



Did You Know...?

Pheo/Para Fast Facts

- Pheochromocytomas and paragangliomas are neuroendocrine tumors (NETs)
- *Paraganglioma (para)* is the general term for tumors of this type that occur in any location
- *Pheochromocytoma (phea)* is the name given to these tumors when they develop in the adrenal gland
- Like other NETs, they can be functional or non-functional
- Tumors which form in the adrenal gland, or in another location within the trunk of the body, are more likely to be functional
- Recent research suggests that the overall occurrence of pheo/para among the general population is about 1 in 3000
- There are roughly 20 genes, associated with at least a dozen inherited syndromes, which are implicated in the formation of pheo/para
- ~40% develop as part of an inherited syndrome – pheochromocytoma/paraganglioma have been called “the most heritable tumor in man”
- More than half of paragangliomas found in the head and neck are associated with inherited genetic mutations
- Malignancy cannot be determined by pathology, but rather is determined by the presence of metastases
- Biopsy of pheo/para is generally discouraged
- Due to their strong association with inherited syndromes and lurking malignant potential, guidelines for medical professionals now advise genetic counseling for, and long-term monitoring of, any patient presenting with pheo/para.



Symptoms

Although pheo/para are well-known for the symptoms they can cause, many of these tumors do not cause any noticeable symptoms and are found incidentally. When tumors are functional, they cause symptoms easily attributed to other, more common health conditions. Symptoms caused by pheo/para include

- High or fluctuating blood pressure
- Headaches
- Profuse sweating
- Flushing
- Palpitations / pounding or racing heart
- A feeling of impending doom
- Intense, unexplained feelings of anxiety or rage
- Pain

Pheo/para have been found in children as young as 7 years of age – and functional tumors may cause different symptoms in children. For example, instead of high-blood pressure, children may present with

- Signs of Attention Deficit Hyperactive Disorder (ADHD)
- Generalized behavioral issues (anxiety/panic, anger, depression)
- Bed-wetting which resolves after treatment has also been reported.