

# CUSHING'S SYNDROME

## Background

Cushing's syndrome, also called hypercortisolism, is a broader term used to describe a group of symptoms caused when the body produces too much cortisol. Cortisol, known as the body's main stress hormone, helps regulate response to stress, illness, or injury. Cortisol also helps regulate other vital body processes including metabolism, immune response, blood pressure, and glucose production. Growth failure associated with weight gain is the primary feature of Cushing's syndrome in children. Significant medical comorbidities, including hypertension, hyperglycemia, cardiovascular disease, infections, and fractures are also associated.

Cushing's syndrome can be caused by an abnormality or growth (e.g., tumor) in the adrenal or pituitary glands that stimulates the overproduction of cortisol. Taking long term substantial amounts of corticosteroid drugs (e.g., prednisone, Dexamethasone), often prescribed to treat chronic conditions, such as asthma, lupus or rheumatoid arthritis can also cause Cushing's syndrome. Cushing's disease is the most common form of Cushing's syndrome where symptoms are caused specifically by high levels of cortisol due to a pituitary tumor.

Too much cortisol produced by the body can slow a child's growth and cause a variety of other symptoms including:

- Weight gain (specifically in the mid-torso)
- Dramatic slowing in vertical growth
- Increased fat around the neck (Buffalo hump)
- Thinning extremities due to muscle weakness
- Round or moon-shaped face
- Excess facial hair in girls
- Delayed sexual development
- Menstrual irregularities
- Fatigue
- Headaches
- Emotional changes such as depression and moodiness
- Skin manifestations (acne, bruising, fungal infection)
- Sleep disturbances



The goal of treatment is to stop or remove the source of the excess cortisol in the body. Surgery may be necessary to remove the pituitary or adrenal gland. Other treatment includes radiation, chemotherapy, or the use of cortisol-inhibiting drugs.

After successful surgery for Cushing's syndrome, the child may experience a period of adrenal insufficiency requiring administration of a replacement glucocorticoid steroid. Replacement dosages should be monitored and weaned as appropriate.

## Top Takeaways for School Considerations

Cushing's syndrome is caused by elevated levels of cortisol. In children, the administration of steroids is the most common cause.

Elevated levels of cortisol may impact school performance including effects on cognition (e.g., difficulty focusing, forgetfulness, unclear thinking, decreased attention span).

A child may experience residual impairments in mood and behavior, most notably symptoms of depression, anxiety, and mania related to the hypersecretion of cortisol.

The condition's potential to impair areas such as body image and relations with peers may have the most effect on quality of life for a student in school.

Development of an emergency plan for adrenal crisis may be necessary.

## Kennedy Krieger Institute's Specialized Health Needs Interagency Collaboration

The Specialized Health Needs Interagency Collaboration (SHNIC) program is a collaborative partnership between Kennedy Krieger Institute and the Maryland State Department of Education.



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## Considerations for the Individualized Healthcare Plan (IHP)

- Nursing diagnosis of fatigue, risk for injury, self-care deficit, risk for infection, impaired thought process
- Current diagnosed health condition including date of diagnosis, progress of disease process and other chronic health conditions
- Current medication and treatment orders (consider schedule, equipment needs and side effects)
- Allergies or food restrictions
- Student-specific triggers, avoidance, or intervention strategies
- Nutrition interventions and equipment needs (consider food management plan, supervision, etc.)
- Allergies or food restrictions
- Student-specific triggers, avoidance, or intervention strategies
- Activity, positioning, transferring (consider precautions and/or restrictions)
- Skin check, pressure relief techniques
- Use of specialized equipment, adaptive equipment, and orthotics
- Consider emergency care plan(s) (ECP) and emergency evacuation plan(s) (EEP) as related to medical needs in the school setting, and staff education/training, as appropriate

## Discussion Starters for Educational Team

1. Has the school staff been trained to implement the student-specific emergency plan?
2. Would the student benefit from evaluations or assessments in any of the following areas: physical therapy, occupational therapy, speech and language therapy, assistive technology, adapted physical education, functional behavior, psychology, hearing and vision?
3. Would the student benefit from additional academic support and/or modified education (e.g., copies of notes, extra time, reduced workload, simplified instructions, alternative formats for presentation of material, 504/IEP)?
4. Can strategies be implemented to assist the student with executive function (e.g., plan, prompts, organizers, agendas?)
5. Can rest breaks, safe spaces or reduced stimulation times be built into the student's schedule?
6. Does the student require activity precautions to prevent injury?

## Resources

Life with Cushing's Disease  
[cushingsdisease.com/](http://cushingsdisease.com/)

Cushing's Support & Research Foundation  
[csrf.net/](http://csrf.net/)

Cushing's Syndrome: Johns Hopkins Medicine  
[hopkinsmedicine.org/health/conditions-and-diseases/cushing-syndrome](http://hopkinsmedicine.org/health/conditions-and-diseases/cushing-syndrome)



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