

## **Pancreatic Cancer - Latest Research** [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 11/2014

**ON THIS PAGE:** You will read about the scientific research being done now to learn more about this type of cancer and how to treat it. To see other pages, use the menu on the side of your screen.

Doctors are working to learn more about pancreatic cancer, ways to prevent it, how to best treat it, and how to provide the best care to people diagnosed with this disease. The following areas of research may include new options for patients through [clinical trials](#) [3]. Always talk with your doctor about the diagnostic and treatment options best for you.

**Early detection.** The best chance of successful treatment is when pancreatic cancer is found early. This is why ongoing research is focused on finding and using special blood tests, diagnostic imaging tools, and other approaches to find pancreatic cancer at its earliest stages before it spreads. This includes finding it at precancerous stages, known as pancreatic intraepithelial neoplasia, or PanIN lesions. These screening approaches are typically being used for people who have a high risk for pancreatic cancer, such as those with a strong family history or a known genetic condition that increases the risk of pancreatic cancer. It is not yet known if these screening tools could be used effectively for the general population.

**Genetic/molecular studies.** In cancer, damaged or abnormal genes cause uncontrolled cell growth. Many new research developments are based on identifying damaged genes and proteins, and repairing them or changing how they work.

Pancreatic tumor samples can be analyzed using a variety of molecular techniques, such as DNA sequencing and mutational analysis, to look for genetic changes.

This information can then be used to develop new drugs that target these changes (see Targeted therapy below), as well as potentially to screen for pancreatic cancer in people who have a high risk of the disease. At this point, these tools are only being used in clinical trials.

**Immunotherapy.** Immunotherapy is designed to boost the body's natural defenses to fight cancer. It uses materials either made by the body or in a laboratory to improve, target, or restore immune system function. One example of immunotherapy is a [cancer vaccine](#) [4], which stimulates a person's immune system to recognize and attack cancer cells. A number of clinical trials have been done or are underway to study vaccines in a variety of types of cancer, including

pancreatic cancer. Depending on the circumstances, vaccines may be given either after, during, or instead of chemotherapy. Learn more about [immunotherapy](#) [5].

**Targeted therapy.** As discussed in the [Treatment Options](#) [6] section, erlotinib is the only targeted therapy currently approved for pancreatic cancer, in combination with gemcitabine. Other drugs that may help block tumor growth and spread are being studied for pancreatic cancer, both as single drugs and as part of combination therapy. However, no other targeted therapies, including bevacizumab (Avastin) and cetuximab (Erbix), have been shown to lengthen the lives of patients with pancreatic cancer. A gene called *Ras* is often mutated in pancreatic cancer, and drugs that target how this mutation contributes to cancer growth are being studied, either alone or in combination with other types of targeted therapy or chemotherapy. Another gene mutation linked to pancreatic cancer growth, called *Jak/Stat* can also be blocked by certain targeted therapies, and is currently being researched in several clinical trials. Researchers are also studying drugs that can break down the stroma, which is the fibrous-like connective tissue that surrounds cancer cells and is involved in maintaining the cancer. By disrupting the tumor-associated stroma, these drugs may allow chemotherapy to reach and destroy cancer cells more effectively. Learn more about [targeted therapy](#) [7].

**Gene therapy.** Gene therapy is the delivery of specific genes to cancer cells, which are often carried by specially designed viruses. These include normal genes that are delivered into the center of cancer cells; as the cancer cells divide, the working genes that were inserted in the cell replace the abnormal genes that contribute to cancer growth.

**Chemotherapy.** Several drugs have shown promise for advanced pancreatic cancer. Liposome-encapsulated irinotecan, also called MM-398, showed positive results in a large clinical trial when combined with 5-fluorouracil and leucovorin, compared with 5-FU and leucovorin alone, for patients with pancreatic cancer that had worsened while receiving gemcitabine-based chemotherapy. This drug is currently under review at the FDA. Another drug, TH-302, works when oxygen is low (called hypoxia), and is being evaluated in combination with gemcitabine in as a first-line treatment. A third drug called tegafur-gimeracil-oteracil potassium (TS-1) works similarly to capecitabine; it is already commonly used in other parts of the world, such as Asia, but is not currently approved in the United States.

**Cancer stem cells.** Pancreatic cancer stem cells are cells in the tumor that may be particularly resistant to standard therapies. Research is currently focused on identifying treatments that may specifically target those cancer stem cells.

**Supportive care.** Clinical trials are underway to find better ways of reducing symptoms and side effects of current pancreatic cancer treatments in order to improve patients' comfort and quality of life.

## Looking for More About the Latest Research?

If you would like additional information about the latest areas of research regarding pancreatic cancer, explore these related items that take you outside of this guide:

- To find clinical trials specific to your diagnosis, talk with your doctor or [search online clinical trial databases now](#) [8].

- Review research announced at the [Gastrointestinal Cancers Symposia](#) [9] or in [ASCO's peer-reviewed journals](#) [10].
- Visit ASCO's [CancerProgress.Net](#) [11] website to learn more about the historical pace of research for pancreatic cancer. Please note this link takes you to a separate ASCO website.

*The next section addresses how to cope with the symptoms of the disease or the side effects of its treatment. Use the menu on the side of your screen to select Coping with Side Effects, or you can select another section, to continue reading this guide.*

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**Links:**

[1] <http://www.cancer.net/cancer-types/pancreatic-cancer/latest-research>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/19503>

[4] <http://www.cancer.net/node/24721>

[5] <http://www.cancer.net/node/24726>

[6] <http://www.cancer.net/node/19502>

[7] <http://www.cancer.net/node/24729>

[8] <http://www.cancer.net/node/24878>

[9] [http://www.cancer.net/research-and-advocacy/research-summaries?field\\_page\\_topic\\_tid\\_2=486&field\\_page\\_topic\\_tid=285&date\\_filter%5bvalue%5d%5byear%5d=](http://www.cancer.net/research-and-advocacy/research-summaries?field_page_topic_tid_2=486&field_page_topic_tid=285&date_filter%5bvalue%5d%5byear%5d=)

[10] [http://www.cancer.net/research-and-advocacy/research-summaries?field\\_page\\_topic\\_tid\\_2=476&field\\_page\\_topic\\_tid=285&date\\_filter%5bvalue%5d%5byear%5d=](http://www.cancer.net/research-and-advocacy/research-summaries?field_page_topic_tid_2=476&field_page_topic_tid=285&date_filter%5bvalue%5d%5byear%5d=)

[11] <http://www.cancerprogress.net/timeline/pancreatic>