



THE UNIVERSITY OF TOLEDO MEDICAL CENTER

ORTHOPAEDIC MONTHLY

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UTMC's Orthopaedic Department to Introduce Geriatric Fracture Program



Colleen Taylor, along with Dr. Ebraheim, will manage the Geriatric Fracture Program at UTMC

The University of Toledo Orthopaedic Surgery Department will launch a geriatric fracture program in coordination with the opening of UTMC's new Orthopaedic Unit on the sixth floor of the hospital.

The highlight of the program will be a centralized telephone number where providers, patients and family members can call with referrals. The referral line number will be the same as the Orthopaedic Center's telephone number, 419.383.3761, and will be answered by orthopaedic center staff week days from 8 a.m. to 7

p.m., and by orthopaedic hospital staff on evenings and weekends. The line will be open 24/7. The referral line will allow those with referrals for the geriatric fracture program to connect with a staff member right away. The referral process will be streamlined so that this is the only call that a referring source will have to make. UTMC staff will coordinate with all internal and external parties in order to facilitate patient transfers and admissions.

UTMC was selected by Synthes, a leading international medical device company, earlier this year to participate in their geriatric fracture program. The goal of this program is to provide timely, cost-effective, patient-centered care to people 65 years and older who suffer fractures. The program has an interdisciplinary approach to the management and care of these patients. Falls are a leading cause of mortality and morbidity in this demographic group in the United States. Timely and effective management of geriatric patients by a knowledgeable team of specialists contributes to better outcomes for both patients and the facility.

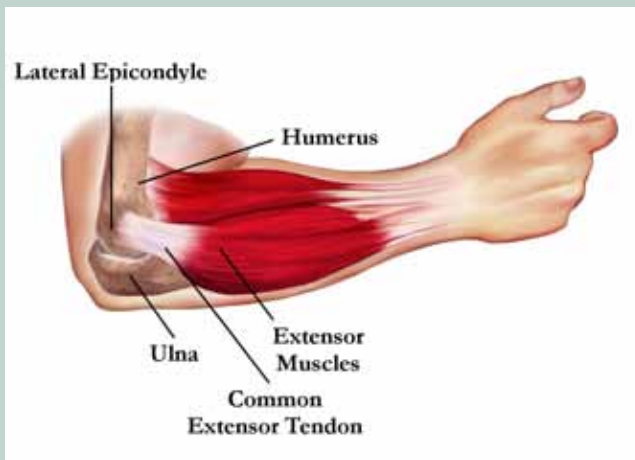
The geriatric fracture program will utilize standardized orders, care plans and discharge orders that are specific to geriatric patients. Osteoporosis screening and management will eventually be incorporated into the program, as osteoporosis is a contributing factor in fractures. Data monitoring will be performed in order to facilitate quality analysis and performance improvement.

According to Dr. Nabil Ebraheim, Chairman and Professor of Orthopaedic Surgery at UTMC, the geriatric fracture program will utilize the expertise of the University's nationally and internationally renowned specialists to provide care for the sick, the elderly and the injured. Specifically, patients will benefit from the care provided by the geriatric fracture team of specialists that includes cardiologists, geriatricians, internists, neurologists, pulmonologists, vascular surgeons and psychiatrists, among others.

Dr. Ebraheim, whose team of orthopaedic surgeons have extensive experience in the care and management of geriatric patients, will serve as the team leader for the geriatric fracture program. Internal data shows that more than 258 geriatric surgical cases were performed in fiscal year 2008. The Orthopaedic Department has already performed more than 191 geriatric surgical

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Tennis Elbow



Depiction of tennis elbow

Tennis elbow, also known as lateral epicondylitis, is an overuse injury due to inflammation of the tendons attaching the forearm muscles to the lateral (outside) epicondyle (bony prominence on the outside of the elbow). Usually occurring in the extensor carpi radialis brevis muscle, tennis elbow is the most common injury in patients with elbow pain. As the muscles are repetitively used, tissue inflammation or tears occur in the tendons attaching the forearm muscles to the lateral epicondyle.

While some may think tennis elbow is purely the result of recreational activities (tennis, squash, etc.), there are several occupational causes for tennis elbow including plumbing, painting, meat cutting and raking.

Patients with tennis elbow will most often report:

- Pain on the outside part of the elbow
- Pain with wrist extension
- Forearm weakness
- Point tenderness over the lateral epicondyle

To diagnose tennis elbow, physicians utilize a combination of physical examination and diagnostic imaging. During physical examination, physicians will apply pressure to various regions of the elbow and forearm and also ask patients to move their elbow, wrist and fingers in various ways. Physicians will also look for pain with applied pressure to the lateral epicondyle and pain with passive wrist flexion and resisted wrist extension. X-ray or MRI imaging may be utilized to rule out fracture or arthritis.

Tennis elbow is usually treated with a variety of conservative modalities. First, rest, ice and anti-inflammatory medications can be used to reduce inflammation. Another conservative measure is strengthening and stretching muscles through exercise. Physicians may also suggest braces or straps to reduce stress on the inflamed tissue. If these measures fail, physicians will likely perform corticosteroid injections to reduce pain, swelling and inflammation. While these injections provide temporary relief, they may not provide adequate long-term benefits.

There is also a new injection technique utilizing platelet-rich plasma. The idea behind platelet-rich plasma injections is to extract blood from a healthy part of the body, increase the platelet count through centrifugation, and then re-inject the platelet-rich plasma into an injured area. Here, the body utilizes its ability to heal itself by stimulating growth factors and promoting healing. In about 10 percent of patients, surgery is needed. For surgical patients, the diseased tissue is removed and the tendon is reattached to the bone.

While tennis elbow is a relatively common injury, there are certain preventative measures that can be taken, including:

- Warming up properly
- Utilizing ice
- Building strength and flexibility through exercise
- Reviewing your technique lessen the risk of tennis elbow

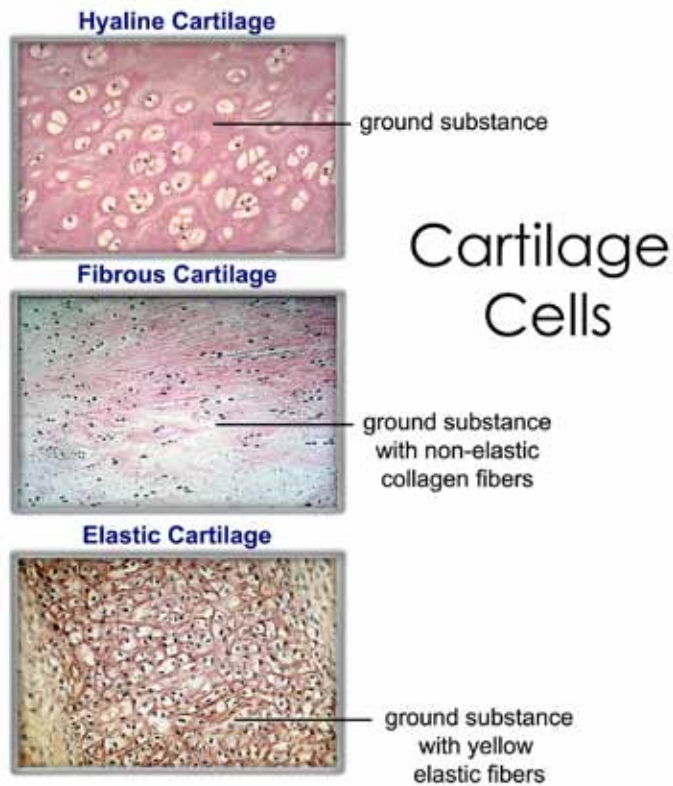
Geriatric Fracture Program

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cases since July 2009. UTMC Department of Orthopaedics is an incredibly safe place for geriatric patients to receive orthopaedic care. The mortality rate for UTMC orthopaedic surgeons remains one of the lowest in the country. In 2003/04, the mortality rate for orthopaedics for the top ten U.S. hospitals in U.S. News and World Report was 0.6 percent while the mortality rate at UTMC was 0.24 percent. Mortality rate for inpatients over the past three years has been very low with a rate of 0.007 percent in 2006/07, 0.007 percent in 2007/08, and 0.006 percent in 2008/09.

The geriatric fracture program will enable UTMC to further streamline the care offered to this patient population. The goal of the program is to continuously improve the level of services provided and to provide care that reflects the most current standards in orthopaedic and medical care. Ultimately, Dr. Ebraheim and his team want to make UTMC the premier place to seek and receive orthopaedic care in the area.

What is Cartilage?



Depiction of cartilage cells

Cartilage is the tough but flexible connective tissue that gives shape, support, and provides cushion between bones and joints.

Unlike other connective tissue, cartilage does not contain blood vessels. Instead, it is composed primarily of water and chondrocytes which produce and maintain a structural matrix giving tissue its form and function. There are three types of cartilage: elastic, hyaline, fibro.

Elastic cartilage, which is essential in keeping tubular structures from collapsing, is the most flexible form of cartilage due to the high elastic fiber content. It can be found in the larynx and outer ear. Hyaline cartilage is the most common type of cartilage and forms the smooth articular surface of joints responsible for providing cushion. It contains high amounts of Type II collagen and proteoglycan. The strongest and most rigid type of cartilage is fibrocartilage. Composed primarily of Type I collagen, fibrocartilage is found in high-stress areas such as the connection of tendons and ligaments to bones and also in intervertebral discs.

If cartilage is subjected to excessive weight, activity, overuse, improper alignment or injury it begins to wear away. Damage can usually be viewed on x-rays characterized by a narrowing of the joint space between the bones. There are several diseases that can arise including:

- Osteoarthritis - the wearing out of cartilage resulting in pain and decreased range-of-motion
- Costochondritis - chest pain due to an inflammation of the ribs
- Spinal disc herniation - the compression of the intervertebral disc, often causing back pain
- Rupture or detachment

Cartilage is typically very slow to heal due to its limited repair capabilities, however, there are methods being utilized to repair cartilage, including:

- Osteochondral grafting - harvesting healthy cartilage from one area and transporting it to the site of injury.
- Autologous harvesting - harvesting healthy cartilage cells, cultivating them and then implanting them in the injury site.
- Mesenchymal stem cell regeneration - taking bone marrow, placing it in gel matrix, and implanting it at the injured site.

What is Rickets?

Rickets is a condition in children characterized by softening or weakness of bones due to inadequate levels of vitamin D, calcium or phosphorus.

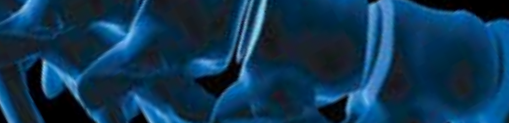
Vitamin D, which is absorbed through sunlight and consumption of certain foods, is essential in controlling calcium and phosphate levels in bones. When there is an inadequate amount of vitamin D in the body's blood levels, it reacts by removing calcium and phosphorus from bones to raise blood levels. This removal of calcium and phosphorus weakens and softens bones making them more susceptible to fracture and deformity. While rickets can occur in adults, it is most often found in children.

Patients with rickets present with the following symptoms:

- Pain or tenderness in the arms, legs, pelvis or spine
- Muscle weakness
- Dental problems
- Increased susceptibility for fractures (greenstick fractures common in children)
- Impaired growth
- Low levels of calcium in the blood
- Vitamin D deficiency

To diagnose rickets, doctors perform a combination of physical examination, blood tests and x-ray imaging. A thorough physical examination will demonstrate tenderness or pain in the bones and skeletal deformity. In addition, blood tests are extremely helpful in diagnosing rickets, as

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Rickets

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calcium and phosphorus levels can be checked for irregularities. Lastly, doctors may take x-rays to look for deformity in the shape or structure of bones and also look for calcium loss.

The goal for treating rickets is to correct the cause of the condition. Therefore, physicians will often attempt to increase the intake of phosphates and vitamin D. To accomplish this, doctors may suggest a change in the patient's diet to include food with high sources of vitamin D such as fish, liver and fortified milk. Doctors also recommend vitamin D supplements.

To prevent your child from developing rickets, provide an adequate amount of vitamin D, calcium and phosphorus.

In adults, a softening of the bone caused by vitamin D deficiency is known as osteomalacia. While similar to osteoporosis in the sense that the conditions cause a weakening of bone, osteomalacia is the result of a defect in the bone-building process. Osteoporosis, conversely, is the result of a weakening of previously constructed bone.



Rickets causes weakness in bone leading to a higher probability of deformity and fracture

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Neither Dr. Ebraheim nor Dave Kubacki have any relationships with industry to disclose.

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