



## Why Do We Practice? A quick look at the History of Sports Medicine by Rob Nix

Do you wonder why a doctor practices medicine even after all that training? Medicine in context of sports, movements, and exercise is a very new concept. The field of sports medicine is defined as a medical subspecialty responsible for continuous care, enhancement of health and fitness, and prevention of injury and illness to an individual engaged in physical exercise and sports. In the spectrum of science, sports medicine was never a prime concern. It was not until the last couple of generations that exercise was looked to prolong life and can improve your body's day to day function. Gears of concern changed and Sports Medicine became into mainstream media. You are active and take this science for granted. But years ago exercise was looked down upon and the body's signs of physical work offered only signs of serfdom and lower class citizens. To follow, you will have a brief history of the movement science we now refer to as sports medicine.

At the beginning of recorded time, humans have been doing the right things. As far back as the Primitive Era (2500 B.C), the Chinese were using exercise to overcome and prevent disease in efforts of prolonging life. In the days of the Greek Era 9500 B.C. athletics were a large part of life and entertainment. Greek physicians began involving themselves with athletics. Herodicus (480 B.C.) is recognized as the first "Teacher of Athletic Medicine". Hippocrates (460 B.C.) is responsible for the development of medicine. He spent much time preparing athletes for competition and treating their injuries. Aristotle (340 B.C.) was another popular physician. Athletics were more than a sport, the Greeks built physical activity and training into their daily lives and education systems as a tool to thwart invasion from other countries.

The science briefly took off during the Roman Era (150 A.D). A Greek physician, named Clautius Galen moved to Rome and became the *team physician* to the gladiators! This may have been the first team coach of sorts in time. He optimized his unique position and gave four great contributions. The first was that muscles contract and shorten. Second, nerves carry a stimulus from the brain to the muscles. Thirdly, he noted that arteries take a substance (found to be Oxygen) from the lungs outwards to the tissues. Galen inevitably developed therapeutic rehabilitation exercises for his gladiators after injury. The Dark Era (1500 A.D.) offered little scientific developments. Humans heavily concerned themselves with warfare in those days. Supposedly many physicians were turning society *off* of exercise habits and routines. Ironically the physicians of the time **mistranslated** the Greek texts to mean that vigorous exercise and sports were not advisable.

When science began looking at exercise again, it became known as the Modern Era (1600-Present Day). During the 1600's William Harvey discovered and described the flow and circulation of blood. Other medical writers of the day claimed that exercise could "preserve health". In the 1800's, the science finally became quantified. An English physiologist, Edward Smith, was the first to quantify the amount of *work* output. He actually built a large treadmill to hold 10 prisoners for work force and then used wind resistance to adjust the power levels. In Scandinavia, a large movement began and separated itself from conventional medical fields. It was named *Gymnastics*. The new field organized the use of exercise to improve and develop physical and mental attributes.

America in the 1900-2000 years showed many improvements and discoveries. From 1900-1920, A.V. Hill, an English physiologist, won the Noble Prize for work in muscle physiology. He is considered to be the "First Exercise Physiologist." Two pioneer men studied under Hill. These two men established the Harvard Fatigue Lab. This is where it all started to boom. This is the very first exercise physiology lab in the US and it was literally in the basement of the Harvard Business School. Bruce Dill was one of the two founders and acclaimed as the *first American Exercise Physiologist*. He is highly published on exercise and physical chemistry, mainly on hemoglobin. The second founder, Joseph Wolfe, went on to create the American College of Sports Medicine (ACSM) in 1954.

The Harvard Fatigue Lab truly set a new science in motion. During the 1940-1960's, the Army Research Lab in Natick, Massachusetts began tests. They eventually established progressive research on body composition, the body's response to heat and cold during exercise, and much more. The 1960- 1980 years became the beginning of a fitness boom within mainstream media and society. This sudden resurgence of fitness and exercise lead Ken Cooper to coin the term and popular group training style, *Aerobics*. Research began into exercise effects from altitude, heart disease, nutrition, and surgical techniques and materials. All of which play vital roles in athletics and rehabilitation.

The present day is anyone's guess. Things may be discovered that will shake the foundations of exercise science. Just these last few years, the food pyramid was completely redesigned to include different aspects of activity levels and body types within society. Recent advances with laptop computers and processing speeds, biochemical analyzers, and gas analyzers that sense your breathing exchange while moving. If your athletic curiosity demanded, you can now find out the ratio of muscle fiber types by essentially using a thick needle and pulling out a small cylinder of muscle tissue. Surprisingly it is a painful and invasive quick prick. This is named NMR spectroscopy and imaging. We, in the industry are always practicing. We always adapt routine not only to maximize results but also to adapt to the ever-changing new science. The future is limitless with the human body.