

Introduction to Exercise Physiology

Exercise Physiology is a sub-discipline of Kinesiology that addresses 1) the short-term biological responses to the stress of physical activity and 2) how the body adapts to repeated bouts of physical activity over time. As such, exercise physiology professionals often have the responsibility of conditioning a person to a higher level of fitness and/or health while, at the same time, being aware of safety issues (risk of injury, illness, environmental exposure, etc.) associated with a single session of exercise. The type of client that can benefit from training under an exercise physiology professional varies greatly, ranging from world class athletes wishing to improve their performance to patients with chronic illnesses wishing to increase or maintain their ability to accomplish activities of daily living.

Significance

Although the title of "**Exercise Physiology**" is not new, the content of the course and the new approach to the texts of the proposed courses have necessitated the establishment of this field. It is necessary to expand basic knowledge in the field of Clinical Exercise Physiology, implement the scientific principles of the field, reflect on the new scientific findings in healthcare and academia, improve the quality of provided services to clients and make counseling services more effective in performing general physical activities and maintain good health.

In addition, the establishment of the PhD program of Exercise Physiology could be justified given the following parameters: the arrangement of physical activities based on the physiological foundations of various body organs in response to physical activity in order to prevent diseases associated with sedentary lifestyle, special nutrition, physical activity and health, contribution to scientifically traditional structures of physical activity in society, and providing efficient physical activity counseling services in clinical and non-clinical centers.

In our country, Exercise Physiology is one of the few subfields that has been established in Physical Education and its graduates have been taking a wide range of occupations. However, since this field is highly practical, when it comes to health and wellness, Clinical Exercise Physiology needs to be approved as a field by the Ministry of Health and Medical Education. Kerman University of Medical Sciences is the second university (following Baqiyatallah University) that has approved a PhD program in Exercise Physiology. This was also approved by the Ministry of Health and Medical Education on 07/19/2017 and in October 2018, the program welcomed its very first student.

Objective

The purpose of establishing a doctoral program in Exercise Physiology is to increase the theoretical and experimental knowledge of students in order to conduct research in Exercise sciences. It also serves to raise the awareness of relevant issues such as increasing the ability of athletes and non-athletes, rehabilitating patients, and assessing the effect of exercise and nutrition on patients' health

and performance. This program is also promising in training professional scholars interested in Exercise Physiology to later teach, research, plan, implement, and analyze relevant issues. The graduates of this program will then be able to take up some or all of the following tasks:

1. Clinical exercise physiologist

What they do: Clinical exercise physiologists often work with people who are dealing with chronic health issues that can be improved through medically supervised physical activity. Many of these clients have cardiovascular and pulmonary issues, so these physical regimens require great care in their design to avoid oversteering and exacerbating health issues. Clinical exercise physiologists are also responsible for the baseline testing, tracking and the interpretation of participant data.

Where they work: Clinical exercise physiologists often work for healthcare providers in specialized facilities. The work environment and the hours kept for this role are fairly steady, meaning there is not much need for travel or unconventional schedules. The work is typically a mix of desk work and hands-on testing and instruction.

2. Personal trainer

What they do: Personal trainers work with individual clients to help them achieve their fitness goals. They develop individualized workout routines depending on client needs and help prevent injury by teaching and coaching proper form. Personal trainers may also provide guidance on nutritional plans to help clients reach their health and fitness aspirations.

Where they work: Many personal trainers spend their time working in commercial gyms, either directly for the gym owner or as independent contractors. Some personal trainers may also work in smaller specialized boutique gyms or within the homes of their clients.

3. Wellness coordinator

What they do: Wellness coordinators are responsible for designing and implementing programs focused on improving employee wellbeing. These professionals benefit businesses by promoting healthy eating and lifestyles that can lead to happier, more productive employees. The duties of a wellness coordinator will vary depending on the employer, but many will spend their time organizing group fitness activities, nutritional information sessions and working with employees to help them reach their health goals.

Where they work: Wellness coordinators typically work for institutions like government agencies or large corporations. This is in part because their value is maximized by improving the health of larger groups of people. Their work primarily takes place in an office setting, so keep that in mind if you are set on avoiding a corporate environment.

4. Strength and conditioning coach

What they do: Strength and conditioning coaches are the professionals responsible for motivating competitive athletes to push the boundaries of their physical abilities on and off the playing field. They develop weightlifting and cardiovascular fitness routines that best prepare athletes for the rigors of competition. They also work closely with athletic trainers and physical therapists to ensure their plans are compatible with athletes who may be recovering from significant injuries. Like personal trainers, these coaches also ensure athletes are maintaining proper form and avoiding injury.

Where they work: Strength and conditioning coaches are primarily employed by universities and professional sports teams, though some may find employment working with youth sports. This role is fairly hands-on. You will spend a large portion of your time working with athletes in the gym or at other training facilities. That said, you can still expect to spend some time keeping office hours for maintaining the administrative side of the job.

5. Clinical research assistant

What they do: In the world of healthcare, research is always an ongoing process. Clinical trials are research studies that explore whether a specific medical strategy, treatment or device is safe and effective for humans. Clinical research assistants aid in these scientific studies by finding participants for trials, collecting data and analyzing the results. They are required to maintain a working knowledge of the participants being researched, as well as the technology that will be used in the trial. If you have a hunger to learn and a dedication to pursue answers to looming health-related questions, this could be the career path for you!

Where they work: Clinical research assistants work under supervising doctors and scientists in hospitals, laboratories and other institutions that conduct ongoing scientific studies.

Exercise Physiology Curriculum Planning Council

The Council Chair: Dr. Mohammad Khaksari Haddad

The Council members:

Dr. Hamid Najafipour

Dr. Zahra Soltani

Dr. Mohammad Pourranjbar

Dr. Ruhollah Nekouei

Dr. Forouzan Rafiei

Course specifications

Course Name: PhD in Exercise Physiology

Course length and the form of educational system:

The duration of the PhD program of Exercise Physiology is in concordance with the educational regulations of the PhD programs approved by the Supreme Council for Medical Science Planning. This course includes two stages of education and research.

The educational stage begins from the moment a student is admitted into the program and only after fulfilling all the theoretical courses as well as successfully passing the comprehensive exam, does the research stage of their education begin.