

## The Various Corticosteroids and Glucocorticoids that can put you at risk

- Joint and muscle steroid injections
- Topical applications
- Oral tablets
- Inhaled steroids
- Intravenous steroids

Patients taking steroids for longer than two weeks are at risk of adrenal suppression. Steroid treatments must be reduced slowly to avoid adrenal crisis. Never stop any steroid treatment abruptly.

Short treatments, eg. 3 day dosing does not pose a significant risk.

## How the HPA Axis is Affected by Steroids

Adrenal suppression, (AS) Cortisol production by the adrenal glands is suppressed by exposure to additional steroids used to treat illness.

The pituitary and hypothalamus stop signaling the adrenals to produce cortisol as a result of therapeutic steroids in the body. Over time, the adrenals can atrophy.

## Prednisone Withdrawal

If you abruptly stop taking prednisone or taper off too quickly, you might experience prednisone withdrawal symptoms. The most common are:

- Severe fatigue
- Weakness
- Body aches/joint pain

Prednisone is similar to cortisol, a hormone naturally made by your adrenal glands. If you take prednisone for more than a few weeks, your adrenal glands decrease cortisol production. A gradual reduction in prednisone dosage gives your adrenal glands time to resume their normal function.

The amount of time it takes to taper off prednisone depends on the disease being treated, the dose and duration of use, and other medical considerations. A full recovery can take anywhere from a week to several months. Contact your doctor if you experience prednisone withdrawal symptoms as you are tapering off the drug.

(Source Mayo Clinic, Prednisone Withdrawal, Why taper down slowly.)



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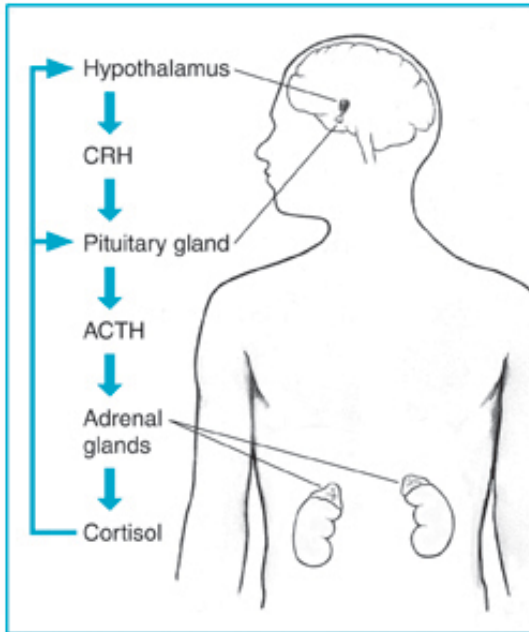
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## STEROIDS & Adrenal Suppression



**TAKING STEROIDS FOR ANY ILLNESS can cause Adrenal Suppression & Adrenal Insufficiency**



The HPA axis. The amount of cortisol produced by the adrenal glands is precisely balanced. (NIDDK)

## Secondary Adrenal Insufficiency

Secondary Adrenal Insufficiency can be an unfortunate outcome for patients being treated with any form of steroids. Although considered rare in the past, the numbers of SAI patients are rising rapidly and now outweigh the incidence of PAI by 2:1. Treatment for other illnesses with steroids is the leading cause of SAI.

(National Institute of Diabetes and Digestive and Kidney Diseases, NIDDK)

### Current Guidelines

- Patients be informed of the signs & symptoms of adrenal suppression
- Carry a steroid wallet card
- Wear a medical alert bracelet
- Carry a Solu Cortef emergency injection kit
- Being aware of the risk for AS, alert for symptoms, and prepared for an emergency, can help patients stay safe.

## Recommendations

- \* **Take care to recognise low cortisol symptoms when on therapy or discontinuing therapy (including inhaled corticosteroids). Never discontinue steroid use without the supervision of your doctor.**
- \* **Be aware of the symptoms of Adrenal Suppression or Adrenal Crisis. Discuss a crisis plan with your doctor.**
- \* **Ask your doctor for a prevention strategy.**
- \* **When you are ready to discontinue steroid use, discuss a slow tapering program with your doctor.**
- \* **Illness, accident, or surgery (inc. minor surgery) can put you at risk of Adrenal Crisis. You need additional steroid cover for these circumstances.**
- \* **If Adrenal Suppression is suspected, discuss having an initial 8am Cortisol and ACTH blood test with your doctor.**
- \* **Severe symptoms while tapering off steroids indicate the need for HPA axis testing.**
- \* **8 am cortisol, baseline ACTH and the ACTH stimulation test are the recommended methods to test HPA axis function.**

**Taking corticosteroids or glucocorticoids, although essential in the treatment of your disease, can cause Adrenal Suppression and Adrenal Insufficiency. Please ask your doctor if you are at risk.**

### Clinical Presentation Adrenal Suppression (AS)

The clinical presentation of AS is highly variable. Cortisol and ACTH production is inhibited.

Symptoms are often non-specific and may include:

- |                      |   |                                |
|----------------------|---|--------------------------------|
| * Weakness & fatigue | * abdominal pain                          | * diarrhoea                    |
| * Malaise            | * headache                                | * muscle & joint pain & spasms |
| * Nausea             | * Possible growth retardation in children |                                |

**Secondary Adrenal Insufficiency (SAI):** Adrenal insufficiency is a condition in which the adrenal glands are no longer able to produce adequate amounts of cortisol (a glucocorticoid responsible for maintaining blood pressure, blood glucose and energy levels during times of physiological stress, such as illness, surgery or injury, or emotional stress).

(Source: Allergy, Asthma & Clinical Immunology, Biomed Central. Adrenal Suppression: A Practical Guide.)