



Exercise

by Olivia Crosby

Megan Lukenbill helps cardiac patients develop stronger hearts, emphysema patients healthier lungs, and arthritic patients freer movements. As a clinical exercise physiologist at the Kosciusko Community Hospital in Warsaw, Indiana, she uses physical activity to treat people with illnesses. For Megan's patients, exercise is often the best medicine.

Patients with heart disease, diabetes, cancer, and a number of other conditions benefit from physical activity. But different activities are good for certain types of patients, and some activities are dangerous for people with particular medical conditions. Exercise physiologists like Megan prescribe exercise programs for each patient, monitor patients while they exercise, and track each person's progress.

When someone comes to the wellness center at the hospital where she works, Megan first conducts a fitness test to assess his or her physical condition. She usually asks patients to walk on a treadmill after connecting them to an EKG machine, to track heart rate and rhythm; a pulse oximeter, to track the oxygen in the blood; and a blood pressure cuff, to gauge the pressure exerted by the heart in pumping blood throughout the body. Megan also uses weights and other instruments to measure patients' strength and flexibility. Based on the results of these tests, she prescribes appropriate exercises.

In designing activity prescriptions,

Megan uses her understanding of how exercise affects the body. For example, when working with patients who have lung disease—which can cause shortness of breath, resulting in decreased oxygen levels—she recommends exercises that don't deplete too much of the oxygen in the blood. "Larger muscles use more oxygen," she says. "So when someone with lung disease comes in, we usually start with low-intensity exercises. Sometimes, we recommend an arm cycle instead of a regular bicycle because the muscles in the arms are smaller than the muscles in the legs." She slowly increases the difficulty of the activity to strengthen lung function.

Megan has an abundance of exercises to choose from when prescribing a regimen. She might ask patients with muscle weakness to push against an elastic band to build strength, eventually guiding them to more complex weight equipment. Most of the equipment her patients use is the same as that found in most gyms, but some is specially designed for clinical patients.

Evaluating patients and prescribing exercises are the first stages of Megan's work. She also demonstrates the exercises she recommends and explains the purpose of each activity. "Some of the people we help have never exercised before," Megan says. To be sure they understand her prescription, she teaches each activity one motion at a time.

The next phase of a hospital-based exercise program is monitoring patients as they work out. Megan and two other staff members track up to



Megan Lukenbill assesses a patient's fitness level before prescribing an exercise program.

Photos courtesy of Megan Lukenbill

eight patients at a time, making sure they exercise properly. Megan watches a computer screen that shows each patient's heart rate, blood oxygen level, and blood pressure throughout the regimen. Based on these measurements, she asks patients to increase or decrease their activity. "If patients exercise too much, they risk injury," says Megan. "For example, if lung patients exercise when they don't have enough oxygen in the blood, the body will start to break down muscle. But if patients exercise too little, they won't grow stronger."

Supervising eight patients at the same time requires concentration. Exercise physiologists stay alert for patient difficulties and are prepared to handle emergencies. They stand ready to assist patients who have heart attacks, fainting spells, allergic

Olivia Crosby is a contributing editor to the *OOQ*, (202) 691-5716.

physiologist

reactions, or other crises.

But it takes more than scientific knowledge and a close eye to practice exercise physiology. An outgoing personality and the ability to inspire and motivate patients are essential to the job. "You have to be good at relating to people and giving them confidence," Megan says. "People are scared when they start, especially people who have had heart attacks." Megan reassures and encourages her patients.

And one of the best forms of encouragement for exercise patients is their progress reports. Megan plots a patient's increasing strength on a chart and writes a detailed report describing his or her improving fitness capacity. She shares these reports with her patients and their doctors.

Like many exercise physiologists, Megan takes her skills outside the hospital and into the community several times each month. She conducts health screenings and exercise education classes at local businesses, checking employees' blood pressure, body composition, and strength and teaching people about the importance of exercise and good nutrition.

Clinical exercise physiologists like Megan often work in hospitals, physical therapy offices, and sports medicine clinics. Other types of exercise physiologists manage fitness programs for corporations and fitness centers. Some exercise physiologists work in professional athletic training programs, using their knowledge of the effects of exercise to analyze each athlete's sport and design an exercise program tailored to that sport.

The Bureau of Labor Statistics does not collect data on exercise physiologists. But according to industry sources, salaries vary widely, based in part on where exercise physiologists work. Most earn between \$20,000 and \$45,000 annually; those with doctoral degrees usually earn more.

Most exercise physiologists have at least a bachelor's degree in exercise science or exercise physiology. Among other subjects, they study biology, anatomy, and chemistry. Megan also has a master's degree, as do many exercise physiologists who work in hospitals. Those with doctoral degrees often teach exercise science in colleges and universities and conduct research on the effects of exercise.

And exercise physiology jobs usually require that applicants have CPR certification. Applicants for jobs in most hospitals must have certification in basic life support and basic or advanced cardiac care.

Professional registration and certification increases exercise physiologists' employment opportunities. Clinical exercise physiologists may register with the American College of Sports Medicine after earning a master's degree, passing an exam, and gaining at least 12,000 hours of hospital experience. The organization also certifies physiologists as exercise specialists if they have a bachelor's degree or equivalent experience, pass an exam, and gain at least 600 hours of hospital experience. And the American Society of Exercise Physiologists offers an exercise physiologist certification for workers who have a



Clinical exercise physiologists like Megan monitor and evaluate patients' progress.

bachelor's degree in the field and pass an exam. To keep certification current, exercise physiologists must take continuing education classes.

Megan enjoys learning about the latest scientific discoveries in her field, but what she likes best is using those discoveries to achieve results. "People don't realize the importance of exercise," she says. "We've had patients with congestive heart failure return to normal because of exercise. Not all recoveries are so dramatic, but we always strive to make people healthier and stronger." 