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Физические упражнения и спортивная медицина в историческом аспекте

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Аннотация: Польза тренировки и физической активности является неоспоримой на протяжении тысячелетий. Учитывая это, врачи подчеркивали важность физической активности и тренировки в дополнение к сбалансированной диете для поддержания здоровья, нежели для предотвращения болезни. Первым народом, который институционализировал медицину были египтяне. **Материалы.** Связь между тренировкой и медициной берет свои корни в исследованиях трех древних врачей: Геродик (480 -? д.н.э), Гиппократ (460-370 д.н.э) и Гален (129-210 н.э.) (5). **Методы исследования.** Анализ и обобщение научной литературы. **Результаты.** Первое известное изучение «лечебной гимнастики» или «гимнастической медицины» провел греческий врач и педотриб (учитель в спорте, борьбе и гимнастике) Геродик. Геродик, будучи и преподавателем физкультуры и врачом, выполнял функцию и тренера и наставника Гиппократа, который известен также как «Отец Медицины». Большую часть всего, что мы знаем о медицине в древности можно отнести к работам Гиппократа. Гиппократ был сторонником использования тренировки и физической активности для обеспечения здоровья. Также как Геродик повлиял на Гиппократа, Гиппократ повлиял на римского врача Клавдия Галена (Гален). Хотя многое из того, во что они верили (Гуморальная Теория Галена) было опровергнуто, они подчеркивали важность тренировки и физической активности для здоровья и их фундаментального значения для развития тренированности и спортивной медицины как медицинского направления. **Заключение.** Тренировка и физическая активность обычно воспринимаются как что-то полезное для здоровья. Начиная с древнего Египта и продвигаясь в Грецию, спортивная медицина развивалась вместе с профилактической медициной в большей степени благодаря трем врачам. Также в этот период здоровье и практическая медицина перестали быть чем-то сверхъестественным и принадлежать к миру духовному. Они стали частью эмпирической науки. Технологии в военной медицине использовались в гимнастическом зале и на спортивных мероприятиях, чтобы повысить эффективность спортсменов за короткий промежуток времени. Однако, без Геродика, Гиппократа и Галена, наше представление о тренировке и медицине в спорте было бы не полным.
Ключевые слова: спортивная медицина, спортивная история, наука тренировки, древняя Греция.

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Exercise Science and Sport Medicine: An ancient account

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Abstract: The benefits of exercise and physical activity is not a new concept but instead, one that has persevered for thousands of years. In this context, physicians emphasised the importance

of physical activity and exercise in addition to eating a balance diet in order to promote health rather than just the prevention of disease. The earliest known population to have institutionalised medicine as a fundamental practice was the ancient Egyptians. **Materials.** The connection between exercise and medicine can trace its roots back to three ancient physicians; Herodicus (480 -? BC), Hippocrates (460-370 BC) and Galen (129-210 AD) (5). Research methods. Information sources analysis and summarizing. **Results.** The first known study of what was termed "therapeutic gymnastics" or "gymnastic medicine" was conducted by Greek physician and paidotribes (a formal tutor in sport, wrestling and gymnastics), Herodicus. Herodicus, both a physical educator and physician, served as both a tutor and mentor to Hippocrates, commonly referred to as the "Father of Medicine". Much of what we know about medicine in the ancient world can be attributed to the writing of Hippocrates. Hippocrates advocated for the inclusion of exercise and physical activity in order to maintain health. Just as Herodicus influenced Hippocrates, it was Hippocrates who was a major influencing factor on Roman physician Claudius Galenus or Galen. Although much of what they believed to be true (Galenic Humoral Theory) has been disproved, they did emphasize the important of exercise and physical activity for health including laying the foundations for the development of exercise science and sports medicine as a medical discipline. **Conclusion.** Exercise and physical activity are commonly accepted as being beneficial to one's health. Beginning with the ancient Egyptians and spreading into Greece, sport medicine was developed in parallel to preventative medicine chiefly through the efforts of three physicians. It was also during this period that health and the practice of medicine was separated from the supernatural and spiritual world and began to basis it in empirical science. Practices in military medicine were therefore utilised in the gymnasium and at sporting events in order to return athletes to competitive effectiveness in the shortest period possible. Therefore, without Herodicus, Hippocrates and Galen, our understanding of exercise and medicine in sport would be incomplete.

Keywords: Sport medicine, Sport History, Exercise Science, Ancient Greece.

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EXERCISE SCIENCE AND SPORT MEDICINE: AN ANCIENT ACCOUNT

Today, it is well established that exercise is good for one's health and that inadequate physical activity can be detrimental to overall bodily function (1,2) and has been shown to be beneficial to a number of other systems including mental health (3) and social well-being (4). Classical Greek preventive hygiene formed a fundamental part of the formal medical training through the 18th century and early 19th century and was later included into the "laws of health" (5). These laws, their balance and maintenance were something that was the sole responsibility of the individual. Accordingly, "self-help", "self-regulation", "self-management", "health behaviour" and "personal health" were all popular terms used to define and describe preventative medical literature of the 19th century (5–7).

Although the research supporting these claims are relatively recent in historical terms, the recognition of the necessity of sufficient exercise for healthy living has at least been document since Herodicus (480 -? BC), Hippocrates (460-370 BC) and Galen (129-210 AD) (5). The concept of medicine as articulated by Hippocrates and Galen became known as "humoral theory" and up to the 18th century was often referred to "Galen medical theory" (5). Exercise then was incorporated into much of the early regimen, hygiene and preventative medicine literature and was recommended as a cure for a number of ailments including gout, dyspepsia and consumption (5).

The benefits of exercise and physical activity is not a new concept but instead, one that has persevered for thousands of years. Much of the last 200 years of Western mainstream medicine and healthcare has focused primarily on the notion of "sick care" and devoting much of its time to treatment rather than prevention. (8). However, prior to 19th and 20th centuries, a large proportion of a physician's duties were dedicated to the preservation and promotion of health through exercise, diet and lifestyle (regimen) leading to prevention of disease (9). In this context, physicians emphasised the importance of physical activity and exercise in addition to eating a balance diet in order to promote health rather than just the

prevention of disease (5). These ideas can be traced as far back as antiquity (9). According to the medical historians Baas and Handerson (10), antiquity ended with the death of Galen in 210 AD (7,9,11). Therefore, for the purpose of this essay, as described by Tipton (7), the term antiquity refers to the time period between 3000 BCE and 200 CE.

Medicine in some form has been practiced for thousands of years beginning with primitive folk ways of diagnosing, treating and preventing diseases; largely believed to be spiritual in nature (9). The earliest known population to have institutionalised medicine as a fundamental practice was the ancient Egyptians (12,13) with the earliest known physician being Imhotep (2980 BCE) whose name was give to a temple university Men-Nefer, now Memphis (12). It is interesting to note that Hippocrates, the so-called "father of medicine" studied for a period under the guidance of the "Kemetic" (Egyptian) priest-magician-physicians or healers (12). However, only some fourteen medical papyri have survived long enough to be discovered in a relatively intact condition (13). These texts represent what was known about medical science over the period of 2000 years beginning with the Kahun Papyrus (approximately 1850 BCE) to the second century A.D. with the Vindob Papyrus 6257 (Crocodilopolis) (14).

ANCIENT GREEK ORIGINS OF EXERCISE SCIENCE AND SPORT MEDICINE

Herodicus

The connection between exercise and medicine can trace its roots back to three ancient physicians; Herodicus (480 -? BC), Hippocrates (460-370 BC) and Galen (129-210 AD) (5). The first known study of what was termed "therapeutic gymnastics" or "gymnastic medicine" was conducted by Greek physician and paidotribes (a formal tutor in sport, wrestling and gymnastics), Herodicus (7). Through observational studies, Herodicus noted that his weakest students could be made stronger through regimented exercise routines (15). A scientific divide was noted between physicians and paidotribes, which resulted in physicians being barred from entering gymnasiums (15). As a result, physicians had a poor understanding of the world of sport. However, as Herodicus was trained both a physician and a physical educators (paidotribes), he was able to combine both worlds with a unique perspective. Herodicus believed that body could benefit greatly from exercise and that physicians should be trained to recognise bodily exercise and its prescription as a core principle in the maintenance of health (7)., it was noted that Herodicus was the first physician to suggest that a patient should minimise bed rest and start moving as part of rehabilitation, now a commonly prescribed treatment in contemporary medicine (15). His belief that physical activity, nutrition and disease were inextricably linked, has persisted through medical literature into present day (7).

HIPPOCRATES

If Herodicus was considered by many to be the "father of sports medicine" (5,7,15), then it is Hippocrates who is considered to be the "father of scientific medicine" (5,7,9,16). Most historians believe that Hippocrates' interest in exercise, nutrition and health was largely due to the influence from Herodicus (5,7,16,17). It was Hippocrates who was credited as the chief compiler of approximately 78 treatises on Greek medicine that became known as the "Corpus Hippocraticum" (5,18). However, it appears that Hippocrates also authored two separate works known as the "Regimen in Health" and "Regimen" (5,7,9). Within "Regimen in Health", Hippocrates advised on a number of topics including nutrition, exercise and physical activity for each season and even devoted an entire chapter to "athletes in training" (7,19). Much of the second book, "Regimen", written in 400 BC, was devoted to exercise and training (5). Further, Hippocrates was the first to prescribe discrete amounts exercise for disease conditions and as treatment was expected to last a year, the prescription included implicit instructions on how it should progress during that time (7).

It is important to note that the contributions by Hippocrates also extended to surgery and traumatology (20). A number of surgical interventions where characterised and described, specifically procedures for injuries that occurred in war as well as in sport. Sport in the ancient world originated as war games (21) and were extremely

violent and often resulted in maiming or death (21). Most events centred around combat sports and war skills, ie. Boxing, wrestling, javelin and running and since death was a recognised risk of participation, athletic fatalities were not considered homicide (21). The constant threat of injury and death in the name of victory provided the ancient physicians and athletic trainers unparallel experience in emergency medicine, traumatology and surgery. Hippocrates himself noted that "Whoever wants to practice surgery needs to go to war" and during that time, sport was war. Military experience therefore augmented the understanding or traumatic injuries and how to treat them in such a way as to return the soldier or athlete back to combat effectiveness in the shortest period possible.

GALEN

Just as Herodicus influenced Hippocrates, it was Hippocrates who was a major influencing factor on Roman physician Claudius Galenus or Galen (129-210 AD) (7,9,22). Galen was so influential on medical and health practices that his ideas persisted for more than 1400 years (7). Galen was a strong advocate of exercise for achieving health and that a lack or excess of exercise could cause illness, however Galen never quantified the exact relationship (7). According to Galen, exercise should be vigorous enough to increase breathing, pulse and loss of moisture (sweat) (7,9,22). In terms of Galenic theory, work and exercise were equivalent terms and a number of activities could be considered either (7). Galen's most notable contribution on health and exercise can be found in the works called "On Hygiene" (23,24). Galen believed that exercise formed an important branch of hygiene with hygiene being one aspect of the science of medicine (5). The books primarily focused on the role that exercise has in health-related issues. Their specific focus was prescriptive, describing when one should exercise, what is considered exercise and its intensity. However, some aspects of Galen's theory surrounding the physiology and science of exercise were still accepted and followed (Tipton, 2014)

CONCLUSION

Exercise and physical activity are commonly accepted as being beneficial to one's health. Beginning with the ancient Egyptians and spreading into Greece, sport medicine was developed in parallel to preventative medicine chiefly through the efforts of three physicians. Although much of what they believed to be true (Galenic Humoral Theory) has been disproved, they did emphasize the important of exercise and physical activity for health. It was also during this period that health and the practice of medicine was separated from the supernatural and spiritual world and began to basis it in empirical science. Practices in military medicine were therefore utilised in the gymnasium and at sporting events in order to return athletes to competitive effectiveness in the shortest period possible. Therefore, without Herodicus, Hippocrates and Galen, our understanding of exercise and medicine in sport would be incomplete.

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