

## PITUITARY GLAND BASICS INFORMATION FOR PATIENTS

### WHAT IS THE PITUITARY GLAND? WHAT DOES IT DO?

The pituitary gland is a small hormone-producing gland that is located behind the eyes and under the front part of the brain. It makes multiple hormones that control and regulate many of the body's systems.

### WHAT KINDS OF PROBLEMS HAPPEN TO THE PITUITARY GLAND?

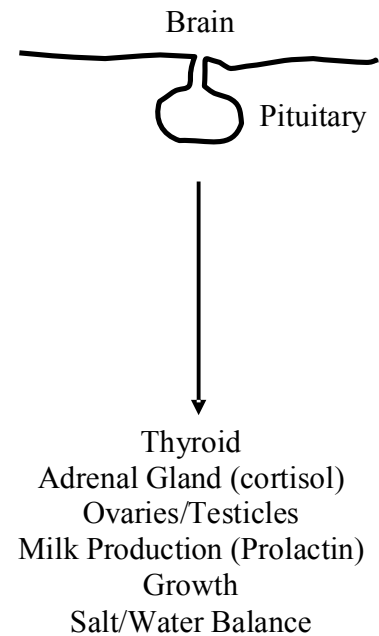
In general, pituitary gland problems can be divided into three categories:

1. Structural problems (abnormal growth, size, shape)
2. Hormone excess (overproduction)
3. Hormone deficiency (underproduction)

In an individual, pituitary problems may be limited to just one category or could involve two or all three categories.

### WHAT ARE THE SYMPTOMS OF PITUITARY PROBLEMS?

1. Structural. Because the pituitary gland is located within the skull, there is limited room for growth. If a growth in the pituitary is sufficiently large (typically more than 1 cm or 0.4 inches), nearby structures can be compressed and symptoms can occur. Most commonly headaches and/or visual changes (loss of peripheral vision) are the result.
2. Hormone excess. Depending on the hormone that is overproduced, symptoms can vary substantially. A list of common symptoms is below (please note that many other conditions can cause these same symptoms):
  - a. Prolactin – overproduction can cause milk production from the breasts, loss of libido, loss of menstrual cycles, and difficulty with erections.
  - b. Adrenal – overproduction of cortisol is called Cushing's syndrome and can result in fatigue, weight gain, weakness, depression, high blood pressure, diabetes, osteoporosis, thin skin, easy bruising, and loss of menstrual cycles.
  - c. Growth hormone – overproduction is called acromegaly and can result in fatigue, arthritis, excessive sweating, diabetes, and growth of the hands, feet, and face.
  - d. Thyroid – overproduction of thyroid hormone due to a pituitary problem is very uncommon but can result in fatigue, weight loss, heart racing, tremor (shakiness), sweating, intolerance to heat, poor sleep, and nervousness.
3. Hormone deficiency. A list of common symptoms related to hormone deficiencies is below. Again, these symptoms are “non-specific,” meaning many other conditions result in similar symptoms.
  - a. Thyroid – deficient thyroid hormone causes fatigue, weight gain, muscle aches, constipation, intolerance to cold, heavy menstrual cycles, and depression.
  - b. Adrenal – low cortisol levels cause fatigue, weight loss, loss of appetite, weakness, dizziness, nausea/vomiting/diarrhea, and abdominal pain.



- c. Ovary – pituitary problems can cause loss of estrogen and progesterone resulting in loss of menstrual cycles, infertility, hot flashes, low libido, vaginal dryness, and poor sleep.
- d. Testicles – loss of testosterone can cause fatigue, weakness, loss of endurance, low libido, difficulty with erections, and infertility.
- e. Growth Hormone – low growth hormone in children results in lack of growth; in adults it can cause fatigue, weight gain, weakness, and poor sense of well-being.
- f. Salt/Water Balance – most pituitary problems do not disturb this system, but when affected, low levels of a hormone called ADH can cause frequent urination, excessive thirst, and high blood sodium levels.

#### **HOW ARE PITUITARY PROBLEMS EVALUATED?**

Your doctor will listen to your complaints and will perform a physical exam to decide if any, additional testing needs to be performed. This may include blood testing, special “stimulation” or “suppression” blood testing, and imaging of the pituitary gland with an MRI scan.

#### **HOW ARE PITUITARY PROBLEMS TREATED?**

Treatment depends on the particular problem discovered. In general, options for treatment involve observation, medications (to replace hormones not being made or to control excess hormone production), surgery, and/or radiation therapy.

#### **WHAT IS A PITUITARY INCIDENTALOMA?**

A pituitary “incidentaloma” is a growth in the pituitary that is discovered when a CT or MRI scan is done for another reason. Up to 10-15% of people have a small, benign growth in the pituitary gland that can be detected by MRI scan. In the majority of cases, this growth does not cause any problems and no treatment is required. A basic evaluation should be performed to ensure the growth is not producing excess hormones. An MRI scan can be repeated after 12 months to ensure the growth has not changed.