

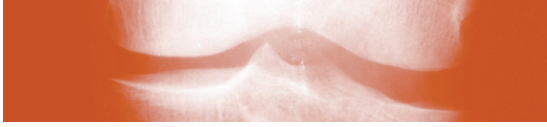

THE UNIVERSITY OF TOLEDO MEDICAL CENTER

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ORTHOPAEDIC MONTHLY

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Orthopaedic Center Patients Praise Quality of Patient Care

It's been nearly a year since the opening of the Orthopaedic Center, and patients are pleased with its access, service, convenience and quality patient care. Our goal is to create a convenient, patient-centered experience by having all services in one location. Patients have praised the care they have received and are excited to tell their stories.

Recently, Keith Bailey praised the Orthopaedic Center and the hospital for the care he received. Mr. Bailey was umpiring a baseball game when he was hit with a line drive to the lower left extremity, which shattered his tibia. While at Fisher-Titus Hospital in Norwalk, Bailey had a massive heart attack. He was sent to the University of Toledo Medical Center, where specialists from the Orthopaedic Center, vascular, and cardiac worked together to save his life. Mr. Bailey underwent triple bypass surgery as well as surgery to save his leg. The Orthopaedic team repaired Mr. Bailey's leg, while the vascular team repaied his arteries; he was then put in an induced coma for two weeks. Mr. Bailey and his wife returned to the Orthopaedic Center recently with only positive things to say about the experience.

Keith Bailey and his wife

"Every person, from the doctors and nurses, to the medical assistants, was great," Mr. Bailey said. "I can't tell you how happy we were that we were brought to the hospital and UT's Orthopaedic Center. It was truly a blessing."

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Wrist Injuries: Types and Treatment

One of the most common fractures seen in doctors' offices are wrist fractures. In fact, the wrist is the most commonly broken bone in patients under the age of 65. Roughly one quarter of all patients in a fracture clinic have suffered wrist fractures. A wrist fracture refers to a break in the radius (forearm).

Falls are the most common cause for wrist fractures. People tend to break their fall by putting their hands out in front of themselves, forcing backwards at a rate that exceeds what the wrist can handle. Typical symptoms include pain, swelling and deformity.

While many wrist fractures are treated conservatively with casting, many require surgery. Factors that determine the likeliness of surgery include, patient age, bone quality, and fracture location. If a patient is young and active, every effort will be made to restore the wrist to its normal shape. If bone is osteoporotic, surgery is less effective. In addition, if the fracture involves cartilage of the wrist joint, surgery is more likely. If the bone is severely misaligned, then surgery may be performed to properly position the fragments.

There are several types of wrist injuries, including distal radius fractures; Smith fractures; scaphoid fractures; and perilunate dislocations.

The radius is the larger of the two bones of the forearm. A fracture of the distal radius occurs when the area of the radius near the wrist breaks due to the radius bending away from the palm. These types of fractures are the most common wrist fractures and often occur during a fall when the wrist is in extension. It's important to look for median

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Quality of Patient Care

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According to Mr. Bailey's wife, the Orthopaedic Center and hospital staff went out of their way to take care of not only her husband, but also their family.

"I was really impressed with how well I was treated even though I wasn't the patient," Mrs. Bailey said. "The nurses would bring me treats and plates of food. They took care of me as if I were one of the patients there."

Mr. Bailey is not the only patient who wants to share their story. Recently, former body builder Daniel C. Przyojski visited the Orthopaedic Center for an appointment and talked about his experience. While working in a steel facility, Mr. Przyojski had 10,000 pounds fall on his right lower leg, shattering his tibia, fibula, and most of the bones in his foot. Initially, doctors thought Daniel would lose his right lower leg. When he came to the Orthopaedic Center, however, he was told he would be walking again in six months.

"Before I came to the Orthopaedic Center, I was the only person with any hope," Przyojski said. "Then I met with the doctors here and they told me I would be walking again in six months."

Today, after several major operations, Przyojski is on his way to recovery. He walks through the Orthopaedic Center for follow-up appointments without a limp. Not surprisingly, he has accolades for the new facility and the Center's staff.

"This new facility is impressive and elegant," Przyojski said. "The Orthopaedic Center Staff provides more personalized care than you could get anywhere else. They listen to your questions and address your needs."

Exceptional patient care is something the Orthopaedic Center has strived to provide since its opening a year ago. It currently offer appointments with an orthopaedic specialist within 24 hours of calling the Center. Patients with emergencies are seen immediately. With 10 specialists on staff, the Center is ready to handle simple or complex injuries and conditions from neck-to-toe and every bone and joint in between. With Saturday clinic hours and every service in one convenient location, access to orthopaedic care has never been easier. In addition, patients benefit from having access to the University of Toledo Medical Center, a Level 1 Trauma Center equipped to handle most serious types of injuries. Vascular, nephrology, neurology, pulmonary or cardiac specialists are available for consultation. The Center truly is a one-stop destination for comprehensive orthopaedic care.

Wrist Injuries

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nerve compression and injury to the extensor pollicis longus tendon if a distal radius fracture is suspected. Treatment is usually conservative for elderly patients. However, internal fixation is used for displaced intra-articular fractures, while external fixation is used for comminuted Colle's fractures.

Smith fractures, sometimes referred to as reverse Colle's fractures, are caused by falling onto a flexed wrist as opposed to falling onto a wrist in extension. This type of injury has a displaced bone such that the wrist joint rests in front of its normal anatomic position. More precisely, this is extra-articular fracture of the distal end of the radius with volar displacement of the distal fragment. Treatment for these fractures is reduction and volar-plate fixation.

Scaphoid fractures occur at the base of the thumb, just above the radius in the area where the wrist bends. Since scaphoid fractures do not always show up on x-rays right away, they are sometimes missed. Therefore, they are often best evaluated with an MRI. In addition, there is a high risk of both delayed union, non-union and avascular necrosis with proximal pole fractures. Avascular necrosis refers to dead tissue resulting from the temporary or permanent loss of blood supply to bones. Scaphoid fractures that are non-displaced and stable can be treated with cast mobilization. However, surgery will be needed for displaced fractures.

Distal Radius Fracture Depiction

One of the most devastating closed-wrist injuries is a perilunate dislocation. If a patient suffers a perilunate dislocation, it is important to look for median nerve injury and for dorsal intercalated segment instability (DISI) and volar intercalated segment instability (VISI). This refers to a loss of normal alignment between the scaphoid and lunate in the wrist. A normal wrist has a 45-degree alignment between the scaphoid and lunate. However, DISI will have an alignment greater than 60-65 degrees.

What is a Nerve?

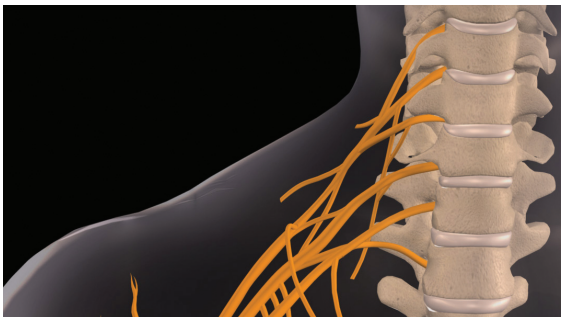
In the simplest form, a nerve is a bundle of nerve fibers that transmits electrical messages between the brain and other areas of the body. These messages convey sensory or motor function information.

Nerves are comprised of nerve cells called neurons. They receive and transmit electrical messages to and from the brain. One end of the neuron receives the message, while the other end transmits the message. When traveling from one neuron to the next, electrical messages cross a gap called a synapse. Neurons communicate with one another through axons and dendrites – projection of a neuron – that extend from their cell bodies. Axons and dendrites of multiple neurons serving a similar function come together with a piece of connective tissue to form nerves.

Neurons are very similar to other cells in the body as they are surrounded by a cell membrane, have a nucleus that contains genes, and contain cytoplasm. However, they differ from other cells in the body because they have axons and dendrites that bring information to and from the cell body. In addition, they communicate with each other through electromechanical processes.

Nerves are part of the peripheral nervous system, which connects the central nervous system to the limbs and organs. While it is similar to the central nervous system, it differs because it is not as well protected, leaving it susceptible to toxins and mechanical injuries.

There are two types of nerves: afferent nerves and efferent nerves. Afferent nerves, also known as sensory nerves, convey sensory signals to the central nervous system. They receive sensory stimuli. For instance, if you stub your toe, you sense pain. These are your sensory nerves at work. Efferent nerves, also known as motor nerves, send stimulatory



Depiction of a Nerve

signals from the central system to muscles and glands. Motor nerves lead to muscles and stimulate movement. For instance, when you move your arm to wave hello, your motor nerves are at work.

Damage to nerves can arise several different ways, including swelling, physical injury, infection, autoimmune disease, or failure of the blood vessels surrounding the nerve. Nerve damage may present symptoms such as pain, numbness, weakness or paralysis. An interesting aspect of pain related to nerve damage is that patients may feel symptoms in areas far from the actual site of damage. This type of pain, known as referred pain, occurs because signaling is defective from the damaged nerve area.

Nerve damage is diagnosed several different ways. First, doctors rely on thorough physical examination that test reflexes, directed movements, muscle weakness, and sense of touch. Additional testing may be ordered in the form of a nerve conduction study and an electromyography.

What is a Growth Plate and Growth Plate Fracture?

During childhood and adolescence, our bones grow through a process called ossification. During ossification, calcium and phosphate salts are laid down to replace cartilage or membrane.

Near the ends of each bone are areas of developing tissue that regulate and help determine the length and shape of the bone. These areas of developing tissue near the ends of the bones are known as growth plates or more technically, physis. The widened part of the shaft of the bone is known as the metaphysis, while the end of the bone is known at the epiphysis. Because growth occurs at the end of the bone, growth plates are the last portion of the body to ossify or harden. This leaves them susceptible to fractures. Injuries to the growth plates may result in limbs that are crooked or of unequal length. Therefore, immediate attention is required.

When growth is complete, growth plates close and are replaced by solid bone. However, until growth is complete, children are at significant risk for growth plate injuries. Typically, girls and boys near the end of their growth period are especially vulnerable. Statistically, boys are twice as often as girls to suffer growth-plate injuries. This can be attributed to the female body maturing at an earlier age than boys. In addition, one-third of all growth-plate injuries occur in competitive sports such as football or basketball. Moreover, about 20 percent of growth-plate fractures occur as a result of recreational activities such as biking, skiing, skateboarding or sledding, according to the American Academy of Orthopaedic Surgeons (AAOS). Growth-plate fractures account for 15-30 percent of all childhood fractures. They most occur most often in the long bones of the fingers, followed by the outer bone of the forearm at the wrist; tibia and fibia growth plate fractures are also common.

Growth-plate fractures are characterized by visible deformities, persistent pain, and an inability to move or put pressure on the limb. If a child or teen experiences any of these signs, they should seek medical attention.

Growth-plate injuries heal without any lasting effects in 85 percent of instances. However, there are certain factors that affect the

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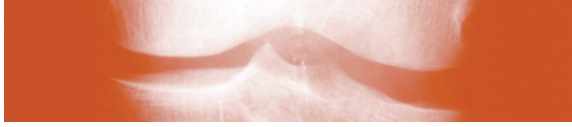

Growth Plate

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outcome and management such as severity of injury, age, growth plate affected, and the type of fracture. If injury causes the blood supply to the epiphysis to be cut off, growth can be stunted. In addition, an open injury carries the risk of infection which could destroy growth plates. A child can also affect outcome and management. If a child is younger, growth arrest can be more serious. In addition, some growth plates are more involved in extensive bone growth.

The type of growth-plate fracture are usually categorized in six types.

A Type I fracture describes a break in the bone through the growth plate, but no shift of bone occurs. This fracture usually heals well and requires immobilization.

A Type II fracture is a break through part of the bone at the growth plate and a crack through the bone shaft. This type of fracture is the most common. It is usually treated with cast immobilization, although surgery may sometimes be required

A Type III fracture is a break through the bone at the growth plate, separating the bone end from the bone shaft and completely disrupting the growth plate. This type of fracture requires surgical treatment in the form of internal fixation to ensure alignment.

A Type IV fracture crosses through a portion of the growth plate and breaks off a piece of the bone end. This kind of fracture is treated with surgery and internal fixation.

A Type V fixation is a break through the bone shaft, the growth plate, and the end of the bone. Fractures like this result in arrested growth and are usually treated with surgery and internal fixation.

A Type VI fracture is similar to a Type V, but the broken pieces of the bone are missing. This fracture occurs only in the case of an open or comminuted fracture. They require surgical repair and possible reconstructive/corrective surgery.

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Editors: Dr. Nabil Ebraheim, department chairman and professor of orthopaedics, and Dave Kubacki, assistant to the chairman.

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

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