

# Bone-chilling but curable

Osteosarcomas, though rare, strike mostly kids & at first may be mistaken for a sports-related injury

► **The specialist:** Dr. James Wittig, chief of orthopedic oncology and associate professor of orthopedic surgery at The Mount Sinai Medical Center

As an orthopedic oncologist and sarcoma surgeon, Dr. James Wittig performs 350 surgeries a year on both children and adults, specializing in limb-sparing surgery for shoulder tumors.

► **Who's at risk:**

Osteosarcoma is a malignant tumor that starts in the bone and often spreads to the lungs if it goes untreated. "The most common places osteosarcoma occurs are in the bones around the knee — the lower end of the femur and the upper part of the tibia — and the shoulder girdle area," says Wittig.

Osteosarcoma is quite rare, but it's a good thing for parents to know about because it almost exclusively strikes children and adolescents. In the U.S. each year, there are about 600 cases of osteosarcoma, which accounts for less than 1% of all types of cancers.

Typically, osteosarcomas affect children and adolescents between 10 and 20 years of age. "It arises during the growth phases, or growth spurts, of children and develops close to the growth plates," says Wittig. "There's rapid turnover of the cells as the bone is growing, and everybody thinks that growth is related to osteosarcoma." In the vast majority of cases, osteosarcoma occurs sporadically; only in very rare cases is there a genetic link.

Boys are at significantly higher risk of developing osteosarcomas than girls are; three boys will develop the cancer for every two girls. "People propose that this is because boys grow for a longer period of time than girls do," says Wittig. On average, girls are usually done growing by the time they are 15½, while boys continue growing until they are 16½.

► **Signs and symptoms:**

Osteosarcoma usually presents itself with pain and swelling, in and around the knee and shoulder girdle. "It's often misdiagnosed as a sports-related injury," says Wittig. "Because it often causes night pain, it can be misconstrued as growing pains."

► **What I can do:**

■ **Spot it early**

Early detection is the only thing you can do in terms of prevention. "If your son or daughter has persistent pain or swelling in an extremity, don't wait," says Wittig, "get to the doctor."

■ **Get information**

More information is available at the National Cancer Institute ([www.cancer.gov](http://www.cancer.gov)) and the children's oncology group ([www.childrensoncologygroup.org](http://www.childrensoncologygroup.org)). Wittig also has a Web site, [www.sarcoma.ws](http://www.sarcoma.ws), which has videos, educational information and a children's corner.

■ **Focus on nutrition**

Kids often lose a lot of weight during chemo, which can cause nausea that makes kids not want to eat. "So it's important to eat healthy and consume as many calories as you can during chemo to counteract the other times when it's hard to eat," says Wittig.



Mount Sinai's Dr. James Wittig holds a shoulder prosthesis used for bone cancer patients.

Because these symptoms are so commonly caused by other things, kids and parents usually don't have any suspicion that something more serious is going on.

"Parents think their kid injured themselves playing baseball or basketball, or just bumped their knee," says Wittig. "People often think it's a big bruise or that they've torn a muscle."

Usually the tumor grows for a few weeks to a couple of months without presenting any symptoms. It doesn't start causing discomfort until it's big enough.

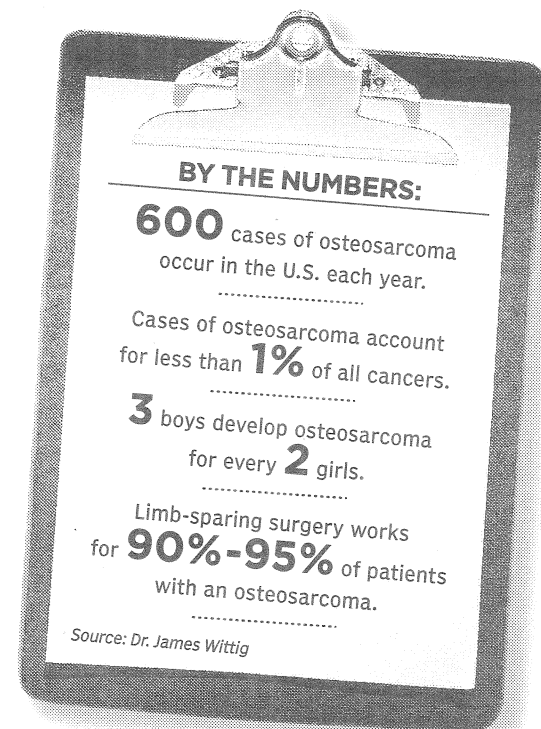
Even then, after the symptoms start, it usually takes about three months for kids to get diagnosed. "It takes a while for parents to say, hey, this isn't getting any better, and take them to a doctor," says Wittig.

So how can parents tell the difference between an osteosarcoma and a garden variety sports injury? With an osteosarcoma, the swelling gets more severe over time, and the pain does not go away, explains Wittig.

► **Traditional treatment:**

Diagnosis is a pretty straightforward process of X-rays confirmed by biopsies. The doctor then conducts a battery of tests to see how much the cancer has grown or spread, including an MRI (which shows how big the tumor is), a whole-body bone scan (which shows if it has spread to other bones) and a CAT scan of the chest (which shows if it has spread to the lungs).

Once a child is diagnosed, doctors call for a national treatment protocol that combines chemotherapy and



surgery. For the first two to three months, the child receives preoperative chemo to kill the tumor and any microscopic cancer cells that have spread. Then doctors perform surgery to remove the tumor; in 90%-95% of cases, people can be treated with a limb-sparing surgery, not an amputation. Surgery is followed with a second round of chemo for five to seven months.

Usually, the recuperation period moves fairly slowly until the chemo ends. Then physical therapy can move more rapidly, and kids build their strength faster. If kids respond well to chemo, there's a 90% five-year cure rate. "Nowadays, the majority of patients respond well to the chemo," says Wittig.

If kids don't respond well to chemo, they undergo physical therapy to get their strength back and then are monitored closely through CAT scans and bone scans to watch for any sign that the cancer is recurring. "The highest risk of the tumor coming back is in the first two years, so they're watched very closely during that time," says Wittig. "Then they're monitored for the rest of their life, first once every six months, then once every year."

► **Questions for your doctor:**

Wittig advises patients to start with a straightforward first question, "What is an osteosarcoma?" The second question is, "What kind of doctor treats this type of tumor?" Since osteosarcomas are quite rare, many doctors have never encountered it before. You want to be sure your child receives treatment from someone very familiar with the disease. "You want to be referred to a specialist: a sarcoma surgeon or orthopedic oncologist," says Wittig.

A related question is: "Who should perform the biopsy of the tumor?" The biopsy should be done by an orthopedic oncologist, of which there are only about 100 in the country. Your pediatrician or family doctor should be able to give you a referral.

The question that every parent is afraid to ask is, "Does the extremity need to be amputated?" Fortunately, in the overwhelming majority of cases, the answer is no. "Limb-sparing surgery works for 90%-95% of patients with an osteosarcoma," Wittig reminds his patients. "This is a highly curable cancer and most kids are back to leading a normal life afterward." ♦