

# Ewing Sarcoma: Introduction



## What is cancer?

Cancer starts when cells in the body change (mutate) and grow out of control. Your body is made up of tiny building blocks called cells. Normal cells grow when your body needs them and die when your body does not need them any longer.

Cancer is made up of abnormal cells that grow even though your body doesn't need them. In most cancers, the abnormal cells grow to form a lump or mass called a tumor. If cancer cells are in the body long enough, they can grow into (invade) nearby areas. They can even spread to other parts of the body (metastasize).

## What is Ewing sarcoma?

Ewing sarcoma is a cancer that tends to start in the bone. It's named after James Ewing, MD. He first described this sarcoma in 1921. He noticed that the cells of what came to be called Ewing sarcoma looked different under the microscope than the cells of other kinds of bone tumors. Dr. Ewing also found that this type of tumor was more likely to respond to radiation therapy than other bone cancers.

Experts later found this same type of tumor in soft tissues. They called it extraosseous Ewing tumor. (Extraosseous means outside of the bone.) Another very rare childhood cancer that's a lot like these sarcomas is called peripheral primitive neuroectodermal tumor. It can start in the bone or soft tissues.

These tumors are now all referred to as the **Ewing family of tumors**, Ewing tumors, or Ewing sarcomas. They are all treated in similar ways.

Studies of Ewing tumors have found that they tend to have the same kinds of changes in the chromosomes or DNA inside the tumor cells. These changes are only found in the tumor cells. They're not genetic changes that are passed on in families. This means that a parent's genes did not cause their child to get cancer. Experts don't know why these gene changes happen.

## How Ewing sarcoma starts and grows

Most Ewing sarcomas start in the bones. The most common places for them to start include the:

- Bones in the chest wall, like the ribs or shoulder blades
- Hip bones (pelvis)
- Leg bones (mostly in the middle of the long bones)

These tumors can start in other bones, too. Extraosseous Ewing tumors can start almost anywhere in the body. They most often start in the pelvis, spine, chest wall, thigh, or foot.

Ewing sarcomas can grow into nearby tissues. These include muscles or tendons. The cancer cells can also spread to other parts of the body. This can often happen quickly. In fact, even if it looks like the cancer is still only where it started based on imaging tests, healthcare providers assume that some cancer cells may have reached other parts of the body. This is why chemotherapy is an important part of treatment for Ewing sarcomas. (Chemotherapy travels through the blood and can reach most parts of the body.)

## Talk with your healthcare provider

If you have questions about Ewing sarcoma, talk with your healthcare provider. They can help you understand more about this cancer.

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