



Adrenal Insufficiency

Recognizing and Managing Adrenal Insufficiency in the
Adrenal Insufficient Student



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Some parts of this presentation were taken from a training by developed by The National College of Technical Instruction (a division of American Medical Response) which was developed for EMS providers in collaboration with Adrenal Insufficiency United.

AIU is a tax-exempt non-profit organization dedicated to improving the lives of Adrenal Insufficient patients through education, outreach, training, and collaboration with medical professionals.

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Objectives

- To understand what adrenal insufficiency means for your student.
- Understand the meaning of a “stress dose”.
- Recognize the signs and symptoms that may indicate your AI student needs “stress dosing”
- Recognize some of the common precipitating events.
- How to take precautions so a crisis doesn’t happen.
- What to do when and if a crisis occurs.
- Instructions on the administration of oral and injectable medication.
- Extra information on how adrenal insufficiency may affect your student’s academic performance.



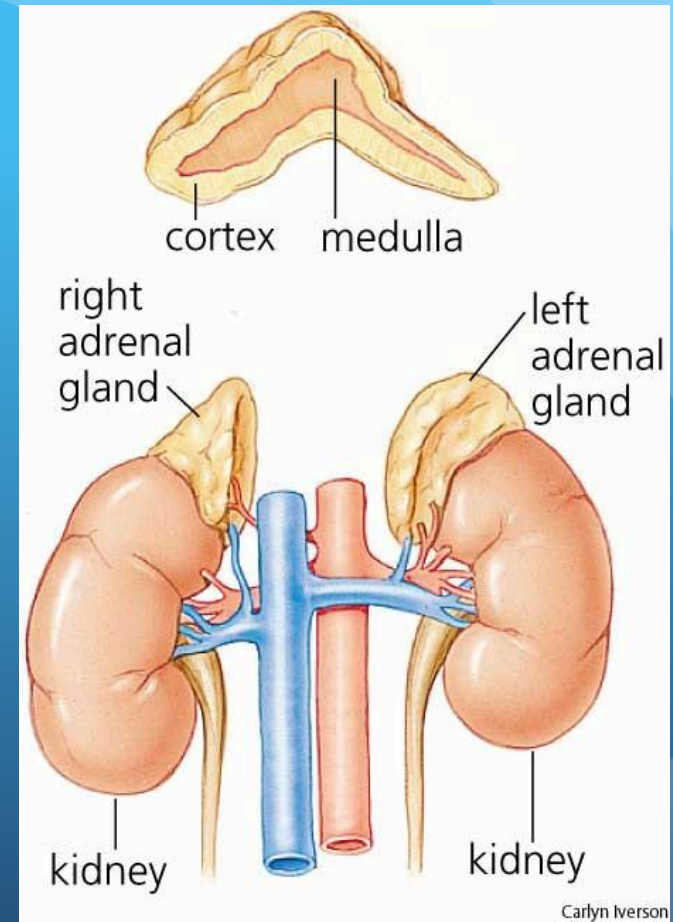
What is Adrenal Insufficiency?

- Much like a diabetic student who needs insulin, your student with adrenal insufficiency is missing a hormone or hormones vital to life and must take replacement medications on a daily basis.
- Adrenal insufficiency is a medical condition in which the adrenal glands cannot produce the glucocorticoid hormone **cortisol**, which is required for the body to maintain normal energy supply, fluid and electrolyte balance, blood pressure, blood sugar, and the body's reaction to physical stress such as illness or injury.
- Some patients with adrenal insufficiency also lack the mineralocorticoid hormone **aldosterone**, the hormone needed to maintain a normal blood sodium and fluid balance (salt and water).
- Do not confuse adrenal insufficiency with adrenaline. Adrenaline could be affected, but it is the lack of **cortisol** that puts your student at risk of disability and death.



Adrenal Glands

The adrenal glands are located on the top of the kidneys. Several types of disease can affect the adrenal glands and cause cortisol deficiency. These are diagnoses made by Pediatric Endocrinologists.



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Adrenal Insufficiency vs Adrenal Crisis

Adrenal Insufficiency:

- Chronic condition
- Can be caused by diseases of the adrenal or pituitary glands or long-term steroid use.

**** requires daily medications*

Adrenal Crisis:

- Acute condition
- An exacerbation of adrenal insufficiency
- Caused by illness, injury, stress, or missing or stopping steroid medications

**** requires immediate treatment with extra oral or injectable medication*



WHAT IS A STRESS DOSE?

People with normal adrenal glands produce significantly more cortisol when their bodies are under physical or emotional stress. Patients with adrenal insufficiency cannot produce extra cortisol and must be given extra doses of medication during times of extreme physical stress such as fever, vomiting and diarrhea, surgery, and traumatic injuries such as broken bones and concussions. These are called “STRESS DOSES.” Depending on the severity of the event a stress dose may be given orally or via injection.

Please refer to your student’s Health Plan for more information about the proper stress dose for him/her.

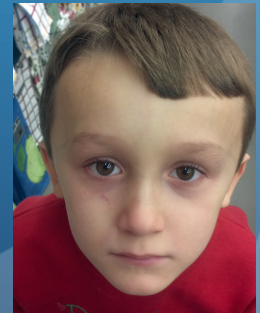
Your student’s Health Plan will have instructions for oral stress dosing for minor or moderate illness or injury and for the emergency injection for serious illness or injury. Please be comforted by the fact that in almost all cases your student will be well served by an oral stress dose and a call to a parent or guardian to pick him/her up for the remainder of the school day.



HOW WILL I KNOW WHEN MY STUDENT NEEDS A STRESS DOSE?

Signs and symptoms you may see or hear from your student:

- Headache
- Nausea
- Abdominal pain
- Confusion
- Pale skin
- Listlessness or significant fatigue
- Dehydration
- Dizziness





WHAT ARE SOME EVENTS THAT MAY REQUIRE MY STUDENT TO STRESS DOSE?

- Vomiting or severe illness or injury – will require treatment with injection
- A fever, moderate illness or injury – may be treated with increased doses of oral steroids
- Mild injuries such as a scraped knee may not require any oral dosing.
- Emotional stress dose not usually require stress dosing



IMPORTANT THINGS TO REMEMBER

- Adrenal crises can happen anywhere.
- They can progress quickly
- Young children are more at risk because they are unable to communicate as effectively



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WHAT CAN I DO TO LESSEN THE CHANCE MY STUDENT WILL NEED AN EMERGENCY INJECTION?

- Be mindful of hot days which can increase the risk of dehydration.
- Be mindful of illnesses such as flu that are going around the school and keep parents informed.
- Even if you are unsure, don't hesitate in calling parents or sending the child to the nurse or office if you notice signs or symptoms of possible adrenal crisis.

**** REMEMBER Getting extra cortisol will NOT be harmful*

**** WHEN IN DOUBT Give the shot*



HOW DO I TREAT MY STUDENT IN AN ADRENAL CRISIS?

Teachers should have phone numbers for parents and physicians of students with adrenal insufficiency.

If your student is unconscious, or hard to keep awake assume that he or she is having an adrenal crisis. Persistent vomiting or a serious injury such as a broken bone also put a student at risk of crisis.

- Send someone to call 911 and the parents
- STAY CALM as you prepare to give injection
- Give injection and wait with your student until help arrives

If your student is sick, mildly injured or has vomited only one time, you may have time to call the parents and/or physician and follow their instructions.

***** REMEMBER Getting extra cortisol will NOT be harmful**

***** WHEN IN DOUBT Give the shot**



Solu-Cortef®

Dose per the physician instructions given in the students health plan.

Onset is as little as 15 minutes following administration.

Instructions from the National Institutes of Health are on the following pages.

A link to a live video on the administration of Solu-Cortef® is on the last page of this training.

Although these instructions show how to self inject they are the same instructions for injecting someone else.





HOW DO I ADMINISTER THE SOLU-CORTEF® INJECTION?



How to give an injection of hydrocortisone



1. Wash your hands.
2. Assemble your equipment.



3. Mix the medication vial by pushing down on top of the vial to release the cork.



4. Shake the vial to mix the medication solution well.

5. Use alcohol to clean the rubber stopper on the vial.



6. Take the cap off the syringe needle. Insert the needle into the vial.

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Under number 7:
Most students will need the whole vial.

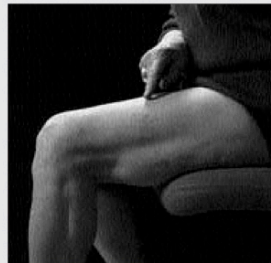
If your student's dose is less than 100 mg you will not use the whole vial. However, if you draw up too much medication don't worry. It will do NO HARM to your student. It is better to give too much than too little.

An injection of Solu-Cortef® is given in the same location as that of an epi-pen.



7. Draw up the medication. Adults should use all the medication in the vial.
For a child, use the dose prescribed by the doctor.

8. Replace the needle cap.



9. Select your injection site.

To inject yourself safely, become familiar with your body. Uncover your thigh and look at it. Now, draw an imaginary line in the middle of your thigh to divide it in half lengthwise. The outer portion is where you will be injecting. Now, imagine your thigh divided into three equal portions, from the knee to the hip. The outer portion of the inner third of your thigh is where you will do the injection.



10. Use alcohol to cleanse the injection site on your skin.



11. Remove the cap from the needle. Hold the syringe like a dart.

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Under number 14:
Do not pull back on the plunger if this is the only vial and syringe of Solu-Cortef® that you have.

Keep in mind this medication is the bio-equivalent to what the body makes naturally and will do NO HARM. Even if it's injected into a blood vessel.



...spreading your skin and then the fingers, spread your skin while pushing down lightly.



13. Dart the needle into the thigh injection site, going straight in at a 90-degree angle.



14. Hold the syringe in place. Pull back the plunger to make sure you are not injecting into a large blood vessel. If blood appears in the syringe, withdraw the syringe and discard it.

If this is the only dose of medication you have, inject the medication anyway.



If you have another vial of medication, prepare another syringe with medication, and inject yourself in a slightly different place.



15. After injecting the medication, put tissue or gauze near the needle, and pull the needle out quickly.

16. Massage the injection site gently.

17. Place the syringe and needle in a hard, unbreakable container (such as an empty coffee can with a lid) before disposing of it.

18. Call your local doctor.

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CLOSING REMARKS

In closing we want to stress a few things.

- Students with AI look just like every other child in your class, most often you won't even notice they are living with a life threatening condition.
- Should an emergency occur just remember... "When in doubt inject."
- Many children with AI just want to be "normal" and don't want their peers to know they have AI. Please be sensitive when questioning or talking about your student's condition.
- **THANK YOU FOR VIEWING THIS TRAINING! AS FELLOW TEACHERS WE KNOW YOUR DAYS ARE BUSY.**

Our thanks to Dr. Nancie MacIver and Dr. Lindsey Nicol for their helpful comments.

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LINKS FOR FURTHER INFORMATION:

<http://www.aiunited.org>

<https://www.facebook.com/AIUnited>

https://www.mediafire.com/folder/d7g111ycnv979/AI_Information_Downloads

<http://www.cahisus.co.uk/pdf/HYDROCORTISONE.pdfs>

http://www.cc.nih.gov/ccc/patient_education/pepubs/mngadrins.pdf

This is a youtube video demonstration on how to inject Solu-Cortef® done by a nurse. Although it was made for Congenital Adrenal Hyperplasia the instructions are the same.

https://www.youtube.com/watch?v=nuJ9Wj_eb4U