Cortisol Replacement Therapy

What is cortisol?
Cortisol is a hormone made by the adrenal glands that sit on top of the kidneys. This hormone is needed every day for many body functions. It is also needed when our body is under stress. Another hormone called adrenocorticotropic hormone (ACTH) made in the pituitary gland in the brain, triggers the adrenal gland to release cortisol when it is needed. If the pituitary gland has been damaged, is not functioning or if the adrenal glands are not able to make cortisol, your child will need to take replacement medicine for the rest of their life.

There is a connected system of hormones starting with your pituitary gland. It produces a hormone that sends signals to your adrenal glands where your body makes the cortisol.

What replacement medicine will my child need to take?

**Hydrocortisone by mouth** - Hydrocortisone is the medicine most often used to replace cortisol in the body.
- You will give a daily dose (by mouth) to replace what your child’s body needs.
- You will give an increased dose when your child is ill or injured. This is called a “stress dose”.

**Solu-Cortef by injection** - A second injectable form on hydrocortisone medicine is also used called Solu-Cortef. This is given by a shot that goes into the muscle. You give it in an emergency situation or if you child is vomiting up the medicine they took by mouth.

To Learn More
- Endocrinology and Diabetes 206-987-2640
- Ask your child’s healthcare provider
- seattlechildrens.org

Free Interpreter Services
- In the hospital, ask your nurse.
- From outside the hospital, call the toll-free Family Interpreting Line, 1-866-583-1527. Tell the interpreter the name or extension you need.
**What does cortisol do in the body?**

Cortisol helps to:

- Maintain energy supply for our body
- Maintain fluid and electrolyte balance (minerals) in our body
- Maintain normal blood sugar levels

Cortisol is also very important in controlling the body’s reaction to stress.

**Examples of stressful changes in our bodies when you might need to start “stress dosing” are:**

- Fever over 100.4 degrees F (38.0 C)
- Diarrhea
- Viral illness (such as a cold) that would keep your child home from school/daycare
- Infections requiring antibiotics
- Serious trauma such as broken bones, head injury, etc.
- Seizure activity (if not previously diagnosed with a seizure disorder)
- Repeated vomiting
- Severe emotional distress
- Surgery or dental work

**Are there side effects from hydrocortisone?**

No. Your child’s doses of hydrocortisone will replace what their body would normally naturally make.

**What should I do if I forget to give a dose?**

- Try to give your child their cortisol replacement at the same time(s) each day. If you forget a dose, give the dose as soon as you remember.
- Continue to give the rest of the day’s doses at the normal times. This MAY mean that you are giving 2 doses at the same time. This is fine. Too much cortisol replacement is not harmful but too little may cause problems such as low blood pressure, electrolyte imbalance and low blood sugar that can all lead to unconsciousness and seizure.

**What should I do if my child has vomited and can’t take the medicine by mouth?**

- Wait for 30 minutes and then try to repeat the dose.
- If your child is still unable to tolerate the doses, you will need to give the hydrocortisone shot into their muscle (Solu-Cortef).
- After you have given the shot, call 911 or go to nearest Emergency Room.
**What are signs that my child’s cortisol level is low?**  
Call the Endocrine Office if your child is having any of these symptoms. We may need to change their dose.
- Headache
- Weak or tired (lethargic)
- Dizzy

**Planned surgery or dental work**  
If your child is having a planned surgery or dental work of any kind:
- Tell the surgeon or dental office that your child has adrenal insufficiency.
- Please have the surgeon or dental office contact our office 1 to 2 weeks before your child’s planned procedure so that we can make a plan of care with them.
- For an **unplanned** or **emergency** medical or dental procedure, please show the surgical or dental team of your child’s Adrenal Insufficiency Action Plan.

**Reminder**
- **Do not wait** to give your child their Solu-Cortef injection if you suspect they are in an adrenal crisis. In an adrenal crisis your child is vomiting, can’t keep medicine down, having a seizure or becomes unconscious.
- Once the injection has been given, call 911 or go to nearest Emergency Room.
- Washington State Emergency Medical Services (EMT’s/Paramedics) do not carry Solu-Cortef. You will be responsible to give the injection on your own, then call EMS.

**When do I call the Endocrine Office?**
- For general questions call 206-987-2640 or email endonurse@seattlechildrens.org  
  Example: signs and symptoms that cortisol level may be low (see above)
- For **urgent** questions: 206-987-2000 Seattle Children’s Hospital operator and ask them to page the “RN or Endocrinologist on call.”
  Example: you have been stress dosing for over 1 week.
  Example: you have given the Solu-Cortef and gone to the ER.