, [123] and its prevalence is very high, especially in underdeveloped countries. Due to this technological and information advancement there was an increase of this inactivity, since there is a reduction in more intense activities at work and in daily activities that influence leisure hours, this is called sedentary lifestyle involuntary [124]. There are immense and multivariate factors that can determine a set of styles of physical activity, as previously mentioned by socio-demographic aspects (age, sex, socio-economic profile), psychological aspects (motivation and self-determination to change behaviors) and socio-cultural aspects (family, housing contexts, etc.) [124]. The various studies already presented try to highlight many of these factors that tend to be hierarchical and influence sedentary lifestyle in the various age groups [122]. Age is, in fact, a relevant factor, which may have a positive association with physical inactivity [122]. It is likely that some differences according to the type of activities (more or less vigorous) will decrease with the development of these people, with a decline in leisure activities and moderate intensity and an increase in activities of low intensity or activities considered informal. Regarding the types of physical exercises, men seem to be more involved in group practices, such as team sports and women choose more individual activities [125]. Another important and determinant aspect of sedentary lifestyle is the socioeconomic variable, in which people with lower income tend to be more sedentary, perhaps due to difficulties in investing in certain activities [125]. Combating a sedentary lifestyle should be a priority for the responsible entities. Previous studies show that sedentary behavior

accounts for a large portion of the daily routine of various populations (> 8 hours) [126]. Since the different recommendations for regular physical activity behavior suggest a daily reduction of sedentary behavior, the concept of physical inactivity as an alternative to sedentary behavior has been shown to be more appropriate to classify individuals who do not meet the recommendations for regular physical activity behavior of moderate-to-vigorous intensity [127]. Therefore, the determinants and consequences of excessive daily sedentary behavior on biopsychosocial health differ from the harms caused by physical inactivity.

Recently, the study of sedentary behavior in the world population has increased [128]. In recent years, the study of sedentary behavior in the world population (pediatric population, adult population and elderly population) has increased [119, 128, 129]. The evidence phases for sedentary behavior science have been guided by the Behavioral Epidemiology Framework and the following phases are distinguished: (1) identifying relationships of sedentary behavior with health outcomes; (2) measuring sedentary behavior; (3) characterizing prevalence and variations of sedentary behavior in populations; (4) identifying the determinants of sedentary behavior; (5) developing and testing interventions to influence sedentary behavior; (6) using the relevant evidence to inform public health guidelines and policy [129].

From a systematic review of the scientific literature, it can be concluded that excessive daily sedentary behavior is associated with a variety of health harms, including deterioration of physical fitness, diabetes, obesity, and depression [128]. In addition, excessive sedentary behavior is also associated with the risk of premature death [128]. However, it is important to consider the relationship between sedentary behavior and moderate-to-vigorous physical activity in relation to the deterioration of individuals' health. In this sense, it appears that the total volume of moderate-to-vigorous physical activity performed daily may mitigate the health harms of excessive daily sedentary behavior. Furthermore, the health consequences of excessive daily sedentary behavior appear to be more pronounced in physically inactive individuals [124]. Therefore, it appears that individuals who engage in excessive daily sedentary behavior and engage in less moderate-to-vigorous physical activity have a higher risk of mortality [124]. In contrast, individuals who exhibit fewer periods of daily sedentary behavior and demonstrate higher levels of daily moderate-to-vigorous physical activity have a lower mortality risk [128]. Scientific evidence thus suggests that excessive daily sedentary behavior is a risk factor for a person's physical health, considering the levels of moderate-to-vigorous daily physical activity. However, knowledge about the consequences of sedentary behavior on psychosocial health is still insufficient [127]. To clarify the consequences of sedentary behavior on mental health, we sought to identify and understand the consequences of sedentary behavior on the psychosocial well-being of elderly residents in Portugal [129]. As demonstrated by the study, a comprehensive understanding of the consequences of sedentary behavior on psychosocial health requires considering the different dimensions of sedentary behavior (the type of sedentary behavior, the interruption of sedentary behavior, the uninterrupted duration of sitting, and the frequency with which the elderly perform sedentary behavior). In view of the listed dimensions, sedentary behavior can be positive for maintaining cognitive functions, promoting positive affective states, and supporting social interaction. On the other hand, excessive sedentary behavior may also worsen psychosocial well-being and lead to mental fatigue and diminished social relationships.

In another direction, identifying the determinants of sedentary behavior is an essential step in scientific research. This step helps in the development of

interventions that reduce excessive daily sedentary behavior and increase the usual level of physical activity in different population segments [130]. Ecological models have been used as a theoretical framework to explain the determinants of sedentary behavior in individuals [131]. These models place great emphasis on environmental variables [131]. A shortcoming of these models is that they do not clearly emphasize the role that psychosocial variables can play in explaining sedentary behavior. However, ecological models can incorporate various psychosocial constructs to develop a more comprehensive framework that allows for the integration of multiple theories [132]. Thus, some psychosocial factors that may influence individuals' excessive daily sedentary behavior are highlighted below: [130] sedentary behavior may be determined by sedentary habits developed over the years; in another sense, positive representation, i.e., perceived satisfaction that individuals have from the different sedentary behaviors, may determine sedentary behavior; individuals may reduce the excess of daily sedentary behavior through physically active behavior (e.g., engaging in physical activity), which manifests compensatory health beliefs [133]; furthermore, social support may determine sedentary behavior in several ways. On the one hand, individuals' social support can discourage sedentary behavior. On the other hand, individuals may be encouraged by their social support to sit throughout the day. By understanding the health consequences of excessive sedentary behavior and some of its determinants, it becomes possible to present a range of strategies that can contribute to the daily reduction of sedentary behavior in individuals, within a logic focused on evidence-based practice. Thus, to minimize the health risks of excessive sedentary behavior, individuals can achieve a healthy balance between spending time on certain sedentary behaviors that may be beneficial for psychosocial well-being [129], engaging in low-intensity physical activity, and engaging in moderate-to-vigorous physical activity, leading to a reduction in excessive daily sedentary behavior [133, 134].

## 5. Conclusions

According to the subject pointed in this chapter it is enlightening that is necessary to maintain a physical and mental discipline, in the sense of feeling the need to change behaviors and maintain them, if they wish to contribute to a set of vectors of quality of life. Physical activity is a process that presents results that contradict a sedentary lifestyle, as it presents benefits at the physiological, psychological, social and mental level, in all age groups: children, adults, the elderly and special populations. It is understood that the practice of a set of behaviors considered as healthy lifestyles, previously identified, reveals positive effects that are effective in preventing hypokinetic, cardiovascular and psychological diseases, as well as promoting physical and well-being, that translates into the improvement of aspects directly linked to health and satisfaction with the individual's life. It is also noticeable that individuals with greater practice of physical activity show greater satisfaction in terms of their body image or greater predisposition to achieve it through food care. They reveal a greater consumption of fruits and vegetables, to the detriment of sweets, soft drinks and alcoholic beverages, that is, greater care with the type of food considered as a healthy habit. It is valid to affirm that the practice of behaviors considered as healthy lifestyles where physical activity is inserted influences all its variables in a positive way. In general, individuals whose parents do not smoke, usually do not consume alcoholic beverages and do more physical activity, even if sporadically. In this sense, the role of parents in adopting healthy lifestyles is very important, since they transmit a favorable image to their children

in the future adoption of these same behaviors. In the same way as individuals whose peers engage in physical activity practices are another determining factor. It is also important to promote levels of physical activity and reduce sedentary behaviors during periods of free time, but preferably with intervention strategies that consider the different interests and specific practices of practitioners. In this context, schools have a primary role in developing principles of attitudes linked to a healthy lifestyle by taking exceptional measures for an intercurricular approach to school in and for health. Some schools to promote healthy lifestyles offer students pieces of fruit after a Physical Education class. Despite this offer, it is also important to build a base of motor skills and the results of these good behaviors so that these experiences of activities on the part of children, adolescents and adults are pleasant, with the purpose of fostering continuous participation throughout the life process.. These factors seem to be particularly important to highlight the need to create programs that guarantee the adherence and maintenance of all these individuals in the practice of behaviors considered as healthy lifestyles. People should be encouraged to internalize the motivation to be active, if there are no examples of parents or close friends, they can continue with an active lifestyle.

## **6. For readers**

For the readers of this work, we leave as advice that, from an early stage, in children, it is important to understand the principles underlying healthy activity. As adolescents they must learn and be informed with the capacity to make decisions, capable of planning and implementing individual activity programs, periodically, reassessed and modified as they get older. To have a balance diet, be engaged in physical activity programs, respect mealtimes and resting habits, and, also very important, to have enough hours of sleep with quality are determinant factors for a lifelong healthy life. At last, a healthy lifestyle encompasses work relationships and family life, also determining factors for quality and life expectancy.

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## **Conflict of interest**

The authors declare no conflict of interests.

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