

**Chapter 1 : Department of Exercise and Sport Science - Encyclopedia of UNCG History**

*An historical chronicle of the emergence and growth of the physical education field in the 20th century tracing the evolution of its focus from instruction to nine scientific subdisciplines.*

Today, though no longer driven by subsistence requirements, fitness remains paramount to health and well-being. This article will highlight historical events and influential individuals who have shaped the history of fitness beginning with primitive man up to the foundation of the modern fitness movement. Primitive man and fitness pre, B. C Primitive nomadic lifestyles required the continual task of hunting and gathering food for survival 1. Tribes commonly went on one- or two- day hunting journeys for food and water. Regular physical activity apart from that necessary for hunting and gathering was also a principal component of life. Following successful hunting and gathering excursions, celebration events included trips of six to 20 miles to neighboring tribes to visit friends and family, where dancing and cultural games could often last several hours. This Paleolithic pattern of subsistence pursuit and celebration, demanding a high level of fitness and consisting of various forms of physical activity, defined human life 2. The Neolithic Agricultural Revolution 10., B. The Neolithic Agricultural Revolution marked the conclusion of primitive lifestyle and signified the dawn of civilization. This historic period was defined by important agricultural developments including animal and plant domestication, and the invention of the plow. These human advancements made it possible for hunting-gathering tribes to obtain vast amounts of food while remaining in the same area, thus transforming primitive man into an agrarian agriculture and farming society 3. This era in history symbolizes the beginning of a more sedentary lifestyle, as man began to alleviate some hardships of life while. Ancient civilizations - China and India B. China In China, the philosophical teachings of Confucius encouraged participation in regular physical activity 4. It was recognized that physical inactivity was associated with certain diseases referred to as organ malfunctions and internal stoppages, which sound similar to heart disease and diabetes were preventable with regular exercise for fitness. Consequently, Cong Fu gymnastics was developed to keep the body in good, working condition. Cong Fu exercise programs consisted of various stances and movements, characterized by separate foot positions and imitations of different animal fighting styles 5. In addition to Cong Fu gymnastics, other forms of physical activity existed throughout ancient China including archery, badminton, dancing, fencing, and wrestling. India In India, individual pursuit of fitness was discouraged as the religious beliefs of Buddhism and Hinduism emphasized spirituality and tended to neglect development of the body. Consequently, the importance of fitness within society in general was relatively low. However, an exercise program similar to Chinese Cong Fu gymnastics developed, while still conforming to religious beliefs, known as Yoga. Though its exact origin has yet to be identified, Yoga has existed for at least the past years. Translated, Yoga means union, and refers to one of the classic systems of Hindu philosophy that strives to bring together and personally develop the body, mind, and spirit. Yoga was originally developed by Hindu priests who lived frugal lifestyles characterized by discipline and meditation. Through observing and mimicking the movement and patterns of animals, priests hoped to achieve the same balance with nature that animals seemed to possess. This aspect of Yoga, known as Hatha Yoga, is the form with which Westerners are most familiar and is defined by a series of exercises in physical posture and breathing patterns 5. Besides balance with nature, ancient Indian philosophers recognized health benefits of Yoga including proper organ functioning and whole well-being. These health benefits have also been acknowledged in the modern-day United States, with an estimated 12 million individuals regularly participating in Yoga. The Near East B. Early political and military leaders within the civilizations of Assyria, Babylonia, Egypt, Palestine, Persia, and Syria, realizing the importance of fitness to the efficiency and performance of military forces, encouraged fitness throughout society 6. Perhaps the best example of a civilization utilizing fitness for political and military purposes is the Persian Empire. Persian leaders demanded strict physical fitness from its people, which was accomplished through the implementation of rigid training programs. At the age of six, boys became property of the Empire and underwent training which included hunting, marching, riding, and javelin throwing. Fitness training to improve strength and stamina was not intended for health benefits, but rather to

create more able soldiers to help expand the Empire 5. The Persian Empire during its height, with its policy and emphasis on high fitness, eventually encompassed all of the Near East. However, emphasis on fitness levels throughout the Persian civilization decreased as affluence and corruption entangled political and military leaders. The downfall and collapse of the Persian Empire occurred at a time when society could largely be characterized by an overall lack of fitness. Ancient Greek Civilization B. Athens Perhaps no other civilization has held fitness in such high regard as ancient Greece. The idealism of physical perfection was one that embodied ancient Greek civilization. The appreciation for beauty of the body and importance of health and fitness throughout society is one that is unparalleled in history. The Greeks believed development of the body was equally as important as development of the mind. Physical well-being was necessary for mental well-being, with the need for a strong, healthy body to harbor a sound mind. Many founding medical practitioners facilitated the growth of fitness throughout ancient Greece, including the likes of Herodotus, Hippocrates, and Galen 7. Gymnastics, along with music, was considered to be the most important classroom topic. A common saying in ancient Greek times was "exercise for the body and music for the soul 5 ". Gymnastics took place in palaestras, which were sites of physical education for young boys. The palaestra consisted of an indoor facility for gymnastics, in addition to an outdoor area for running, jumping, and wrestling. When adulthood was reached, typically between the ages of 14 and 16, the site for fitness training switched from palaestras to gymnasiums 8. Exercise in the palaestra and gymnasium was supervised by the paidotribe, who is similar to the modern fitness trainer. This idealistic fitness situation existed most strongly within Athens, which has been characterized as a democratic society most similar to the United States. However, the heightened interest in fitness within Spartan culture was primarily for military purposes. During this era, Greek states were frequently at war with each other. Fighting skills were highly correlated with physical fitness levels, making it imperative for individuals to maintain high fitness levels. Spartan society required males to enter special fitness programs at the age of six. This upbringing consisted of rigorous training programs that ensured all boys would grow into highly fit adult soldiers. Females were also required to maintain good physical condition for the purpose of being able to have strong offspring who could serve the state 9. The military-dominated culture of Sparta resulted in one of the most physically fit societies in the history of mankind. Roman Civilization B. The Roman Empire was the antithesis of the ancient Greek civilization with the overall physical fitness condition of the Roman civilization highest during its time of conquest and expansion. During this period, all Roman citizens between the ages of 17 and 60 were eligible for the military draft. Therefore, it was imperative for all citizens to maintain good physical condition and be prepared for service. Military training consisted of activities such as running, marching, jumping, and discus and javelin throwing This lifestyle resulted in strong, fit people who conquered nearly all of the Western World. However, the fitness levels of the general Roman population declined as individuals became enamored with wealth and entertainment, such as the gladiator battles. Materialistic acquisition and excess became higher priorities than physical condition. The lavish lifestyle and physical decay eventually took its toll as the Roman civilization fell to the physically superior Barbarian tribes from Northern Europe The Dark and Middle Ages The crumbling of the Roman Empire, which was conquered by Barbarians from Northern Europe, symbolized the beginning of a millennium of intellectual standstill. However, these occurrences were beneficial with respect to fitness. The barbaric tribes from Northern Europe possessed similar characteristics to primitive people. Their lifestyle consisted of hunting and gathering food, and tending to cattle Physical activity and fitness were prerequisites for survival. Therefore, despite the cultural setbacks that occurred with the fall of the Roman Empire, fitness experienced a revival during the Dark and Middle Ages. The Renaissance Following the Dark and Middle Ages, the rebirth of cultural learning from the ancient Greek and Roman civilizations gave rise to the Renaissance. Accompanying this time period was a renewed interest in the human body. Once again, the ancient Greek ideals, which glorified the human body, gained widespread acceptance. Many individuals, including Martin Luther religious leader , John Locke philosopher , Vittorino da Feltra, John Comenius, and Richard Mulcaster physical educators maintained that high fitness levels enhanced intellectual learning 13, Civilizations that recognized the importance of fitness needed an avenue to convey this knowledge to their people. Therefore, fitness and physical education share a common bond.

Physical education became the tool used to spread the value and benefits of fitness throughout society. School programs, primarily in ancient Greece, had previously recognized the necessity for curriculums involving physical education. The renewed appreciation for human life, which evolved during the Renaissance, created an environment which was ready for the widespread development of physical education throughout Europe. National Period in Europe Continental Europe underwent numerous cultural changes following the Renaissance. Fitness remained important and continued to follow trends initiated during the Renaissance. Physical education programs expanded within emerging nations of Europe. Intense feelings for nationalism and independence created the atmosphere for the first modern fitness movement, which came in the form of gymnastics programs. Gymnastics enjoyed immense popularity during this era, becoming especially prevalent in Germany, Denmark, Sweden, and Great Britain. Germany The growth of gymnastics in Germany can be primarily attributed to the work of two physical educators: Johann Guts Muths and Friedrich Jahn. Guts Muths is generally referred to as the "Grandfather of German Gymnastics. His lifetime works and achievements are found in two books - *Gymnastics for the Young and Games*. Friedrich Jahn earned the title of "Father of German Gymnastics" for his long-lived work. With its downfall to France, Germany was subsequently divided into separate states. He believed future susceptibility to foreign invasion could be prevented through physical development of the German people. Shortly thereafter, exercise facilities that housed apparatuses designed for running, jumping, balancing, climbing, and vaulting called Turnvereins developed throughout Germany 4. Sweden Per Henrik Ling developed and introduced his own gymnastics program to Sweden which consisted of three different areas: Ling, who had a strong medical background, recognized that exercise was necessary for all persons. He maintained that exercise programs should be devised based on individual differences.

**Chapter 2 : Introduction to Physical Education, Exercise Science, and Sport**

*The 11 reviews, written by scholars in each field, analyze the events and people who have had a major influence in the areas of sport pedagogy, adapted physical activity and education, sport sociology and history, the philosophy of sport, motor behavior, exercise psychology, biomechanics, and exercise physiology.*

Darrell Neuffer and Charles M. A Century of Discoveries Chapter 8. Reggie Edgerton Chapter 9. The Autonomic Nervous System in Exercise: An Integrative View Katarina T. The Respiratory System Brian J. Whipp and Susan A. The Oxygen Transport System: Maximal Oxygen Uptake Peter G. Levine, and Jere H. Central Influences Charles M. Peripheral Circulation Grant H. Harold Laughlin Chapter Muscle Plasticity Kenneth M. Baldwin, and Fadia Haddad Chapter Actions of Select Hormones Peter A. Farrell, and Henrik Galbo Chapter The Gastrointestinal System G. Patrick Lambert Chapter Substrate Utilization Andrew R. The Renal System Jacques R. Poortmans and Edward J. The Immune System Roy J. The Skeletal System Sarah L. Goulet, and Ronald F. Zernicke Index Audiences A comprehensive reference and textbook primarily for exercise physiologists, researchers and historians in kinesiology and exercise science, and students in upper-level courses on special topics in exercise physiology. Tipton, PhD, is an active emeritus professor of physiology at the University of Arizona. He received a PhD in physiology from the University of Illinois in He retired after 35 years of directing exercise physiology laboratories that investigated physiological mechanisms associated with the effects of acute and chronic exercise. He is recognized as a leading authority of exercise physiology. Professor Tipton taught physiology and exercise physiology courses to undergraduate, graduate, medical, and professional students at the University of Iowa and the University of Arizona and mentored 21 PhD students at these locations. He has written, coauthored, or edited six books, 33 chapters and proceedings, and approximately 18 articles. In addition, he served as editor in chief of Medicine and Science in Sports and Exercise and was an associate editor of the Journal of Applied Physiology for nearly a decade. Fellow Tipton also received the Clark W. Hetherington Award from the National Kinesiology Academy. The content is rich and well supported by the most pertinent findings from the field, both historical and current.

Chapter 3 : Sport psychology - Wikipedia

*THE HISTORY OF EXERCISE AND SPORT SCIENCE* Download *The History Of Exercise And Sport Science* ebook PDF or Read Online books in PDF, EPUB, and Mobi Format. Click Download or Read Online button to *THE HISTORY OF EXERCISE AND SPORT SCIENCE* book pdf for free now.

Early history[ edit ] In its formation, sport psychology was primarily the domain of physical educators, not researchers, which can explain the lack of a consistent history. The birth of sports psychology in Europe happened largely in Germany. The first sports psychology laboratory was founded by Dr. Carl Diem in Berlin, in the early s. The lab measured physical abilities and aptitude in sport, and in , Schulte published *Body and Mind in Sport*. In Russia, sport psychology experiments began as early as at institutes of physical culture in Moscow and Leningrad, and formal sport psychology departments were formed around The advancement of sports psychology was more deliberate in the Soviet Union and the Eastern countries, due to the creation of sports institutes where sports psychologists played an important role. In North America, early years of sport psychology included isolated studies of motor behavior, social facilitation, and habit formation. During the s, E. Research by ornithologists Lashley and Watson on the learning curve for novice archers provided a robust template for future habit formation research, as they argued that humans would have higher levels of motivation to achieve in a task like archery compared to a mundane task. He performed causal studies on vision and attention of basketball and soccer players, and was interested in their reaction times, muscular tension and relaxation, and mental awareness. The laboratory was used for the study of sports psychology; where different factors that influence athletic performance and the physiological and psychological requirements of sport competitions were investigated. He then transmitted his findings to coaches, and helped advance the knowledge of psychology and physiology on sports performance. Griffith also published two major works during this time: Coleman Griffith was also the first person to describe the job of sports psychologists and talk about the main tasks that they should be capable of carrying out. The other task was to adapt psychological knowledge to sport, and the last task was to use the scientific method and the laboratory for the purpose of discovering new facts and principles that can aid other professionals in the domain. In , Griffith returned to the sporting world to serve as a sport psychologist consultant for the Chicago Cubs. Wrigley, including a "psychology clinic" for managers, coaches, and senior players. Coleman Griffith made numerous contributions to the field of sport psychology, but most notable was his belief that field studies such as athlete and coach interviews could provide a more thorough understanding of how psychological principles play out in competitive situations. Griffith devoted himself to rigorous research, and also published for both applied and academic audiences, noting that the applicability of sport psychology research was equally important with the generation of knowledge. Finally, Griffith recognized that sport psychology promoted performance enhancement and personal growth. He also investigated how high altitudes can have an effect on exercise and performance, aeroembolism, and decompression sickness, and studies on kinesthetic perception, learning of motor skills, and neuromuscular reaction were carried out in his laboratory. Additionally, he published over articles, was a board member of various journals, and received many awards and acclaims for his contributions. Given the relatively free travel of information amongst European practitioners, sport psychology flourished first in Europe, where in , the First World Congress of Sport Psychology met in Rome, Italy. Additionally, the European Federation of Sport Psychology was founded in In North America, support for sport psychology grew out of physical education. The North American Society for the Psychology of Sport and Physical Activity NASPSPA grew from being an interest group to a full-fledged organization, whose mission included promoting the research and teaching of motor behavior and the psychology of sport and exercise. In , Devi at the University of Illinois published an article "About Smocks and Jocks" in which he contended that it was difficult to apply specific laboratory research to sporting situations. For instance, how can the pressure of shooting a foul shot in front of 12, screaming fans be duplicated in the lab? I sense that the elegant control achieved in laboratory research is such that all meaning is drained from the experimental situation. The external validity of laboratory studies is at best limited to predicting behavior in other

laboratories. Following its stated goal of promoting the science and practice of applied sport psychology, AAASP quickly worked to develop uniform standards of practice, highlighted by the development of an ethical code for its members in the s. AASP aims to provide leadership for the development of theory, research and applied practice in sport, exercise, and health psychology. Sport Psychology started to become visible at the Olympic games in , [20] when the Olympic teams began to hire sport psychologists for their athletes, and in , when the U. For the Summer Olympics in , the U. More recently, the role of sport psychologist has been called on to meet the increasing demand for anger management for athletes. Increasingly, Sport Psychologists have needed to address this topic and provide strategies and interventions for overcoming excessive anger and aggression in athletes, and techniques for athletes to manage emotions. A comprehensive anger management program for athletes was developed by Dr. Is sport psychology a branch of kinesiology or sport and exercise science like exercise physiology and athletic training? Is it a branch of psychology or counseling? Or is it an independent discipline? Danish and Hale contended that many clinical psychologists were using medical models of psychology to problematize sport problems as signs of mental illness instead of drawing upon the empirical knowledge base generated by sport psychology researchers, which in many cases indicated that sport problems were not signs of mental illness. Danish and Hale proposed that a human development model be used to structure research and applied practice. Instead, these authors proposed a special practicum in applied sport psychology that included greater contact hours with clients and closer supervision. There appears to be a rift between members of AASP who would like the organization to function as a trade group that promotes the CC-AASP certificate and pushes for job development, and members of AASP who would prefer the organization to remain as a professional society and a forum to exchange research and practice ideas. Many AASP members believe that the organization can meet both needs effectively. Silva highlighted five points necessary for AASP and the greater field of applied sport psychology to address in the near future: Orderly development and advancement of the practice of sport psychology Embrace and enhance interdisciplinary nature of sport psychology Advance development of graduate education and training in sport psychology Advance job opportunities for practice in collegiate, Olympic, and pro sports Be member-driven and service its membership Silva then suggested that AASP advance the legal standing of the term "sport psychology consultant" and adopt one educative model for the collegiate and post-graduate training of sport psychology consultants. Silva contended that future sport psychology professionals should have degrees in both psychology and the sport sciences and that their training ultimately conclude in the obtainment of a legal title. It was argued this should increase the likelihood of clients receiving competent service as practitioners will have received training in both the "sport" and "psychology" pieces of sport psychology. Applied[ edit ] Applied sport and exercise psychology consists of instructing athletes, coaches, teams, exercisers, parents, fitness professionals, groups, and other performers on the psychological aspects of their sport or activity. The goal of applied practice is to optimize performance and enjoyment through the use of psychological skills and the use of psychometrics and psychological assessment. The subject of "what exactly constitutes applied sport psychology and who can practice it? For instance, some question the ability of professionals who possess only sport science or kinesiology training to practice "psychology" with clients, while others counter that clinical and counseling psychologists without training in sport science do not have the professional competency to work with athletes. However, this debate should not overshadow the reality that many professionals express the desire to work together to promote best practices among all practitioners, regardless of training or academic background. There are different approaches that a sports psychologist can use while working with his clients. The psycho-physiological approach focuses on the processes of the brain and their influence on physical activity, and the cognitive-behavioral approach analyzes the ways in which individual thoughts determine behavior. Generally, there are two different types of sport psychologists: Educational sport psychologists[ edit ] Educational sport psychologists emphasize the use of psychological skills training e. Common areas of study[ edit ] Listed below are broad areas of research in the field. This is not a complete list of all topics, but rather, an overview of the types of issues and concepts sport psychologists study. Personality[ edit ] One common area of study within sport psychology is the relationship between personality and performance. This research focuses on specific personality characteristics and how they are related to

performance or other psychological variables. Mental toughness is a psychological edge that helps one perform at a high level consistently. Mentally tough athletes exhibit four characteristics: While many researchers have explored the relationship between arousal and performance, one unifying theory has not yet been developed. However, research does suggest perception of arousal i. People who play or perform for internal reasons, such as enjoyment and satisfaction, are said to be intrinsically motivated, while people who play for external reasons, such as money or attention from others, are extrinsically motivated. In this day and age, more and more youth are being influenced by what they see on TV from their sport idols. For that reason it is not rare to see a seven-year-old play acting in a game of soccer because they are being socially influenced by what they are seeing on TV. Life skills refer to the mental, emotional, behavioral, and social skills and resources developed through sport participation. Parenting in youth sport is necessary and critical for young athletes. For example, research suggests children want their parents to provide support and become involved, but not give technical advice unless they are well-versed in the sport. Coaching[ edit ] While sport psychologists primarily work with athletes and focus their research on improving athletic performance, coaches are another population where intervention can take place. While winning is the overall goal of sports competitions regardless of the motivational climate, a task-orientation emphasizes building skill, improvement, giving complete effort, and mastering the task at hand i. Effective coaching practices explore the best ways coaches can lead and teach their athletes. For examples, researchers may study the most effective methods for giving feedback, rewarding and reinforcing behavior, communicating, and avoiding self-fulfilling prophecies in their athletes. This relationship will be the basis for an effective performance setting. This research focuses on team tendencies, issues, and beliefs at the group level, not at the individual level. It is important to note that collective efficacy is an overall shared belief amongst team members and not merely the sum of individual self-efficacy beliefs. Leadership can be thought of as a behavioral process that influences team members towards achieving a common goal. Research on leadership studies characteristics of effective leaders and leadership development. Evolutionary perspectives[ edit ] Recently some studies have been influenced by an evolutionary psychology perspective. A decreased testosterone level may decrease dominant and competitive behaviors which when the status conflicts involved fighting may have been important for preventing physical injury to the loser as further competition is avoided. Arousal regulation[ edit ] Arousal regulation refers to entering into and maintaining an optimal level of cognitive and physiological activation in order to maximize performance. This may include relaxation if one becomes too anxious through methods such as progressive muscle relaxation , breathing exercises, and meditation, or the use of energizing techniques e. The aim of MAC is to maximize human potential for a rich, full and meaningful life. In a study done by Frank L. Also, the effect of mental barriers on her game decreased from 8 out of 8 to 2. In this case, the vocabulary and examples in the protocol were tailored to be more practical for a year-old. After performed the MAC protocol for several weeks, the diver showed between a 13 to 14 percent increase in his diving scores. Goal setting[ edit ] Goal setting is the process of systematically planning ways to achieve specific accomplishments within a certain amount of time. Monsma, short-term goals should be used to help achieve long-term goals. Monsma also states that it is important to "set goals in positive terms by focusing on behaviors that should be present rather than those that should be absent. Preperformance routines[ edit ] Preperformance routines refer to the actions and behaviors athletes use to prepare for a game or performance. This includes pregame routines, warm up routines, and actions an athlete will regularly do, mentally and physically, before they execute the performance. Frequently, these will incorporate other commonly used techniques, such as imagery or self-talk. Examples would be visualizations done by skiers, dribbling by basketball players at the foul line, and preshot routines golfers or baseball players use prior to a shot or pitch. This allows the muscles and mind to develop better motor control.

*History of Sport. Motor Behavior. Sport and Exercise Science/Kinesiology. Case Studies in Sport and Exercise Psychology. International Journal of Golf Science.*

At the Olympics held in St. Louis, Thomas Hicks won the gold medal in the marathon. At the kilometer mark a few kilometers later, nearing collapse, he received two eggs, a sip of brandy, and a small dose of strychnine erroneously thought to be a stimulant and later used as a rat poison. Over the final 2 kilometers that included two hills, he was given two more eggs and two more shots of brandy, purportedly one for each hill. He finished the race but was unable to receive his trophy because he was in medical distress. So much for the prevailing advice on sport nutrition at the time! Sport nutrition, which can also be called exercise nutrition, is the application of nutrition principles for the purpose of improving training, recovery, and performance. Exercise nutrition is a logical name for this discipline because it also reflects the close relationship between the academic fields of exercise physiology and nutrition. However, the field is much more commonly called sport nutrition. Sports are competitive physical activities, although the term is being expanded to include other competitions interestingly, poker tournaments are now being covered in the sports section of some newspapers. Although exercise nutrition is perhaps a better term, sport nutrition is likely to remain the most widely used term and is used throughout this book. Origins and History of Sport Nutrition Athletes have always been advised about what to eat, but the academic field now known as sport nutrition began in the exercise physiology laboratories. Historians consider the first studies of sport nutrition to be those of carbohydrate and fat metabolism conducted in Sweden in the late 1800s. In the late 1800s Scandinavian scientists began to study muscle glycogen storage, use, and resynthesis associated with prolonged exercise. Technology was also developed to help those scientists measure human tissue responses to exercise. In something else was born in the laboratory. At the University of Florida a team of researchers led by Dr. In the 1900s exercise physiologists worldwide, but particularly in the United States, began to develop exercise physiology laboratories at universities and to study trained athletes. Distance runners and cyclists were most frequently studied because these athletes were in danger of depleting their glycogen stores and these sports could be simulated easily in the laboratory with the use of treadmills and stationary bikes. Research facilities at military and astronaut training centers also were developed because these individuals need to be in top physical condition. Much of the initial published research focused on the use of carbohydrate. Some research on protein was conducted, but studying protein was much more difficult than studying carbohydrate because protein is found in so many different places in the body. Bodybuilders were particularly interested in knowing more about how to obtain the maximum amount of protein and the highest rate of protein synthesis in skeletal muscles, but there was little research to answer their questions. Some scientists questioned whether bodybuilding was a sport; many considered it more of a sideshow compared to other athletic competitions. For these and other reasons, bodybuilders began to learn about nutrition via personal experimentation and trial and error. Although there is more research on protein today, many of the fundamental questions about the amount and timing of protein intake remain because of the difficulty of studying these subjects. The optimal amount of protein intake for athletes continues to be a controversial subject. As is the case with much laboratory research, knowledge leads to application. This resulted in more collaboration between exercise physiologists and nutritionists, particularly beginning in the 1900s. For example, exercise physiologists were discovering that endurance athletes, such as marathon runners and long-distance cyclists, benefited from consuming approximately 8 grams of carbohydrate per kilogram of body weight daily. But what food and beverages did athletes need to eat to obtain this much carbohydrate? The expertise of nutritionists was needed for translating scientific information into practical applications. The 1900s marked the emergence of the field known as sport nutrition. Considering its importance in supporting excellent athletic performance, sport nutrition as a specialized discipline developed relatively late. Initially, much of the focus was on endurance athletes, which paralleled the exercise physiology research that was being conducted. In fact, athletes were typically characterized as either endurance or strength athletes. Endurance athletes often focused primarily on

carbohydrate intake; strength athletes focused primarily on protein intake. During this time tremendous advances were being made in the training of athletes. By the s resistance training was becoming a part of nearly all training and conditioning programs, including those for endurance athletes. Many predominantly strength athletes were beginning to incorporate more aerobic activities into their training. Strength athletes more carefully considered their carbohydrate intake, and endurance athletes were more thoughtful about their protein intake. Athletes also began to train harder and for longer periods than in the past. Nutrition was widely recognized as a way to support training and speed recovery.

**Chapter 5 : Sports science - Wikipedia**

*tural foundations into sport psychology and sport sociology, sport psychology is the only subdiscipline commonly found in the kinesiology curriculum. The fields of study or subdisciplines of our field are shown in Figure*

This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed. July Learn how and when to remove this template message Sports science can trace its origins to ancient Greece. The noted ancient Greek physician Galen “ wrote 87 detailed essays about improving health proper nutrition , aerobic fitness, and strengthening muscles. New ideas upon the working and functioning of the human body emerged during the renaissance as anatomists and physicians challenged the previously known theories. Allied with this was a large increase in academia in general, universities were forming all around the world. Importantly these new scholars went beyond the simplistic notions of the early Greek physicians, and shed light upon the complexities of the circulatory, and digestive systems. Furthermore, by the middle of the 19th century early medical schools such as the Harvard Medical School , formed began appearing in the United States, whose graduates went on to assume positions of importance in academia and allied medical research. Medical journal publications increased significantly in number during this period. In , three articles on physical activity appeared in the first volume of the American Journal of Physiology. Other articles and reviews subsequently appeared in prestigious journals. The German applied physiology publication, Internationale Zeitschrift fur Physiologie einschliesslich Arbeitphysiologie “; now known as the European Journal of Applied Physiology and Occupational Physiology , became a significant journal in the field of research. A number of key figures have made significant contributions to the di Austin Flint, Jr. Coauthored text on exercise physiology. George Wells Fitz, M. August Krogh “ Won the Nobel prize in physiology for discovering the mechanism that controlled capillary blood flow in resting or active muscle. Wrote a seminal paper which evaluated the physical working capacity of men and women aged 4“33 years. Study of sports science[ edit ] Higher-education degrees in Sports Science or Human Physiology are also becoming increasingly popular with many universities now offering both undergraduate, postgraduate and distance learning degrees in the discipline. Opportunities for graduates in these fields employment as a Physical Education teacher , Dietician or Nutritionist , Performance Analyst, Sports coach, Sports therapist, Fitness centre manager, Sports administrator, Strength and Conditioning specialist or retail manager of a Sports store. Graduates may also be well positioned to undertake further training to become an accredited Physiotherapist, Exercise Physiologist, Research Scientist and Sports Medical Doctor. Academic journals in sports science[ edit ].

## Chapter 6 : Origins and history of sport nutrition

*Exercise and sports science concentrates on the study of human movement from developmental, mechanical, motor control, psychosocial, psychological, historical, pathological, and physiological perspectives.*

Although the date of the first Olympic games is shrouded in myth, it is said that the first Olympic games occurred in BC. Citizens would gather to watch a series of athletic competitions every four years. Ever since the very first occurrence of sport, humans have been trying to gain an edge on the competition and thus, sport science was born. It was this desire to enhance athletic performance that sparked a revolution in the way athletes would prepare for competition. Progressive Training, The Early Years In the 2nd century, Galen, an ancient Greek physician and philosopher compiled essays about proper nutrition, aerobic fitness and strengthening muscles. Galen is also credited with describing various strength exercises through the usage of halteres, which were an ancient form of the modern day dumbbell. According to ancient Greek legend, in the 6th century famed wrestler Milos of Croton created the very first progressive resistance training program. Milos trained by carrying a newborn calf on his back everyday until it was fully-grown. Although primitive, it was this simple program of weighted carries that laid the foundation for centuries of research on improving health and fitness. The Summer Olympics were to be held in Berlin, Germany. The leader of the German people at the time, Adolf Hitler had something to prove to the world. The Nazi governing party of Germany wanted to demonstrate to the world through sport, the power of the German people. Hitler sought out to prove the strength of his German people, German athletes trained harder and smarter than the rest of the world. The Olympic games will go down in history as one of the most infamous sporting events ever hosted. As the world braced itself for another world war, these two countries strived to show their dominance over the other in anyway possible. It was this fierce and competitive battle in the sporting arena that led to some of the most important developments in sport science. American and Soviet sport scientists created many of the concepts that we now accept as important fundamentals into any fitness regimen today. At a time where other nations were merely in the infant stages of sport science, the Soviets were busy running a wide variety of studies on various training methodologies. As a result of the extensive studies that were performed, Soviet sport scientists developed: Periodization Various methodologies for strength and power development Optimal work to rest ratios Regeneration and recovery strategies Optimal training stimulus to facilitate specific adaptations Contributions of different energy systems to sport performance Optimal nutrition practices Ergogenic aids and performance enhancement strategies Interval Training While the Soviet Union was continuing to accumulate Olympic medals, the United States was undergoing its own sport science revolution in an attempt to keep up. The Aerobic Revolution In , Dr. Cooper was befuddled by the poor performances of strong athletic males in endurance activity scenarios. To solve this issue, Cooper coined the term aerobics and developed his own training methodology. Cooper is often credited with sparking the popularity behind physical fitness and starting the fitness revolution in the United States. Eastern and Western Theories Converge During the late s soviet theory began to find its way to America. In the s the American sport scientists began using the same training methodologies that the Soviet Union had been employing for years. As a result the United States began to catch up to the Soviet Union as evidenced by the chart below.

## Chapter 7 : History of Exercise Science

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## Chapter 8 : Major to Career: Exercise and Sports Science

*The Birth of Sport Science In a world full of conflict over our differing values and beliefs, sport has been one of the strongest unifying factors since the very first Olympiad. Although the date of the first Olympic games is shrouded in*

*myth, it is said that the first Olympic games occurred in BC.*

## Chapter 9 : School of Sport and Exercise Science

*History of Exercise Science The discipline of exercise science dates back to significant studies in the early 20th century, when bone transformation, muscle fibers, and exercise testing were being analyzed, particularly at resurgence of the Olympic games.*