



**NeuroEndocrine
Cancer** Australia

Symptoms and signs

Clinical presentation

NETs are often small and slow-growing. Depending on where they are in the body, they can produce a variety of symptoms or in some cases no symptoms.

The symptoms can be vague (e.g. extreme tiredness) or similar to those of conditions such as irritable bowel syndrome, Crohn disease, peptic ulcer disease, other stomach/digestive disorders, asthma and facial flushing similar to that associated with menopause.

Most doctors are unfamiliar with NETs. They are therefore unlikely to suspect a NET when they first see a patient with NET.

Quick guide to symptoms of GEP-NETs and bronchial NETs

Intestinal NETs	Watery diarrhoea Cramping, intermittent abdominal pain Flushing; asthma-like wheezing Bowel obstruction
Pancreatic NETs	Epigastric or back pain Peptic ulcer disease Diarrhoea Intermittent hypoglycemic episodes (low blood sugars) Diabetes Rash
Bronchial NETs	Wheezing Cough Bloody sputum Recurrent chest infections/pneumonia

Carcinoid syndrome

When GEP-NETs spread (metastasise), the most common site for secondary tumours to grow is in the liver. They can also spread to the bones, the lungs and the lymphatic system.

Many GEP-NETs have an associated syndrome (a collection of symptoms related to a disease or disorder). The most common is carcinoid syndrome, which can occur in up to one in three patients. It is caused when an excess of hormones such as serotonin is produced due to the NETs.

The symptoms of carcinoid syndrome vary between people with NETs.

Typical symptoms include:

- **Flushing:** usually a red/purple flush of the face, neck and upper chest, which may be related to triggers such as alcohol, certain foods, exercise and emotions.
- **Diarrhoea:** usually presents as watery diarrhoea occurring without warning, which includes night-time episodes. It usually does not respond to anti-diarrhoea medications or other treatments prescribed for irritable bowel syndrome.
Fact sheet download: <https://neuroendocrine.org.au/fact-sheets/>
Wallet card download: <https://neuroendocrine.org.au/patient-resources/>
- **Wheezing:** affects about one in five patients with carcinoid syndrome and may be associated with facial flushing. Unlike asthma, wheezing of carcinoid syndrome may not be triggered by colds/flu, exercise, allergens or cold air.
- **Abdominal pain:** often colicky (intermittent) and cramping. It is often not relieved by going to the toilet.
- **Carcinoid heart disease:** up to one in five NET patients have carcinoid heart disease at diagnosis. The right side of the heart is more likely to be affected, with leaking of the tricuspid and pulmonary valves causing shortness of breath and swelling (oedema) of the legs.
- **Fatigue.**
- **Skin changes:** a small number of patients have skin changes such as telangiectasia (red/purple spots of face, neck and chest).
- Some patients with NETs develop a condition known as pellagra (niacin deficiency), which presents as a rash, dark pigmentation on skin, swollen mouth and bright red tongue, vomiting and diarrhoea, headache, fatigue, depression, disorientation or confusion, memory loss.

Not everyone with NETs will have carcinoid syndrome, even if their disease has spread.

Carcinoid crisis

Sometimes people with NETs have a particularly bad episode of carcinoid syndrome triggered by stress, general anaesthetic or certain treatments. This is called ‘carcinoid crisis’.

Symptoms include intense flushing, diarrhoea, abdominal pain, wheezing, palpitations, low or high blood pressure, altered mental state and, in extreme cases, coma.

Your NET specialist will ensure you are monitored during a procedures (including dental work and anaesthetics), in which you may be susceptible to these symptoms and may give you medication to prevent such a crisis occurring (e.g. an infusion of a somatostatin (octreotide) analogue).

A wallet sized card is available on Neuroendocrine Cancer Australia website for patients to carry to alert health professionals to Carcinoid Crisis and management of this. Download here: <https://neuroendocrine.org.au/patient-resources/>

Carcinoid heart disease

Some NETs secrete the hormone serotonin. This can affect the heart by causing thick ‘plaques’ within the heart muscle. The valves on the right side of the heart are also affected and may become ‘leaky’, causing symptoms such as breathlessness, fatigue, enlarged liver and swollen ankles.

Up to one in five patients with carcinoid syndrome have carcinoid heart disease and may eventually develop heart failure. Whilst carcinoid heart disease cannot be reversed, treatment can prevent further deterioration. This usually consists of treatments to decrease hormone production (SSAs, liver-directed therapy, or even debulking surgery). Patients may be referred to see a cardiologist and there may be medications to help preserve heart function. Ultimately, some patients with carcinoid heart disease may be advised to have heart surgery to replace the leaking valves.

As the above treatments are more effective in treating early carcinoid heart disease, and valve damage is irreversible, echocardiography should be considered regularly in NET patients, particularly those with functional NET or known carcinoid heart disease.



**NeuroEndocrine
Cancer** Australia