



Understanding How Cancer Spreads

Cancer that has spread from one part of the body to another is called metastasis. Metastasis can invade major organs, such as the brain, grow so large that it disrupts the body's normal processes, and press against vital structures like blood vessels or nerves. The result can be irreversible damage or even death.

How cancer moves through the body

Cancer occurs when cells become abnormal and multiply uncontrollably. These abnormal cells form a primary tumor. Metastasis occurs when cells break away from the primary tumor and enter the bloodstream or the lymphatic system, which produces, stores, and moves infection-fighting cells throughout the body. The bloodstream or the lymphatic system carries these malignant cells to other parts of the body, where they can become embedded in different tissues. Under the right circumstances, these embedded cells will divide, multiply, and develop into a new tumor.

This new tumor is called a metastatic tumor. A metastatic tumor is made up of the same type of cells as the primary tumor. If, for example, colon cancer spreads to the brain, the resulting metastatic tumor in the brain is made up of colon cancer cells, not brain cancer cells. The metastasis is not brain cancer; it is metastatic colon cancer.

Common sites of metastasis

Although cancer can spread to almost any part of the body, the lungs, bones, brain, liver, and lymph nodes are the most common sites of metastasis. Certain cancers tend to invade one or two areas in particular. For example, prostate cancer commonly spreads to the bones. Colon cancer, on the other

Metastasis (meh-TAS-tuh-sis)

1. The spread of cancer from one part of the body to another.
2. A secondary tumor formed by cells that have broken away from a primary tumor.

The plural form of metastasis is metastases (meh-TAS-tuh-sees). Cancer that has metastasized is called metastatic (meh-tuh-STAT-ic) cancer.

hand, tends to spread to the liver.

Often, cancer spreads to the lymph nodes, which are small pockets in the lymphatic system that filter viruses and bacteria out of the body. The spread of cancer to lymph nodes near the primary tumor is known as regional metastasis. The spread of cancer to a part of the body far away from the primary tumor is known as distant metastasis. Usually, regional metastasis can be treated more effectively than distant metastasis. Cancer can spread to multiple sites in a single patient.

Occasionally, metastatic cancer is discovered before the primary cancer is found. Lab tests, imaging, and other methods will identify the type of primary tumor in most cases. When the primary cancer remains unknown, the patient is said to have a cancer of unknown primary origin. However, even if the primary cancer is unknown, the metastatic cancer may still be treatable.

Symptoms of metastasis

The symptoms caused by metastatic cancer depend on the size and location of the metastasis. For example, metastasis to the brain may cause headaches, dizziness, or seizures, while metastasis to the lungs may cause shortness of breath. Not all people with metastatic cancer have symptoms; in these cases, metasta-

sis is usually discovered with x-rays or other tests.

Treatment of metastasis

The treatments available for metastasis depend on the type of primary cancer, the size and location of the metastasis, the number of sites of metastasis, the patient's age and health, and the types of treatments the patient has already received. Treatment options may include one or more of the following:

- Surgery
- Chemotherapy (drugs that kill cancer cells)
- Radiation therapy (beams of energy that kill cancer cells and shrink tumors)
- Biological therapy (vaccines, antibodies, and other agents that enhance or restore the immune system's ability to fight cancer)
- Hormone therapy (medications that interfere with the activity of or stop the production of hormones that stimulate cancer growth)
- Cryosurgery (surgery in which tissue is frozen to destroy abnormal cells)

The best way to prevent metastasis is to detect and treat the primary tumor early, while it is still small. ●

Sources: *The National Cancer Institute and the American Cancer Society*

For more information, talk to your physician, or:

- call askMDAnderson at 1-877-632-6789
- visit www.mdanderson.org
- visit the National Cancer Institute online at www.cancer.gov or the American Cancer Society at www.cancer.org.

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J. Munch

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