



Careers in Sports Medicine and Exercise Science

Career decisions are often difficult to make. The fields of sports medicine and exercise science are developing so rapidly that choosing the right career in this area can be overwhelming. The American College of Sports Medicine has created this guide to help you better understand the career opportunities available to you in sports medicine and exercise science.

What is Sports Medicine and Exercise Science?

SPORTS MEDICINE is the field of medicine dealing with injuries sustained in athletic endeavors and/or illnesses impacting sport performance. Sports medicine focuses not only on the diagnosis and treatment of diseases and injuries related to sports, but also on injury/disease prevention and management. The goal of sports medicine is to assist the athlete in achieving both optimal health and peak performance.

Historically, sports medicine was provided by the “team physician” who worked primarily with college, professional, and other elite caliber athletes. Today, sports medicine involves a comprehensive team of health care professionals trained in a variety of backgrounds such as athletic training, biomechanics, exercise physiology, physical therapy, nursing, sport psychology, and nutrition. Additionally, sports medicine is available to individuals participating at all performance levels ranging from the recreational to the professional athlete.

EXERCISE SCIENCE is the study of physiological and functional adaptations to movement. Most colleges and universities provide specific curriculum and/or academic majors in the exercise sciences. Undergraduate programs are typically broad based and include general study in biology, chemistry, biochemistry, anatomy and physiology, kinesiology, exercise physiology, and fitness programming. Graduate level programs typically provide systematic study in specific areas of exercise physiology with an emphasis on research.

Career opportunities for individuals graduating with degrees in exercise science are numerous. Common career tracks range from the research scientist to the exercise practitioner in fitness and/or clinical settings. In addition, other disciplines find it helpful to include coursework in the exercise sciences. It is very common for individuals studying in the exercise sciences to work in the field of sports medicine.

What Can I Do With a Degree in Sports Medicine or Exercise Science?

The list below is just a sampling of career opportunities available in sports medicine and exercise science. Typical job responsibilities as well as educational requirements are included.

GROUP EXERCISE INSTRUCTOR

A group exercise instructor leads exercise sessions for a group of participants. The group may be heterogeneous — for example, individuals with different fitness levels, medical concerns and ages; or the group may be homogeneous — for example, individuals who have similar characteristics such as those with arthritis, older adults who are frail, or women who are pregnant. Examples of group exercise instruction include land-or water-based general classes, dance/step aerobics, chair aerobics, and cycling. Group exercise instructors can be employed in a variety of settings including commercial fitness centers, employee fitness programs, and hospitals. Minimal requirements should be an undergraduate degree in a health-related field and a recognized certification.

ATHLETIC TRAINER

Athletic trainers work with team physicians, exercise physiologists, physical therapists, and coaches in the care and prevention of illness and injuries related to sport and exercise. An undergraduate degree from an accredited program by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) is required to sit for the National Athletic Trainers' Association (NATA) certification examination beginning in the year 2004. In most states licensure is required. One of the requirements for licensure is to successfully pass the NATA certification examination. Athletic trainers typically work with athletes at the high school, college, or professional level. They are also employed in sports medicine clinics.



**Sports Medicine is the field of
medicine concerned with injuries
sustained in athletic endeavors,
including their prevention,
diagnosis, and treatment.**

BIOMECHANIST

Biomechanics is the study and explanation of the laws of physics as applied to physical activity, exercise, and sport.

Biomechanics can be used to explain how muscles, bones, and joints are injured under certain conditions, and to improve performance using motion analysis techniques. Biomechanists are typically employed in research settings and clinical sites, but future growth appears to be in industrial ergonomic settings. Minimal requirement is a master's degree.

CARDIOPULMONARY REHABILITATION SPECIALIST

Clinical exercise physiologists, nurses, physical therapists, and respiratory therapists are most often employed in cardiopulmonary rehabilitation programs. These clinicians are typically responsible for providing exercise education regarding disease management, lifestyle modification, and psychosocial support to patients with cardiac and/or pulmonary disease. Clinical settings generally include hospitals, outpatient clinics, and medically supervised fitness centers. An undergraduate degree in one or more of the disciplines noted above is required, however, advanced degrees with specialty certification (*e.g.*, American College of Sports Medicine Exercise Specialist® certification) improves opportunities for employment.

DIETITIAN / SPORTS NUTRITIONIST

Dietetics is the study of nutrient intake and how foods are digested and metabolized in order to provide the necessary energy to fuel muscular activity. Dietitians also study dietary patterns in order to maximize performance and prevent disease and improve health. To become a registered dietitian, you must complete an undergraduate degree in dietetics, complete a nine-month American Dietetics Association (ADA)-approved internship and pass the ADA certification examination. Additional specialized training is necessary. Dietitians can be employed in a variety of settings including hospitals, clinics, sports complexes, school systems, and public health facilities.

EMPLOYEE FITNESS DIRECTOR

Employee fitness programs are common in the workplace, especially in the corporate, commercial, and hospital setting. Along with conducting exercise programs and supervising all fitness staff, the employee fitness director may also be trained as a wellness specialist to provide broad-based health promotion and wellness education programs. These may include stress management and nutrition education programs. Traditionally, workplace exercise programs have been for healthy individuals only.

However, employee fitness centers are becoming more clinically based in terms of exercise training for all types of clients, including those with cardiac,

pulmonary, or musculoskeletal problems. An undergraduate degree is typically required to work with special population clients. It is also recommended to obtain a recognized certification, such as the ACSM Health/Fitness InstructorSM.

EXERCISE PHYSIOLOGIST

An exercise physiologist studies the acute and chronic physiological responses and adaptations resulting from physical activity. They can apply this knowledge to improve or maintain health, fitness, or performance. Traditionally, exercise physiologists worked and studied only with athletes to improve performance. Today, however, exercise physiologists also work and study in commercial, clinical, and workplace settings to increase health, fitness, and quality of life in the general population. For example, an exercise physiologist may work as a cardiopulmonary rehabilitation specialist, a personal trainer, or direct an employee fitness program. At least an undergraduate degree is required. It is also recommended to obtain a recognized certification, such as one from the American College of Sports Medicine.

MEDICAL DOCTOR

A medical doctor is highly trained in the art and science of the diagnosis and treatment of disease and the maintenance of health. Medical schools require a minimum of four years after a basic college degree. Beyond medical school there are many specialties to choose from in order to be part of a sports medicine or exercise science team, including primary care sports medicine, orthopedic surgery, or cardiology. Each specialty has three to five years of internship and residency training and perhaps an additional one to two years of fellowship training. Most medical doctors are employed in clinics or hospitals.

OCCUPATIONAL PHYSIOLOGIST

Occupational physiologists work with many different professionals to improve the performance of workers by enhancing their health and occupational abilities, preventing or rehabilitating workplace injuries, and redesigning the work environment to fit the worker. They may also develop and administer pre-employment physical capacity tests to determine if the worker is fit to perform the job. An advanced degree beyond the undergraduate level is typically required, and it is helpful to be certified by the Board of Certification in Professional Ergonomics.

**Exercise Science is the
study of movement and the
associated functional
responses and adaptations.**

PERSONAL TRAINER

A personal trainer typically works one-on-one with an individual and is generally paid by the hour or exercise session. The exercise session can take place at the client's home, the trainer's place of employment or business, or at a third-party fitness facility. A personal trainer should have a strong background in anatomy and kinesiology as a large part of this job deals with muscular strength and endurance training. At least an undergraduate degree and recognized certification, such as the American College of Sports Medicine Health/Fitness InstructorSM, is recommended.

PHYSICAL / OCCUPATIONAL THERAPIST

The physical therapist helps people recover from injuries or diseases of the muscles, joints, nerves, or bones. The occupational therapist works more with fine motor skills and dexterity. Both therapists use various physical modalities and exercise, focusing on movement dysfunction. There are many areas of specialization in physical therapy including cardiopulmonary rehabilitation, sports medicine, and biomechanics. Most physical and occupational therapy schools require two to three years after a four-year undergraduate degree. After formal training, one must pass a national examination to become a licensed physical or occupational therapist. Professionals interested in continuing their education in this field may want to consider the ACSM Health/Fitness InstructorSM certification along with the national examination. Most employment opportunities are in hospitals and clinics.

RESEARCHER

Researchers conduct studies from either a basic or applied scientist's perspective. Basic researchers usually conduct studies with a focus on the cellular and molecular levels, such as how organ systems work, adapt or respond to various factors. Sometimes this is referred to as bench research, especially if animal models are used. Applied researchers usually conduct studies with a focus on more practical questions that appear to be more applicable for immediate use, such as ways to increase athletic performance or how to improve health and reduce disease. Either career requires getting a terminal degree, such as a Ph.D., which involves at least four to five years beyond the undergraduate level. Most researchers are employed by universities and hospitals.

**STRENGTH (SPORT) AND
CONDITIONING COACH**

Sport teams at the high school, college, and professional levels employ strength and conditioning coaches. Their

role is to develop and supervise specific conditioning programs to increase athletic performance such as speed, agility, strength, endurance, flexibility, and power. Positions usually require a master's degree and certification by the National Strength and Conditioning Association.

TEACHER

Teachers can be employed at the elementary through college level. If you desire to teach physical education or coach at the elementary or secondary level, an undergraduate degree is required and you must be certified in the state where you teach. With a master's degree you may be able to teach at a college, junior college, or university, especially if coupled with practical experience. However, these opportunities are limited. In higher education, it is customary to hire those with a terminal degree, such as a Ph.D., which is four to five years beyond the undergraduate level. Teachers at the college or university level are often expected to conduct research.

As you can tell from the sampling of careers listed above, there is a diversity of career opportunities, fields of study, and specialty areas in sports medicine and exercise science. Most undergraduate degrees in sports medicine or exercise science require a strong background in the basic sciences which will prepare you for graduate level work or professional school should you choose to pursue an advanced degree. Check with schools that interest you to identify the specific requirements for admission to graduate or professional degree programs.

What Starting Salary Can I Expect?

With an undergraduate degree and no experience, you may find that starting annual salaries vary widely, with some starting in the \$25,000-\$35,000 range. Understand that starting salaries for sports medicine and exercise science professionals are so varied because of factors such as experience, geographic location, employment setting, and market demand. Other factors, such as advanced degrees, professional licensure, and certification will influence pay scales. A good way to gauge what salary you can expect is to speak with professionals who currently work in your field of interest.

Attaining a Career in Sports Medicine or Exercise Science

Now that you know a little more about sports medicine and exercise science, how do you know whether a career in this profession is for you? Answering the questions and following the advice provided below may be helpful in making your decision.



Assess Your Interests

Do you participate in and enjoy exercise? Are you interested in any of the specialty areas, career opportunities, or fields of study mentioned in the previous section such as medicine, rehabilitation, teaching, research, or fitness? Have you enjoyed classes in high school or college such as physical fitness, biology, health and wellness, and nutrition? Do you enjoy reading health and wellness magazines or journals in medicine, health, and fitness? Do you enjoy helping and working with people? When you read job opportunities in the classifieds do you get excited about the possibility of working in sports medicine/exercise settings?

Determine Your Career Goals

Where do you see yourself in five years? Are you willing to commit to the necessary education, academic training and professional preparation that are required? Can you afford higher education costs? Will you enjoy taking courses in anatomy and physiology, chemistry, biology, and math? How about courses such as exercise physiology, nutrition, behavior modification, kinesiology, and exercise prescription? Do the colleges and universities that are of interest to you offer the coursework and preparation that will help you to achieve your goals? Have you talked to people who currently work in your field of interest including college professors who teach in sports medicine or exercise science programs? Ask your teachers or guidance counselors to invite sports medicine or exercise science professionals to your school's career fairs. Have you volunteered or observed in sports medicine or exercise science settings? If not, ask your teachers, guidance counselors, parents, relatives, or friends to arrange opportunities for you to spend some time with sports medicine and exercise science professionals.

Get an Education

Most degree programs in sports medicine and exercise science have an "introduction to the profession" survey course. They are usually open to any student enrolled at

the institution and can be taken during the freshman year. The course will provide you with a great deal of information about the field as well as educate you on the coursework, specific degree requirements, and specialty areas that are provided at your school. More than likely, you will be required to volunteer and observe at various sports medicine and exercise science facilities in your area.

Get Certified

There are many organizations that offer certifications in exercise science. You will want to determine which one best fits your needs and educational background. While a college degree is generally the most desired type of formal training and experience, some employers also require a certification documenting a specific foundation in exercise science knowledge, skills, and abilities. ACSM certifications and registry credentials show employers that you have passed one of the most rigorous and up-to-date health/fitness and clinical exercise testing and programming examinations that attests to your reliability and credibility as an exercise science professional.

Getting Started

Sports medicine and exercise science offer exciting career opportunities. If you are interested in pursuing a career in these areas, you are strongly encouraged to obtain as much information as you can about the profession. We hope this information provided you with enough information to get you started. We wish you the best of luck as you prepare for your future.



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