

Underactive Pituitary Gland: Panhypopituitarism

- The pituitary gland is located in your brain, just behind the bridge of your nose. It is about the size of a green pea and it controls many other glands in the body. It produces the following hormones:
 - Prolactin - important for breastfeeding.
 - TSH - signals your thyroid gland to make **thyroid hormone, which is VITAL for life!**
 - FSH & LH - signals your ovaries/testes to do their jobs
 - ACTH - signals your adrenal glands to make **cortisol, which is VITAL for life!**
 - Growth hormone - important when you're a child and still growing.
 - Vasopressin - signals your kidneys to regulate water balance.
 - Oxytocin - important for childbirth, and for bonding with baby.
- **What is panhypopituitarism?**
 - This is a condition where either a tumor is big enough to squish the entire pituitary gland, or the surgery to remove it was unable to preserve the pituitary gland. Sometimes it means the patient had a "stroke" in their pituitary gland. It means that **you don't make ANY of the hormones listed above.** So we give them to you as medicines:
 - Levothyroxine: thyroid hormone; **necessary for life!**
 - Hydrocortisone: adrenal stress hormone; **necessary for life!**
 - Testosterone (men only): given as a topical gel or an injection.
 - Estradiol/progestrone: usually given as an oral contraceptive
 - Desmopressin: given anywhere from 1-3x/day to regulate water balance
 - There is no replacement for prolactin.
 - There is a replacement for oxytocin, but it is only used during labor and delivery.
 - Growth hormone is available for people who have not finished their growth cycle yet.
 - People with panhypopituitarism need to have a Medical Bracelet to notify first responders of their condition. You can get these online or at your pharmacy. **It's important so that if you are found unconscious, like after a car wreck, they will know to give you stress dose hydrocortisone and thyroid hormone to keep you alive.**
- Does everyone get panhypopituitarism after surgery?
 - No. Each case is different, and we watch patients very carefully to determine how many of their hormones are preserved and to decide which ones need to be replaced.
- **What is stress dosing?**
 - This is for people who have to take hydrocortisone. Usually you will take a small amount of hydrocortisone in 2 doses. But **when you are sick (i.e., the flu, etc.)**

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you have to double the dose of your hydrocortisone each day for the duration of your illness, then go back to your normal dose.

- What is Diabetes Insipidus?
 - This is a problem of water balance. Your pituitary gland can't make vasopressin anymore, so you can't concentrate your urine. You will produce very large amounts of almost clear urine.
 - It's very easy for patients with diabetes insipidus to become dehydrated, so you always must **Obey Your Thirst!**
- What happens if I don't make thyroid hormone, and I don't take thyroid hormone pills?
 - Thyroid hormone regulates our body's metabolism. If you don't have any, your body will continually slow down. You become sleepy, depressed, constipated, you gain weight, your skin and hair change, your legs can swell.
 - **If you need thyroid hormone but don't take it, you die gradually.**
- What happens if I don't make cortisol, and I don't take the hydrocortisone pills?
 - Cortisol is VITAL to our ability to maintain blood pressure and utilize the glucose in our body. If we have a stressed state and don't have cortisol we become critically ill.
 - **If you need cortisol but don't take hydrocortisone, you die quickly.**
- What about emergencies?
 - **All patients with panhypopituitarism should have a medical bracelet alerting providers to their condition, in case they are found unconscious.**
 - If the patient becomes acutely ill with nausea/vomiting and are unable to take the usual pills for steroid replacement, he/she must use the dexamethasone injection kit for emergency hormone replacement.
 - **This is a temporary "stopgap" so after injection, the patient must proceed to an emergency room for treatment.**
- What about fertility?
 - This can be tricky depending on the extent of your hormone replacement needs. The specifics can be addressed with fertility specialists and reproductive endocrinologists.
- Resources
 - Mayo Clinic www.mayoclinic.com
 - American Cancer Society
<https://www.cancer.org/cancer/pituitary-tumors/about/what-is-pituitary-tumor.html>

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