

How does cancer spread video transcript:

In this video, you will learn how cancer spreads through a process known as “metastasis.”

By the end of this lesson, you will understand a bit more about how cancer spreads and what this means for diagnosis and treatment.

Cancer Metastasis

Let's start by defining the term “metastasis.” Metastasis refers to the process where cancer cells break away from the primary tumor and travel to other parts of the body, where they can form secondary tumors. Primary tumours can be treated using localized therapy, such as surgery or radiation.

Importance of Cancer Metastasis

Metastasis occurs during the later stages of cancer and is more challenging to treat and control compared to cancers that are detected earlier. Depending on the amount of spreading that occurs, metastatic cancer can require systemic treatment. Molecular pathology techniques like liquid biopsy can be used to detect metastatic tumours at early stages.

Process of cancer metastasis:

Cancer typically starts as a single abnormal cell. If this cancer cell goes on to divide and grow, it can develop into a mass called the primary tumour.

Starting from the primary tumour, let's now learn about the steps in cancer metastasis.

First is **Local Invasion**. Cancer cells within the primary tumor can invade nearby tissues and blood vessels. They do this by breaking down the surrounding tissue barriers.

Next, we have **Intravasation**. Once cancer cells invade nearby tissues, they may enter the bloodstream or lymphatic system. This is a critical step in the metastatic process, as it allows cancer cells to travel to distant parts of the body.

Then, **Circulation**. Cancer cells in the bloodstream or lymphatic system can be carried to other organs and tissues throughout the body. They can travel long distances, and some may remain dormant for a while before establishing new tumors.

Extravasation occurs when cancer cells exit the bloodstream or lymphatic system and invade a new tissue or organ. They may encounter favorable conditions that allow them to grow and form secondary tumors. Common sites include the lungs, liver, bones, and brain. Understanding these patterns is crucial for diagnosis and treatment planning.

We then have **Angiogenesis**. This involves the development of new blood vessels, providing the necessary nutrients for the growth and survival of metastatic tumors.

Cancer cells that have exited the circulatory system and adapted to a new environment can form secondary tumors as well. These secondary tumors are often located far from the primary tumor in organs that are difficult to treat.

In summary:

Metastasis is the process of cancer spreading that occurs in advanced tumours. Understanding the molecular features of metastatic cancer can help healthcare professionals develop a personalized treatment approach and better help the patient.

As seen in this video, once cancer spreads, it can be difficult to locate and treat effectively. Therefore, it is important for everyone to talk to their doctor about their cancer risk and to find out if they would benefit from regular cancer screenings.

If you enjoyed this video and would like to know more about cancer staging, follow to the next video!