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# **Pancreatic Cancer**

## What is Pancreatic Cancer?

Pancreatic cancer most often starts in the cells of the pancreatic duct. Most pancreatic cancers are the exocrine type. This means that they start in cells that produce pancreatic digestive juices. Adenocarcinomas of the pancreas accounts for 95% of pancreatic cancers. Endocrine tumours are uncommon, usually starting in the endocrine pancreas, where insulin and other hormones are made and released directly into the bloodstream. They are also called pancreatic neuroendocrine tumours (PNETS) or islet cell tumours. Approximately 5,500 Canadians are diagnosed with pancreatic cancer each year. The prognosis following a pancreatic cancer diagnosis is poor, with a mean survival of 3.9 months following diagnosis. 6.9% of patients diagnosed with pancreatic cancer survive 5 years following diagnosis.

## What are the Other Types of Pancreatic Cancer?

There are rare types of pancreatic cancers including:

* Cystic tumours
* Acinar cell carcinomas
* Solid pseudopapillary neoplasm
* Adenosquamous carcinomas
* Cystadenocarcinomas
* Pleomorphic adenocarcinomas
* Microadenocarcinomas
* [Pancreatoblastoma](https://www.google.ca/search?biw=1366&bih=637&q=%E2%80%A2%09Pancreatoblastoma+of+pancreas&spell=1&sa=X&ved=0ahUKEwiK5vn0w6HbAhVh7YMKHW5kDoMQkeECCCYoAA)
* Lymphoma
* Oncocytic carcinoma
* Sarcomas

## What are the Risk Factors Causing Pancreatic Cancer?

Several risk factors for pancreatic cancer have been identified. Pancreatic cancer can develop in patients without any risk factors, but known risk factors include:

* Tobacco use
* Obesity
* Diabetes diagnosis
* Family history of pancreatic cancer
* Genetic disorders including:
	+ Hereditary breast and ovarian cancer syndrome
	+ Familial atypical multiple mole melanoma
	+ Peutz-Jeghers syndrome
	+ Lynch syndrome
	+ Hereditary pancreatitis
	+ Multiple endocrine neoplasia type 1
	+ von Hippel-Lindau syndrome
* Chronic pancreatitis
* Eating red meat

## What are the Clinical Manifestations?

In the early stages of pancreatic cancer, there may be no symptoms. As the tumour increases in size, symptoms often become apparent. Some common signs or symptoms of pancreatic cancer include:

* Jaundice
* Upper abdominal and/or upper back pain
* Steatorrhea-stool that is light coloured, bulky, and floats
* Sudden weight loss
* Loss of appetite
* Fatigue
* Nausea and vomiting
* Indigestion
* Feeling full when consuming only a small amount of food
* Bloating, gas
* Diarrhea or constipation
* Itching
* Dark urine
* Fever and shivering
* Leg edema

## What are the Treatment Options?

Each case is unique and requires a personalized medical treatment plan. The main types of treatment for soft tissue sarcoma include:

* Surgery:removal of the abnormal cancerous tissue and surrounding tissue. Surgical procedures include: Pancreaticoduodenectomy (Whipple Procedure), with/without sparing of the pylorus, total pancreatectomy or distal pancreatectomy.
* Chemotherapy: systemic treatment to kill cancer cells and prevent them from dividing. Antineoplastic agents and combinations of agents used in managing pancreatic carcinoma include: Gemcitabine monotherapy, GTX regimen (gemcitabine, docetaxel and capecitabine), Gemcitabine and albumin-bound paclitaxel, FOLFIRINOX, 5-FU, Erlotinib plus gemcitabine, Capecitabine monotherapy or capecitabine plus erlotinib.
* Neoadjuvant therapy: the use ofchemotherapy and/or radiation therapy in the neoadjuvant still remains a source of controversy.
* Palliative Therapy: may be administered for the following conditions associated with pancreatic cancer:
	+ a) Pain: Pain relief is crucial for patients not undergoing resection for pancreatic cancer; narcotic analgesics should be used early and in adequate dosages;
	+ b) Jaundice: Obstructive jaundice warrants palliation if the patient has pruritus or right upper quadrant pain or has developed cholangitis
	+ c) Duodenal obstruction secondary to pancreatic carcinoma: Can be palliated operatively with a gastrojejunostomy or an endoscopic procedure

## What are the Possible Side Effects of Treatment?

1) Surgery:

* Pain
* Infection
* Bleeding
* Delayed gastric emptying
* Leaking of bile, stomach acid or pancreatic juices
* Dumping syndrome
* Nutrition dysfunction
* Diabetes

2) Chemotherapy:

* Fatigue
* Skin irritation
* Limb swelling
* Pain
* Weakened muscles and decreased range of motion in the extremity treated
* Bone fracture(s)
* Nausea/vomiting
* Lymphedema

3)Radiation Therapy:

* Nausea and vomiting
* Loss of appetite (including decreased appetite, decreased fat absorption, bloating, diarrhea, indigestion)
* Diarrhea
* Fatigue
* Skin problems

## What is the Role of Physiotherapy and Rehab?

The goals of rehabilitation depend on the extent of the disease and the treatment that a patient has received. Physiotherapy can help manage the side effects of treatment, maintain overall functioning, and improve quality of life. This can be done using a variety of treatment approaches. There is very little research currently available regarding the best practice for rehabilitation during pancreatic cancer treatment. Approaches that may be used:

* Use of thermal modalities, electrical modalities (transcutaneous electrical nerve stimulation), and therapeutic massage are possible tools for pain control in patients undergoing palliative care.
* Education on modifying activities of daily living, return to activity.
* Fatigue management through education on energy conservation techniques and physical activity.

Physical activity:

* Exercise is safe during cancer treatment, and can improve both fatigue, quality of life, physical functioning, sleep quality, and psychological distress.
* Exercise also improves bone and muscle health, which are negatively affected by cancer treatments
* Returning to physical activity as quickly as able following diagnosis/treatment is recommended
* 150 minutes of moderate activity or 75 minus of vigorous activity a week is recommended, including resistance training a minimum of 2 days a week
* Support for maintaining physical activity level should be provided, scubas in the form of a supervised exercise program

## References & Resources

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