

## PHYSICAL ACTIVITY, FROM COMMON-SENSE ESSENCE TO ANCIENT PROBLEMATISATION, DEFINITION, INTERPRETATION AND GUIDANCE

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### Abstract

This paper examines physical activity and exercise as used for the health of the ancient Greeks. Records and testimonies from philosophers, trainers, physicians, athletes... guided people toward improving vitality through exercise. These sources contain historical facts relating to the maintenance of individual physical, psychological, social and affective health through movement and exercise. Conclusions about the continuous relationship between direct physical activity and exercise (PAE) and physical exercise and health (PEH) were reached through multifaceted analysis (historical, comparative, causal, semantic) and synthesis, as well as inductive and deductive reasoning. The subject of this paper is the common-sense recognition and deliberation on the significance of PAE for human health during the paleo society, its problematisation and application in practice leading to PEH. *The starting premise* is cognitively provocative, referring to the origins and utility of paleo science and practice in today's understanding and practice of PAE and PEH. Paleo philosophers believed that PAE, only in optimal amounts, i.e., the “measure of common-sense moderation,” can have a beneficial, positive effect on a healthy lifestyle for humans/athletes. Their frequent critical views on deviations from the common-sense essence of PEH were directed towards preserving the benefits of a healthy lifestyle—PEH. They believed that common sense (*bon sens*) represents the fundamental axiom for the development of “practical science,” through which the problems of the life of an individual, society and nature were understood, solved, and guided. Philosophers, physicians, and trainers were the most knowledgeable about the importance of PAE for a healthy lifestyle of an individual in ancient Greece! *The second premise*, although sporadically considered in this paper, contains meaning and expression for provoking modern science and practice of PAE and PEH, pointing out that there is a current tendency of individuals to relinquish the common-sense nature of exercise in favour of personal prophylaxis. The conclusion is that despite sometimes “aggressive” efforts of the society to institutionalise PAE to PEH, individuals continue to seek the factors of health, sustainability and survival (*conditio humana*). Although direct and simple life activity, PEH appears to be an unknown determinant of the quality of life, as if theories on nature and nurture in human development through PAE are not truthful.

**Key terms:** ANCIENT GREECE / PHILOSOPHERS / TRAINERS / PALEO SPORT / EXERCISE / HEALTH

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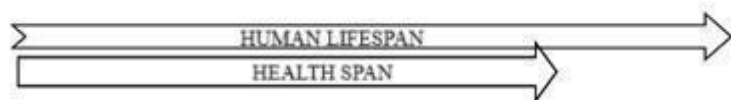
## THE NATURE OF PHYSICAL ACTIVITY AND EXERCISE

“Since we humans are of a physical, natural character and dependent on movement, perhaps the stimulus for the “great brain race” which changed the cranial and brain capacity, could have been the cause of crossing the Rubicon of evolution... Darwin also believed that evolution was conditioned by physical agility and intelligence that developed around hunting, i.e. that these factors have played a key role in the evolutionary matrix that made us human.” (Kretchmar, Dyreson, Llewellyn, Gleaves, 2020).

Evolutionary hypotheses and facts are filled with evidence showing how swimming, diving, and persistent running played a crucial role in shaping anatomical structures and the development of brain functions. Numerous evolutionary changes were caused by the triad of **Hunting and food foraging** (in water and on land) – **Play** – **Development of skills**. In light of the facts of evolutionary research, physical activity first, followed by physical exercise, was recognized as imperative to human development, i.e. physical activity is of primary importance for the optimal functioning and development of the brain through neuron proliferation, neurotrophic effects, glycogenesis, synaptogenesis, regulation of neurotransmission, reduction of systemic inflammation and modulation of the nervous system itself (Doherty, A., Miravalles, F.A., 2019).

Physical Activity (PA) of a human is defined as any bodily movement and/or motion involving skeletal muscles that results in energy expenditure. Physical and/or bodily exercise (BE), on the other hand, is voluntary, planned, repetitive physical activity aimed at maintaining and/or improving fitness and health (Lieberman, 2021). Human physical activity and exercise, in the context of this discussion, are viewed as *conditio humana* (what defines a human being) for sustainability and survival. They serve as a means of gaining life experience and self-awareness, developing abilities, learning skills and adopting values in accordance with the social effects of the mobile nature of humans (*vita activa*). Exercise has always been and remains a tool of human nature for constructing and for personal and social acceptance of the principles of various taxa of life (read as well as evolutionary) doctrine (Radojevic, Jevtic, 2011).

Through PA, humans have learned numerous skills, developed abilities and gained experiences and habits essential for understanding themselves and their environment. At a certain point in their development, they enriched their movement world with intentional movements—exercise (physical activity and exercise – PAE), which in a new and methodologically and didactically purposeful way, stimulated human biology, introduced them to learning and led to further development and determination of skills and abilities for everyday life (work, play, beliefs, sports, etc.), as well as survival (health, military skills and abilities). Therefore, to fundamentally understand the influence on human development, regardless of the period of human evolution, PAE should be viewed through at least three perspectives: (1) Common-sense perspective (learning existential skills and developing abilities of an individual and of species); (2) Methodological and didactic perspective, with implications for cultural evolution (exercise as intentional activity – bodily exercise, from ancient to modern sports, performing arts...); (3) Adaptation and co-adaptation, within the biophysical, psycho-social, intellectual and affective development domains, with outcomes in the modern world manifesting as the pursuit of longevity based on extending the health span (the period of life before any health disorder or disease occurs) and human lifespan. (See Figure 1)

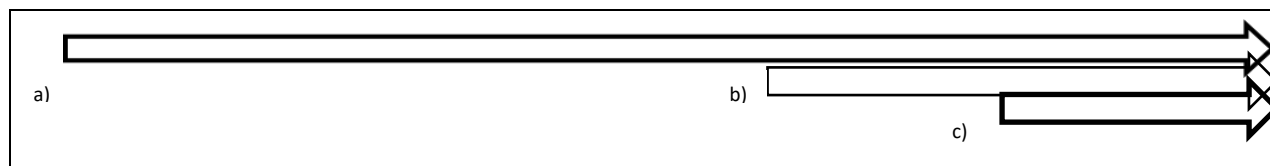


**Figure 1** Human lifespan and health span as longevity components (modification based on: Attia, P. 2023)

The study of the evolutionary capacity and influence of PAE belongs to physical, cultural, and linguistic anthropology. To better define the stimulus of PAE on the evolutionary trajectory and development of humans, and thereby arrive at a higher level of anthropological generalisation, it can be approached through: (a) understanding the *nature* of this process, which follows the laws and principles of nature; or (b) recognizing the *nurture*, primarily the effects of learning and the accompanying changes that occur through exercise for pleasure and/or necessity.

The extensive scientific productivity on the issue of physical exercise that we witness today can be described by dominant correlational direction of understanding of the nurture of humans, while causal studies of human nature are much less prevalent (Lieberman, 2021). In other words, conclusions relevant to anthropology regarding the essence and nature of PAE and its accompanying effects are mostly reached through rare causal studies, which are lacking and in which PAE is viewed integrally through an evolutionary context. In relation to this, Figure 2 presents an evolutionary continuum in which three aspects of PAE are recognized: (1) Common-sense, (2) Paleo-exercise, and (3) Contemporary, dominantly filled with commercialised exercise within certain social strata.

The modern definition, interpretation and direction of PAE is not the direct subject of inquiry in this paper, partly because the contemporary period is full of numerous conclusions, recommendations, and doctrines of questionable significance, character and influence on the lifespan and health span of humans. These include: (a) conclusions from the dominantly scientific-research domain of the so-called “Western world,” which, covering only 12% of the total population, is non-representative for making conclusions about the *nurture* of humans; (b) vulgar scientism; (c) institutionalisation, primarily through the “forced” organisation of PAE for children and youth; (d) extensive commercialization; and also evident (e) marginalisation of the social and humanistic nature of PA and exercise. In addition, the high commercialization of this area leads to the neglect of its occurrence in everyday life, within the family, backyard...as well as its importance in the processes of education, upbringing, health, and overall development (nurturing)... which should take place both within and outside of institutions. All in all, it seems as though humans are relinquishing (have relinquished) the common-sense essence of PAE, and that there is an ongoing process of negating the nature and evolution of the species through physical activity and exercise. As if the evolution of humankind has lost the “race” with cultural evolution. (See Figure 3)



**Figure 2** Physical activity and exercise on evolutionary continuum (a) through paleo period (b) to common sense marginalisation (c)

**Note:** a) necessity – common sense = physical activity for life; b) paleo and modern period with FA and exercise focused on preservation of health and increase in health span - PAE; c) marginalisation of common-sense aspect of PAE and asymmetry of health span.

## “BON SENS” AND EXERCISE

At first existential, then later on also the common-sense FA was and still remains a tool for learning skills, acquiring and establishing life habits, including those aimed at preserving health (physical exercise and health - PEH). The need for a healthy lifestyle as a paradigm of the individual existed even before the development of medicine, physiology, genetics, neuroscience, sports and exercise science... It followed, or rather its source was the common-sense deliberation of individuals to arrange life the way they feel and think they should. Ancient philosophy sees common sense (*bon sens*) as the basic axiom for the development of “practical science” which was used to understand, solve and guide life problems of individuals, society and nature. Aristotle describes “common sense” as the ability to judge through the processing of sensory perception, memory and imagination (Tusak, 2019). In the Paleo period, common sense also encompassed what we today might call empathy for both individuals and society.

The evolutionary continuum of humans (*Homo sapiens*), spanning almost 200,000 years, presents a highly inspirational framework for understanding PAE, especially in the first two periods (see Figure 2). In the third, modern period, there seems to be a gradual loss of understanding of the common-sense essence and significance of PAE!?! Despite extensive public discourse on the health benefits of PEH, this modern period can be characterised as one of individual and societal marginalisation of common-sense PAE essence, leading to the degradation of the health of an individual with broader societal consequences. This raises the question whether the abandonment of the nature of PAE is some kind of new “common-sense essence” of action towards human evolution? To answer this, one must return to the origins of human evolution to be able to determine and characterise the meaning of today’s reasoning and acting through PAE as unchanged! In other words, the modern period reflects a practice of disrupted reflexivity –“the ability to think in the direction of continuous learning and change” (Schön, 1983). Reflection, as an activity that does not recapitulate experience with the aim of its evaluation, improvement and lifelong learning, appears to be lost in the context of contemporary society, particularly in the domain of PAE and PEH!

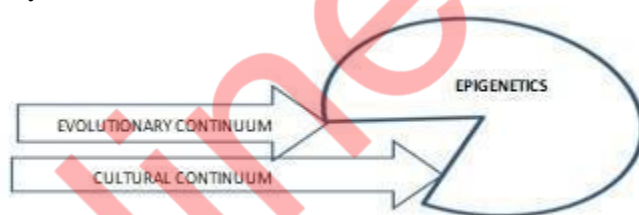
The need for PAE is a common-sense axiom of evolution, problematised by ancient deliberation, which today, in a modern and technologically advanced environment, gains scientific verification on a daily basis regarding the nature of its exclusivity – PEH. Truth be told, the extensiveness and, to some extent, exclusivity of the realm of knowledge of PEH and the scientific argumentation of a large number of established facts can be understood as repeated investigations of the proven, through which, in a way, contemporary denial of the common-sense truthfulness of human PAE is executed. The aim of the research is, among other things, further commercialisation and institutionalisation of PEH and directing the current period of cultural evolution! Therefore, such research often embodies an art for art's sake essence, shaped as a quest for new truth in a new technological environment. However, regardless of the efficiency of current and future institutionalisation (systems of sports-education-health-ecology... and numerous strategies for their development, scientific institutes, university networks, media, artificial intelligence...), the message remains the same: PAE is a *conditio sine qua non* for the evolution of humanity, its health, and its biological, cultural, and psycho-social development!

One way to arrive at conclusions about the need, nature, and significance of PAE (the subject of the paper) is by establishing a continuous type cognitive construct based on historical facts, the semantics of terms, and the gnoseological conclusions of science and the practice/exercise of the paleo world. To clarify the goals and direction of human PAE in paleosport, facts from life, as well as quotes from philosophers, trainers and physicians of ancient Greece have been highlighted... These, in themselves,

contain historical claims about the role of PAE in maintaining health through movement and exercise! Written sources, along with images, sculptures, monuments, etc. serve as the source for applying content and discourse analysis methods in this paper, while induction and deduction are used to form conclusions aimed at establishing an analogy between the characteristics of ancient entity in relation to the aspirations in human PAE.

Philosophers, trainers and physicians of the paleo-period were important proponents and transmitters of ideas focused on the health of humans/athletes of that time. The syncretism of philosophers, trainers and physicians of ancient Greece left traces on the thinking and practice of modern man, with the difference that after analysing the influence of cultural evolution (Lieberman, 2021), the question can be raised whether we are still using common sense today and whether human needs for PAE have remained unchanged, both in its evolutionary essence and significance, as well as its utilitarianism? (The problem this paper is addressing).

And while the facts about the health effects of PAE from the period of ancient Greece are the result of the deduction of philosophers who, through the generalisation of the effects of exercise on abilities, skills, knowledge, habits... came to perceive its attributes according to the measure of an intelligent person, it seems that modern technologically conditioned assertions, ignore the nature of humans as a species and their evolution through PAE. In other words, as this analysis will show, both in the time of the paleo philosophers and in this modern time, PAE dominantly takes place in accordance with the comfort - the lifestyle of individuals of higher social groups, which, then, as well as today, places the dominant part of the population in the zone of alienation from the threshold of essential PAE and its effects on health and quality of life!



**Figure 3** Evolutionary and cultural continuum and direction of epigenetic adaptations of modern humans (Jevtic, 2024)

It can be noted that in this modern view of the nature of PAE there is a deviation from Aristotle's assertions (who was considered a polyvalent mind of the ancient world, whose teaching served the further development of medicine, primarily thanks to him as the founder of biology and embryology) that determined factors (bodily and hereditary traits, as well as health) can have a beneficial, useful effect on a healthy human life only to an optimal extent, i.e. “measure of a common sense moderation” (Tusak, 2019).

### **PHYSICAL ACTIVITY AND EXERCISE IN THE SYSTEM OF PALEO EXERCISE AND PALEO SCIENCE**

The etymology of the neologism paleo is found in the word [old < (inherited) ancient Greek old - παλιός < (κληρονομημένο) Αρχήνα ελληνικά παλιός]. In modern Greek the word is (παλιό – old, ancient). Therefore, *paleo - ancient physical activity*, or the neologism paleosport, can be used in this paper as a determiner associated with the expression for the essence of physical activity and physical exercise of ancient times, including those named Olympic and other games, which, as it will be

determined, were aimed at the physical development of the exerciser (something that we recognize today as motor, intellectual, affective, cognitive, social, valeological... development (Radojevic, Jevtic, 2011), of that time, and which were transmitted as a lasting civilizational heritage to the present day.

Philosophers-scientists and physicians of ancient Greece were part of the social system that had the influence and importance to achieve the presumptions for a healthy lifestyle through physical and “sports activities” of that time. What was the analogy between philosophers and athletes? Namely, just as the athletes, who aspired to be *arete*, tried to overcome their weaknesses in order to become *nikitis* in *agon*, so philosophers and physicians tried to “conquer curiosity” by discovering the meaning and essence of natural and social phenomena, thus acquiring new knowledge. The conclusions were strictly causal! Physical exercise was also at the centre of cognitive efforts and it was recognized to lead to physical (bodily) and spiritual benefits. Therefore, exercising the body, for the most part, was carried out through the paleo education system. For medical and philosophy schools, there are unequivocal facts in setting the foundations of modern science also through PEH. Philosophical school in Miletus, the Pythagorean school in Croton, Plato's school (Academy) in Athens and Aristotle's school in Lyceus (gymnasium dedicated to Apollo Lyceus) and others were well-known. (Iamblichus, 2012; Laertius, 1979).

The first medical schools were located in temples (so-called *Asclepieia*), where young physicians were trained (Milovanovic, 1992). In the 6<sup>th</sup> century BC, medicine in ancient Greece began to take on the characteristics of a true science with the establishment of medical schools in Cyrene, Cnidus and on the islands of Rhodes and Cos (Cekic, Dj. and B., 2002; Maric, 2005). Similar medical schools were later founded in Sicily (Glesinger, 1978), Alexandria and other locations (Nenadovic, 2007).

Research that focused on the problem of determining the syncretism of philosophy and medicine showed that in the 6<sup>th</sup> century BC there was a turning point in the history of medicine, when it moved from mythology to the development period of philosophy of nature and humans. According to Fairs (Fairs, 1968), the *natural approach* believed that a person should have a daily programme of activities that will equally unite both physical (bodily) and intellectual elevation. In other words, the analysed period established what modern cultural and physical anthropology and the biology of human physical activity claim: that human development, both within their genotype and epigenetically, occurs through both spiritual and physical (bodily in the terms of outcome) domain. In other words, something that is intensively studied and what we are informed on daily by numerous sources of different information levels regarding the “breakthroughs” of science in the area of syncretism between physical activity in relation to the biological and cultural evolution of humans, was long ago established as a theoretical and practical cognitive framework filled with the harmony of the spiritual, intellectual and physical in achieving human physicality – *conditio humana*.

**Diogenes** of Sinope (404-323) was an ancient Greek philosopher, a famous follower of the Cynics. Laertius (Laertius, 1979) quotes Diogenes as follows:

*“Exercise is twofold — one is mental, and the other physical; and when practised continuously, it creates a mindset paving a path for virtuous deeds. One is incomplete without the other, as both well-being and strength are equally required by the soul and the body.”*

It is further stated that Diogenes presented evidence that *virtue is easily achieved through exercise*. The following was said about him: “He used to say that nothing in life can be achieved without exercise and that exercise can overcome any obstacle.”

Pythagoras stated that justice has the power of an oath, that virtue is harmony, and so are **health**, and all that is good, and God himself; that is why it is said that *everything is composed according to the laws of harmony*. Friendship is harmonious equality, [...] that purification is achieved through expiation

and *bathing*, [...] and that white represents the nature of good, and black the nature of evil (Laertius, 1979).

Xenophon (Xenophon, 1994) writes that Socrates advised Epigenes to get out and get some exercise; "... (there) is no struggle, except war (with oneself – author's note), and there is no endeavour where you will fare worse if you *keep your body in better condition*." Here the emphasis is on *physical fitness* and *health* achieved through vigorous exercise - a very significant theme in Xenophon's works. Susnjic (Susnjic, 2003) believes that the example of Socrates proves that "superior health is fertile ground for the development of (Socrates') spirit." The phrase "superior health" refers to the assumption that Susnjic wanted to say that Socrates had a *healthy personality* (author's note).

### FROM THE SYNCRETISM OF PHILOSOPHY AND MEDICINE TO THE MEANING OF PALEO EXERCISE

The analysis of facts from the lives of ancient philosophers, physicians, trainers and athletes is directed towards the function of utilitarianism, perception and affirmation of ideas focused on exercise in the analysed period of paleo science.

Given that **Pythagoras** (580-497) showed great *knowledge in several scientific disciplines* (philosophy, mathematics, physics, astrology, medicine, theology, pedagogy...) through his deliberation and work, it can be stated that he was also a prolific scientist. *He introduced evidence into science, deductive procedures, definitions*, and refers to *hypotheses* and *axioms*, the former being what needs to be proven and the latter being what can be used to do so. Based on the data by Heraclides, Laertius (Laertius, 1979) believes that Pythagoras was *eighty years old* when he died, which aligns with his own description of the way of life of a human.

**Anaxagoras** (500-428) made a significant contribution to philosophy and to the development of medicine. He presented his philosophy in a single paper, titled *On Nature (Περὶ φύσεως)*. He was the first to introduce the following principle in philosophy: "Mind is what is the 'finest', it is the 'purest' of all things." (Diels, 1983)

**Democritus**, the philosopher from Abdera (circa 460 - circa 370), is said to have certainly lived to ripe old age at the *age of ninety* (Diels, 1983). Democritus believed that happiness is found in man's desire for knowledge and in a harmonious life, achieved through moderation. The highest good is bliss (εὐδαιμονία), which Democritus also refers to as gentle movement, tranquillity, harmony, equilibrium (ἡμμετρία) and imperturbability (ἀταραξία). He also played an important role in medicine - he studied pulse, senses, rabies, epidemics, etc. (Tusak, 2019)

**Aristotle** (384-322) was the son of a physician, the most versatile and learned Greek philosopher. Aristotle lived until the *age of sixty-two*. In 335 BC he founded his own school in Athens (Lyceus). Based on anatomical, botanical and zoological research, he pointed out the correlations of nature, both animate and inanimate. Covering various branches of natural sciences, he authored numerous works (Nenadovic, 2007).

The medical importance of Aristotle is found in his *anatomical* and *physiological research*. He is considered to be the polyvalent mind of the ancient world. As he was also respected in the medical domain, his teaching served the further development of medicine, primarily thanks to him as *the founder of biology and embryology* (Tusak, 2019).

**Plato** (427-347) spoke about the importance of *situational exercises (movements)* that they used during the simulation of a “small war.” He explained the meaning of the term music and *gymnastics*: (Plato, 1971):

*“And the second part, which refers to the movements of the body, aligns, indeed, in rhythm with the movement of the voice, but the movements of the body are governed by a particular law, just as the melody refers to the movement of the voice. [...] That which pertains to the voice, and relates to the education (nurturing of the soul) for virtue, we have called in some way **music**. [...] As for the body, its movements, if performed with ease, we have called play. If the movements in question are fully related to the achievement of excellent body condition, we should call them **gymnastics**.”*

### **TRAINER IN PALEOSPORT – TRAVELLER TOWARDS KNOWLEDGE**

The result of our “healthy curiosity” does not prevent us from asking questions about the nature of the mutual connections between ancient philosophers, athletes and trainers of the time. In keeping with this intrigue, it could be said that the period of paleosport was a “two-faced mirror,” mutually beneficial, both for the mentioned philosophers and for the athletes and their trainers. For the former, to inspire in reflective self-transcendence, i.e. to direct their opinions and advanced ideas partly to the benefit of training practice. And for the latter, to gain a better understanding of the essence of exercising, the nature of training, the meaning of individual exercises and training sessions... so that both the trainer and the athlete could successfully develop their mental and physical abilities (harmony of mind and body) - in essence to have a healthy body.

It is evident that Plato had great influence on paleosport. He talks about the importance of the knowledge that trainers and physicians should possess in order for athletes to be healthy individuals, which by no means excludes concern for the rest of the population of ancient Greece. He points out that physical exercise and training are important for future war operations. He attributes special importance to musical education, since he believes that in that case the body, moving in harmony with music, becomes more skilled in movements that are analogous to fighting in a war. He gained extensive experience as a wrestling competitor, so he could speak beneficially about the importance of physical education in youth for the sake of developing virtues (Plato, 2002).

In the implementation of athlete training, a key role was played by paleo trainers, who are described as follows by Mouratidis (Μουρατίδης, 1992):

*“According to ancient authors, **gymnastis** (γυμναστής) had scientific knowledge on movements of the human body and on types of exercises adequate for children of various age groups. Plato and Aristotle often mentioned gymnastis alongside **physicians**, with whom they cooperated on the prevention and treatment of various diseases.”*

He emphasised that a well-conditioned body possesses greater movement abilities, and therefore, when running and sprinting, one needs to use the principle of training the whole body for speed and strength: “In war, the physical agility of both legs and arms is of most value. Agility and speed of the legs can serve both for running away and for giving chase, the agility and dexterity of the hands serve in close combat, while in a conflict between individuals strength and power are needed in addition.” (Plato, 1971)

In his work *Laws* (1971), Plato argues that a teacher must impart all knowledge to the student, and the student should accept it with great gratitude: “Moreover, in this matter, we must command both the students and future teachers - once we reach this point in our laws - that the former should accompany their teaching with love, and the latter should receive it with gratitude.” He advocates that only *educated*



(learned) physicians can transmit knowledge and practice healing, while others, i.e., those who merely believe they possess some healing abilities, cannot.

Galen differentiated two types of trainings, as follows:

- group training, focused on preserving health. Those who practised it most often practised walking, bathing and massage.
- group and individual training focused on achieving results in competitions. It was practised by those who practised sport “professionally” and such a training contained deliberation on the components of load.

He believes that those who wanted to train separately, inside the gymnastirium, had to train according to the parts that made up a single training, as he emphasised that the load during training depended on the person’s level of fitness, and it lasted depending on the accompanying changes in the “skin colour” of certain body parts and “it ended when the athlete got tired – fell to his knees” (Γαληνός, 1965).

From the above, it can be observed that group training focused on *preserving health* was significantly lighter compared to the other type of training - aimed at *achieving results in competitions*. It can be concluded that the first type of training was directed toward “maintaining health,” while the second was directed toward so-called “attrition of health,” since training to the extreme physical limits cannot have a prophylactic effect on athletes (author’s note).

Giiacsis (Γιάτσης, 2000) gives the following explanation: “One of the most important aspects of exercise, according to Galen and Philostratos, is information about the diet and information about the break the athlete takes.”

Komitoudis (Κομητούδης, 2004), states that Galen distinguished several types of movement in relation to the change in speed. He believed that the best was the one that could be seen based on the change in breathing. Thus, he distinguished between exercises that are practised without a break (the intensity of the load is lower) and those with a break (the intensity of the load is higher). The exercises with a break were divided into two groups:

- first group – exercises with a precise (programmed) break – were called *tetragmeni*, and
- second group – exercises that had a break at one’s discretion, were called *ataktos*.

Galen noticed that when using different physical exercises in relation to the change in movement speed, there were two types of breaks - those that were performed under conditions of high load intensity and those with lower load intensity.

Galen (Γαληνός, 1965) and Filostratos (Φιλοστράτος, 1992) believed that training should be outlined for each day, since several factors had to be taken into account: location, training facility, type of training, various measurements, as well as physical and psychological state of athletes. It can be noted that today’s trainers have a similar approach. The training was programmed in detail and lasted almost the whole day. Galen (Γαληνός, 1965) described the parts of a training session as follows:

- first part – preparation and warm up (προπαρασκευή, *proparaskevi*),
- second part – introductory part of the training (μερισμός, *merismos*),
- third part – main part of the training (κατασκευή, *kataskevi*) and
- fourth part – recovery (αποθεραπεία, *apotherapeia*) in the form of relaxation.

Giatsis (Γιάτσης, 2000) quotes Galen as saying: “The intensity of the load should be gradually increased so as to be the highest in the end.” This needs to be taken into account particularly in order to avoid injuries... When an athlete is injured, healthy parts of the body should be exercised, while the sick ones should be recuperated through therapeutic exercises with a gradual increase in the intensity of the

load. He also had knowledge on the didactic principles of gradual increase in the intensity of the load during the training. This shows that the functional abilities of an athlete can be successfully developed in a natural (rational) manner.

**Hippocrates** (460-380) was given the title of the “father of Greek medicine”. He defined the following useful instruction (which became a principle): “Running for longer distances should start slowly, to use up energy better, because if one starts suddenly, they will tire out quickly.” (Ιπποκράτης, 1992)

Hippocrates stated the following about the recovery exercises: “... whoever walks after exercise will have a more rested and stronger body... walking is a natural exercise and all who walk in the morning lose weight” (Ιπποκράτης, 1992). He believed that walking has a comprehensive effect on the proper development of the body, in the sense that by losing excess weight, the body is brought into a harmonious morphological appearance. Hippocrates is also significant, since he was the first to speak about physicians’ duties, i.e. *medical ethics*. He is famous for his aphorisms about physicians, about their qualities, their decency... His philosophical reflection – “*a physician is a thinker equal to the gods and a good physician should also be a good philosopher*” - is very illustrative and instructive for all healthcare workers of all eras (Maric, 2005).

#### “EXERCISE THE BODY TO BE HEALTHY”

The dialogue between Socrates and Meno (Plato, 1997) speaks of the fact that philosophers were well versed in reflecting on *virtue* that is (not) acquired through *science* or (*physical*) *exercise*. This dialogue results in key words that in detail describe the outcomes of paleoexercise, such as: *virtue, science, exercise, training, skill, wisdom, champion* and *health*. They direct the existing connection of the sages along with the essence of the said domains of their interests. Given that the sport of ancient Greece was recognized through “champions”, i.e. winners in competitions, through the “practice, training” of athletes in palestras and gymnasiums, and the “skill of riding” (one of the most important skills in war – author’s note), it can be stated that there was a strong connection between philosophers and sports. The text shows that the sages also discussed the *health* of the Greek people, which is acquired and maintained partly through *physical exercise*.

In his work *Exhortation to Philosophy (Protrepticus)*, in a passage from the speech of the character of ‘Heraclides’, Aristotle says: “A man must either engage in philosophy, or say goodbye to life and leave this place, since everything else somehow seems to be full of rubbish and nonsense.” (Aristotle, 2017). He probably wanted to emphasise that it is a great skill to apply *the philosophy of a healthy lifestyle*. After analysing a part of the *Protrepticus*, in the Editorial Notes segment, Iamblichus states that he is turning to a new idea according to which *philosophers* enjoy *improved vitality* as humans, i.e. that the one who thinks properly and speaks the truth *will live longer*, and that is the one who is intelligent and focused on *knowledge* in order to live in perfection (Iamblichus, 2012).

Aristotle (Aristotle, 2000) explains what health is and what it consists of from his point of view:

“**Health** is a physical quality consisting of the safe use of one's body; Namely, many treat their health in a way as Herodicus did, according to tradition, so that no one would envy them, since they have to renounce all or most of human pleasures. [...] And the physical quality in terms of competition consists of stateliness (body height), strength and speed (since a fast man is at the same time strong)“.

When talking about physical health, Aristotle primarily means that it is maintained through “safe use of one's body”. He tells us that physical exertion should be of an optimal character! In order to achieve that, it is necessary to renounce numerous human pleasures.

Aristotle (1984) points out that it is useful for citizens to possess “good physical qualities”, health and hereditary qualities if they are not exposed to one-sided overexertion as athletes:

*“For good physical qualities, which citizens should possess, as well as for health and childbearing, neither an athletic build, nor the one that requires too much care, or one that is too weak is beneficial, but the one in between these two. The body should be resilient, but not through excessive exertion and not only in one direction like the body of an athlete, but rather for all the tasks that fall within the scope of free individuals.”*

It can be noted that Aristotle wanted to explain how determined factors (physical and hereditary traits, as well as health) only in an optimal measure, i.e. “the measure of moderation” can have a beneficial, useful effect on a healthy life of a person.

**Diogenes** of Sinope (404-323) was an ancient Greek philosopher, a well-known follower of the Cynics. Laertius (Laertius, 1979) quotes Diogenes as saying:

*“Exercise is twofold — one is mental, and the other physical; and when practised continuously, it creates a mindset paving a path for virtuous deeds. One is incomplete without the other, as both well-being and strength are equally required by the soul and the body.”*

It is further stated that Diogenes presented evidence that *virtue is easily achieved through exercise*. The following was said about him: “He used to say that nothing in life can be achieved without exercise and that exercise can overcome any obstacle.”

Pythagoras used to say that *excessive obesity should be avoided*. He deemed *drunkenness* harmful and condemned any exaggeration, since he believed that a person should not exceed the proper measure neither in eating nor in drinking. He forbade eating the flesh of animals, which have souls, like us humans. Laertius (Laertius, 1979) believed that this was just an excuse, since he forbade the meat of animals primarily to accustom people to moderation in their diet and lifestyle, so they could without difficulties obtain food, by bringing only uncooked food to the table and by drinking pure water, which was considered *a path to good physical health and mental clarity*, which could also be achieved, among other things, by exercising memory.

Iamblichus states that Pythagoras believed that *music* has a beneficial effect on human *health*, if they treat it in an appropriate way, which he called cleansing. He himself often resorted to this type of cleansing and called it “*healing through music*”. He selected compositions for different mental states. Some of them were effective against sorrow, others against irritability, anger, as well as any cloudiness of an angered soul, and there was also a genre of music intended for abstinence from desires. Before going to sleep, one would clean his mind of the day's confusion and noises through particular songs, thus ensuring a *peaceful sleep* with numerous and pleasant dreams. In the end, Iamblichus says: “Thus it is said that he *discovered the art of music*, and after systematising it, he passed it on to his students for the most wonderful goals.”

**Thales** (624-546) lived to a ripe old age - *circa eighty years of age*, because he had a positive attitude towards health. When Thales was asked: And who is happy? — he answered: “A person who has a *healthy* body, a nimble spirit and an approachable nature.” (Laertius, 1979)

Laertius (Laertius, 1979) wrote: “**Epicharmus** (550-460) was a student of Pythagoras. He left behind memories of *physiological, gnomological (ethical) and medical discussions*.” He is famous for his

wise thoughts: “The best thing a man can have, in my view, is *health*.”, and “*Exercise* is more beneficial than a good day.”<sup>1</sup>

**Herophilos** (335-280) believed that *exercise and a healthy diet* were an integral *part* of an individual’s *physical health*. He once said that “when health is absent, wisdom cannot be revealed, art cannot manifest, strength cannot be exerted, wealth is useless, and reason is powerless.” (Γαληνός, 1965)

Aristotle (1984) explains that the role of the trainer in selecting exercises is similar to the role of the physician in selecting the best therapy:

*„In all skills and sciences that do not merely cover individual parts but encompass a complete field (there is still one part), the task consists of examining what is appropriate for each specific object (of those skills or sciences). For example, gymnastics should determine what type of exercise benefits which type of body, which form of exercise is the best, because the body that nature has endowed and made the most beautiful must be matched with the best type of exercise, and finally, what kind of exercise suits everyone. That is, indeed, the task of gymnastics. And if someone does not wish to have a well-built body and proper posture or to know the rules of gymnastics, it does not diminish the responsibility of the trainer and athlete to work on developing those abilities (traits). We see that the same applies to medicine as well...”*

Based on the above quotations, it is possible to see the meaning of the concept and attitudes about health through exercise (paleo exercise).

Aristotle also focused on the trainer, whom he says should be educated and possess complex knowledge in the field of sports. In essence, the trainer of the ancient times first assesses the body and determines “which exercise is best”, i.e. which types of exercise are suited to the athlete’s specific body type. In other words, first the athlete had to be assessed and analysed for the selection of the optimal exercises and loads. In this sense, he draws a parallel to the steps taken by a physician, for whom he says that, after considering the patient’s problem, he should select the best therapy. Since the phrase “good physical condition” can also be found in these statements about the trainers and the physicians, referring to *health as the essence of the actions of both expertise* (training and medical), essentially Aristotle says: “**Exercise the body to be healthy.**”

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<sup>1</sup><https://sr.wikipedia.org/sr-el/%D0%95%D0%BF%D0%B8%D1%85%D0%B0%D1%80%D0%BC>

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