

Benign Bone Tumors

Diagnosis and treatment information

Benign bone tumors are growths or cysts in a bone, but are not cancer. Some tumors come back so need to be watched. Some need long-term care.

This handout briefly describes some of the benign bone tumors and bone cysts that occur in children and adolescents. Benign bone tumors are tumors that are growths or cysts in a bone, but are not cancer.

Simple bone cyst - also known as unicameral bone cyst (UBC)

A UBC is a liquid-filled cyst within the bone. It is most common in children 5 to 15 years old. A UBC is most often found in the long bones in the upper arm (humerus) and upper leg (femur). A UBC is usually not very painful, but may cause the bone to break. Treatment is based on the size and place of the cyst, but can range from observation (periodic checkups to watch for problems) to surgery.

Aneurysmal bone cyst (ABC)

An ABC is similar to a UBC, but an ABC is filled with tissue instead of liquid. An ABC is more likely to cause pain than a UBC. There may be swelling at the site of the cyst. Most times treatment for an ABC is surgery. The surgeon scrapes the cyst out of the bone and fills the hole with bone graft chips. About one in four ABCs will come back after treatment and require another surgery.

Osteochondroma - also known as exostosis

Osteochondroma is extra growth of bone and cartilage on the outside layer of the bone. It grows larger as the child grows. Osteochondromas are most common in children and teens. An osteochondroma can cause a bump on the bone that is usually seen under the skin. If the bump causes pain, it can be removed with surgery. An osteochondroma that is not painful can be watched. Osteochondroma occurs in two types. The more common type is a single bone tumor. The second type is multiple tumors that run in families (multiple hereditary exostosis - described below).

Multiple hereditary exostosis (MHE)

MHE is a genetic condition that results in multiple osteochondromas on one or many bones. Children with MHE need regular exams to check their tumors and their growth. As with single osteochondromas, bumps that cause pain can be removed with surgery. Children with MHE are monitored routinely until they are skeletally mature.

To Learn More

- Orthopedic Clinic Nurse Department
206-987-4179
- Ask your child's healthcare provider
- seattlechildrens.org

Free Interpreter Services

- In the hospital, ask your nurse.
- From outside the hospital, call the toll-free Family Interpreting Line, 1-866-583-1527. Tell the interpreter the name or extension you need.

Non-ossifying fibroma (NOF) - also known as fibrous cortical defect

An NOF is a collection of fibrous tissue within a bone. It often occurs in the ends of bone, most often in the leg bones (femur or tibia). Usually an NOF is painless and is found on an X-ray at the time of an unrelated injury. Sometimes, a large NOF will cause a bone to break. A large NOF may be treated with surgery. The surgeon scrapes the tumor out of the bone and fills the hole with bone graft chips. This is done to help prevent a break through the tumor. A small NOF can be watched with X-rays and may go away on its own without surgery.

Eosinophilic granuloma (EG) - also known as Langerhans cell histiocytosis (LCH)

Eosinophilic granuloma is a collection of cells within a bone called histiocytes. EG occurs most often in children 5 to 10 years old. EG can cause pain, swelling, and tenderness at the site. Treatment may include surgery to scrape out the tumor. Sometimes EG is in a bone that would be hard to treat with surgery, like the spine or skull. In that case, low-dose radiation may be used instead.

EG is one form of a disease known as Langerhans cell histiocytosis (LCH). When it is found only in the bone it is known as EG. LCH can be more widespread and involve other organs (such as skin, liver, and lungs). X-rays and blood tests will be done to see if the disease involves other organs. If it is only found in one area, it is not likely to occur elsewhere later.

Fibrous dysplasia and osteofibrous dysplasia

Fibrous dysplasia is a disease of bone-forming tissue. The bone affected with fibrous dysplasia does not become mature. This leaves the bone weak and may cause it to grow abnormally. Surgery may be needed to stabilize bones at risk for breaking, or to correct a bone that has not grown correctly. Fibrous dysplasia can involve one bone or several bones.

Chondroblastoma

A chondroblastoma is a tumor made of cartilage cells. It often occurs in the end of a long bone, near the knee, shoulder, or hip. It is most common in teenagers. This tumor causes pain and joint problems. Chondroblastomas are treated with surgery. The surgeon scrapes the tumor out of the bone and fills the hole with bone graft chips.

Osteoid osteoma

An osteoid osteoma is a small hole in the bone. The hole is called a nidus and is surrounded by bone that is swollen. The swelling causes dull pain that may be worse at night. The pain often improves with the use of a non-steroidal anti-inflammatory medication, such as ibuprofen, if recommended by your healthcare provider. Osteoid osteoma is most common in teenagers and more common in boys. An osteoid osteoma may go away on its own in several years without any treatment. Sometimes radioablation is used to treat this type of tumor. In this procedure, a CT scan is used to guide a hot needle to kill the cells in the tumor. An osteoid osteoma that is very painful or doesn't go away can be removed with surgery.

Enchondroma

Enchondroma is a tumor of cartilage that often occurs in the small bones of the hands and feet. It is most common in young adults. Most enchondromas are small and do not cause pain. A painful enchondroma may be removed with surgery.

Can a benign tumor come back?

Yes. Any of these benign tumors may come back (or “recur”) after treatment. Your child’s doctor may suggest X-rays to watch for a recurrence of the tumor. Some tumors need multiple treatments and long-term care.