



**Name of Journal:** *World Journal of Gastrointestinal Oncology*  
**Manuscript NO:** 53879  
**Manuscript Type:** REVIEW

**Pancreatic neuroendocrine tumors G3 and pancreatic neuroendocrine carcinomas: differences in basic biology and treatment**

Zhang MY *et al.* Difference in pNET G3 and pNEC

Ming-Yi Zhang, Du He, Shuang Zhang

In 2017 the World Health Organization revised the criteria for classification of pancreatic neuroendocrine neoplasms (pNENs) after a consensus conference at the International Agency for Research on Cancer. The major change in the new classification was to subclassify the original G3 group into well-differentiated pancreatic neuroendocrine tumors G3 (pNETs G3) and poorly differentiated pancreatic neuroendocrine carcinomas (pNECs), which have been gradually proven to be completely different in biological behavior and clinical manifestations in recent years. In 2019 this major change subsequently extended to NENs involving the entire digestive tract. The updated version of the pNENs grading system marks a growing awareness of these heterogeneous tumors. This review discusses the clinicopathological, genetic and therapeutic features of poorly differentiated pNECs and compare them to those of well-differentiated pNETs G3. For pNETs G3 and

Match Overview		
1	Internet 84 words crawled on 06-Apr-2020 <a href="http://theoncologist.onlinelibrary.wiley.com">theoncologist.onlinelibrary.wiley.com</a>	2%
2	Internet 66 words crawled on 12-Feb-2018 <a href="http://www.pathologyoutlines.com">www.pathologyoutlines.com</a>	1%
3	Internet 50 words crawled on 16-Sep-2019 <a href="http://scite.ai">scite.ai</a>	1%
4	Crossref 37 words <a href="#">Tetsuhide Ito, Hisato Igarashi, Kazuhiko Nakamura, Hironobu Sasano et al. "Epidemiological trends of pancreatic a</a>	1%
5	Internet 34 words crawled on 22-Apr-2020 <a href="http://www.wjgnet.com">www.wjgnet.com</a>	1%
6	Internet 33 words crawled on 13-Mar-2020 <a href="http://bmccancer.biomedcentral.com">bmccancer.biomedcentral.com</a>	1%
7	Internet 32 words crawled on 27-Aug-2019 <a href="http://www.nature.com">www.nature.com</a>	1%
8	Internet 32 words crawled on 12-Aug-2016 <a href="http://f1000.com">f1000.com</a>	1%





17,000 Results Any time

### Pancreatic neuroendocrine tumors: biology, diagnosis, and ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3845620>

Nov 28, 2012 · **Neuroendocrine tumors** are neoplasms that exhibit **neuroendocrine** phenotypes such as the production of **neuropeptides**, large dense-core secretory vesicles, and a lack of neural structures ... **Pancreatic neuroendocrine tumors** (PNETs), a group of **endocrine tumors** arising in the **pancreas**, are among the most common **neuroendocrine tumors** (NETs). Functioning PNETs include insulinoma, ...

**Cited by:** 56 **Author:** Cynthia Ro, Wanxing Chai, Victoria E. Yu, R...  
**Publish Year:** 2013

### The Diagnosis and Treatment of Pancreatic NEN-G3-A Focus ...

<https://pancreas.imedpub.com/the-diagnosis-and...>

However, the category of **pancreatic NEC** (panNEC; equivalent to NEN-G3) has been shown by multiple studies to include two clinically and genetically different types of **tumors**, and the WHO 2017 classification of **tumors** of endocrine organs divided panNEC into **neuroendocrine tumor** (NET)-G3 and **neuroendocrine carcinoma** (NEC)-G3.

**Author:** Susumu Hijioka, Waki Hosoda, Chigusa ... **Publish Year:** 2018

### Treatment Options for Pancreatic Neuroendocrine Tumors

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6628351>

Jun 14, 2019 · **Neuroendocrine tumors** can arise from a variety of different organs, including the endocrine tissue of the **pancreas** leading to **pancreatic neuroendocrine tumors** (PanNETs). While PanNETs are rare overall, with an annual incidence of less than 1 case per 100,000 individuals, these **tumors** are increasingly more common in the world [ 1 ].

**Cited by:** 1 **Author:** Amit Akirov, Vincent Larouche, Sameerah A...  
**Publish Year:** 2019

### Pancreatic neuroendocrine tumors: Clinical features ...

<https://www.sciencedirect.com/science/article/pii/S1521691813000292>

Introduction. **Pancreatic neuroendocrine tumors** (pNETs) are **neuroendocrine tumors** (NETs) that are found primarily in the **pancreas** and upper small intestine and are frequently also referred to as **pancreatic endocrine tumors** (PETs) , »[2].Although diverse in clinical presentation and aspects of **treatment**, all of the subtypes of pNETs share many common features including their pathology, most ...

**Cited by:** 157 **Author:** Tetsuhide Ito, Tetsuhide Ito, Hisato Igarashi...  
**Publish Year:** 2012

### Current Management of Pancreatic Neuroendocrine Tumors ...

<https://www.hindawi.com/journals/grp/2018/9647247>

Indeed, the diagnosis of **pancreatic neuroendocrine tumors** (PanNETs) has increased fourfold to sevenfold [1]. Furthermore, the size of these lesions at diagnosis has considerably **decreased** [2, 3], and the detection of **tumors** < 2 cm ranges from 26% to 61% [4, 5].

**Cited by:** 5 **Author:** Ilenia Bartolini, Lapo Bencini, Matteo Risalit...  
**Publish Year:** 2018

### Molecular subtyping in pancreatic neuroendocrine neoplasms ...

<https://www.sciencedirect.com/science/article/pii/S0304419X20300135>

Apr 25, 2020 · However, 23.1% of patients with curative resection of **pancreatic neuroendocrine tumors** (PanNETs) had recurrence at a mean follow-up time of 8.1 years. Highly malignant **pancreatic neuroendocrine carcinoma** (PanNEC) patients rarely survive more than one year [11,12].

### Pancreatic Neuroendocrine Tumors (Islet Cell Tumors ...

<https://www.cancer.gov/types/pancreatic/patient/pnet-treatment-pdq>

**Pancreatic neuroendocrine tumors** (NETs) may be benign (not cancer) or malignant (cancer). When **pancreatic NETs** are malignant, they are called **pancreatic endocrine cancer** or **islet cell carcinoma**. **Pancreatic NETs** are much less common than **pancreatic exocrine tumors** and have a better prognosis.

### Chemotherapy for Pancreatic Neuroendocrine Tumor

<https://www.cancer.org/cancer/pancreatic...>

**Chemotherapy for Pancreatic Neuroendocrine Tumor.** **Chemotherapy** (chemo) uses **anti-cancer drugs** injected into a vein or taken by mouth to **kill cancer cells**. These drugs enter the bloodstream and reach almost all areas of the body, making this treatment useful for some types of **cancers** that have spread.

Some results are removed in response to a notice of local law requirement. For more information, please see [here](#).







ALL

IMAGES

VIDEOS

14,400 Results

Any time ▾

## [Well-differentiated pancreatic neuroendocrine tumors: from ...](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3544293>

**Well-differentiated pancreatic neuroendocrine tumors (PanNETs)** comprise ~1–3% of **pancreatic neoplasms**. Although long considered as reasonably **benign lesions**, **PanNETs** have considerable malignant potential, with a 5-year survival of ~65% and a 10-year survival of 45% for resected lesions.

## [Gastroenteropancreatic Well-Differentiated Grade 3 ...](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5061528>

Jul 08, 2016 · **Different** classifications have been used to distinguish **pure neuroendocrine tumors** from mixed **endocrine-exocrine tumors**, and to distinguish within pure **neuroendocrine tumors** **different** categories according to their behavior (**well-differentiated** NETs with benign behavior, **well-differentiated** NETs with uncertain behavior, **well-differentiated** NETs with malignant behavior, and poorly **differentiated endocrine carcinomas** ...

**Cited by:** 57**Author:** Romain Coriat, Thomas Walter, Benoît ...**Publish Year:** 2016

## [Pathophysiology and Treatment of Pancreatic Neuroendocrine ...](#)

<https://www.ncbi.nlm.nih.gov/books/NBK279074>

Jun 12, 2018 · **Pancreatic neuroendocrine tumors (PNETs)** are an uncommon subset of **neuroendocrine tumors (NETs)** originating from hormone-producing islet cells. **Pancreatic neuroendocrine tumors (PNETs)** have an estimated incidence of less than 1 per 100,000 individuals and represent 1.3% of all **pancreatic neoplasms** (1-3).

**Cited by:** 2**Author:** Aaron Vinik, Carolina Casellini, Roger ...**Publish Year:** 2015





Pancreatic neuroendocrine tumors G3 and pancreatic ne



ALL IMAGES VIDEOS MAPS NEWS SHOPPING

14,800 Results Any time ▾

## Gastroenteropancreatic Well-Differentiated Grade 3 ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5061528>

Jul 08, 2016 · **Different** classifications have been used to distinguish **pure neuroendocrine tumors** from mixed **endocrine-exocrine tumors**, and to distinguish within pure **neuroendocrine tumors** **different** categories according to their behavior (**well-differentiated** NETs with benign behavior, **well-differentiated** NETs with uncertain behavior, **well-differentiated** NETs with malignant behavior, and poorly **differentiated endocrine carcinomas** ...

Cited by: 57

Author: Romain Coriat, Thomas Walter, Benoît Te...

Publish Year: 2016

## Well-differentiated pancreatic neuroendocrine tumors: from ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3544293>

**Well-differentiated pancreatic neuroendocrine tumors (PanNETs)** comprise ~1–3% of **pancreatic neoplasms**. Although long considered as reasonably **benign lesions**, **PanNETs** have considerable malignant potential, with a 5-year survival of ~65% and a 10-year survival of 45% for resected lesions.

## Pancreatic Neuroendocrine Tumors (Islet Cell Tumors ...

<https://www.cancer.gov/types/pancreatic/patient/pnet-treatment-pdq>

**Endocrine pancreas cells** are also called islet cells or islets of Langerhans. **Tumors** that form in islet cells are called islet **cell tumors**, **pancreatic endocrine tumors**, or **pancreatic neuroendocrine tumors (pancreatic NETs)**. **Exocrine pancreas cells** make enzymes that are released into the small intestine to help the body digest food.

### PEOPLE ALSO ASK

What is the prognosis of pancreatic neuroendocrine tumors? ▾

What is the treatment for neuroendocrine carcinoma? ▾

What is the treatment for pancreatic cancer? ▾

## Neuroendocrine Tumors

Medical condition

Neuroendocrine tumors are abnormal growths that begin in specialized cells called neuroendocrine cells. Neuroendocrine cells have traits similar to nerve cells and to hormone-producing cells.

[MayoClinic](#)

## Symptoms

Neuroendocrine/carcinoid tumors can be found during examinations for unrelated reasons. Patients may also experience symptoms associated with the disease in their pancreas or small intestine, rather than liver complications. Patients with...

## Causes

They might be certain diseases or other situations you don't have any control over, like how old you are.

Keep in mind, just because you have a higher risk for NETs doesn't mean you'll get a tumor. But talk to your doctor if you find yourself...

[Read more on WebMD](#)

## Treatments

Getting the right treatment for your neuroendocrine tumor (NET) starts with a little fact-finding. The most important thing you need to figure out is where the disease started and if it's spread to a new spot.

If your tumor is small and is growing...

[Read more on WebMD](#)

People also search for