



The Review on Impact of Steroids Prescription in Patients for Longer Term

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ABSTRACT

In this piece ,we'll go over how the half-life of steroid medication work. The factors that might affect how long asthma steroid last in your system are also covered. The For the treatment of ailments including croup and asthma, children are frequently prescribed short course oral corticosteroids.(1) It is well known that corticosteroids can cause a variety of adverse drug reactions. The kind of medication you are taking will determine how long steroids for asthma stay in your system.(1) For instance, it may vary depending on whether you're taking an oral corticosteroid (like prednisone) or an inhaled drug (like Advair, which contains salmeterol and fluticasone). The half-life of a steroid drug controls how long it stays in your system. Particularly after extended use, it has not always been easy to distinguish the advantageous effects of steroids from their undesirable side effects when used medicinally. Physicians may believe that short-term steroid use is safe. lack the well-known side effects of steroids over the long term; yet, even little doses of systemic corticosteroids can cause venous thromboembolism, depression, sleeplessness, fractures, sepsis, and elevated blood pressure. Still, the negative effects of ICS on development, bone metabolism, and the adrenal (HPA) axis should raise some red flags. So, the main goal of this study was to compare the effects of long-term inhaled corticosteroid treatment (ICS) on a child's growth, bonehealth(3)

Keywords: Impact of Steroid, Classification, Types, How do it Works, When are Steroids given, Uses, Side Effects, Effects on Long term use, Overcome

INTRODUCTION

Often known as steroids, corticosteroids are a class of drugs that are used extensively to treat a number of autoimmune and inflammatory diseases. While many patients can have significant symptom alleviation and an improvement in quality of life from these medications, long-term use of these treatments can have a number of negative side effects. To avoid potential consequences and make educated treatment decisions, patients and healthcare professionals must be aware of the dangers associated with long-term corticosteroid medication. Corticosteroids work by acting similarly to the hormone cortisol, which is naturally produced by the adrenal glands. They function by stifling immune system activity, lowering inflammation, and preventing the release of chemicals that trigger autoimmune and allergic reactions. Prednisone, prednisolone, dexamethasone, and hydrocortisone are examples of common corticosteroids.(4)

Inhaled steroids have been shown in studies to lessen bronchial inflammation, but they do not consistently enhance lung function. Best results are obtained in conjunction with bronchodilators.(5)

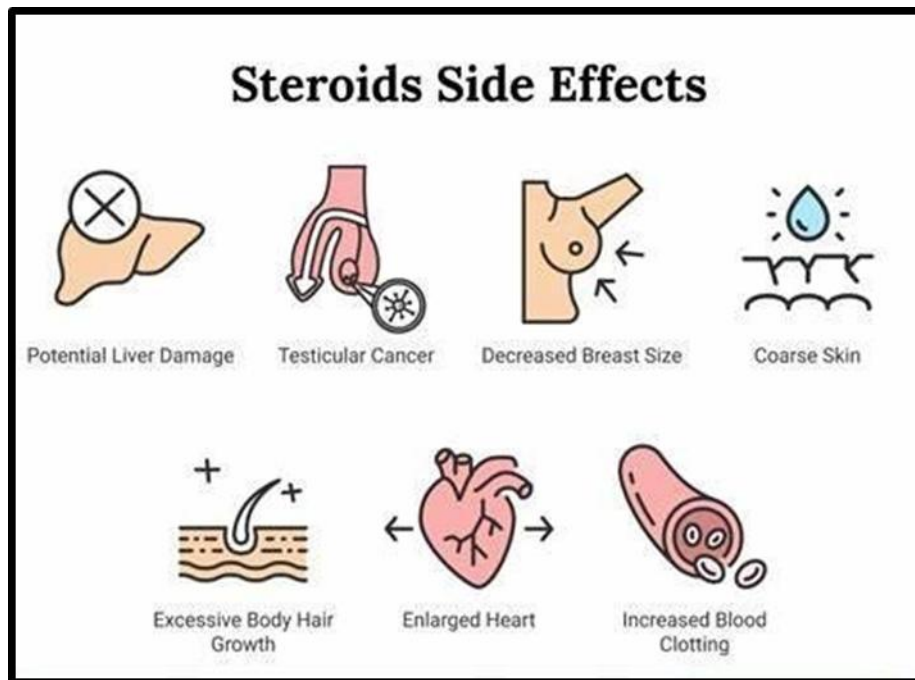
Common inhaled steroids include:

- fluticasone
- Pulmicort (budesonide)
- Qvar (beclomethasone)

Strong anti-inflammatories are found in oral systemic steroids. Although symptoms are promptly alleviated, medical professionals typically refrain from long-term oral steroid prescriptions. Infections, diabetes, high blood pressure, venousthromboembolism (blood clots in the veins), and osteoporosis (weakened bones) are examples of side effects.(5)

Common oral corticosteroids are:

- Prednisone
- Cortisone
- Methylprednisolone
- Dexamethasone.



CLASSIFICATION OF STEROID

The following are some of the most popular steroid classifications.

- Vertebrate
- Animal
- Insect
- Steroid hormones, such as ecdysterone
- Stabilize(6)

A subclass of sex hormones known as “sex steroids” causes or contributes to AIDS in the replication of sex differences. These include progestogens, oestrogens, and androgens. *Sex steroids are a type of sex hormone that causes or promotes sex variations in reproduction. Androgens, oestrogens, and progestogens are among them.(7) * Corticosteroids are classified into two types: mineralocorticoids and glucocorticoids.

Glucocorticoids and Mineralocorticoids help to maintain blood volume, regulate numerous aspects of metabolism and immunefunction, and regulate electrolyte excretion in the kidneys.(8)

The majority of medical ‘steroid’ medicines are corticosteroids. Anabolic steroid hormones are a type of steroid that interacts with androgen receptors to improve muscle and bone integration. Anabolic steroid hormones can be either natural or manufactured. The term “steroids” is widely used to describe anabolic steroids. *Cholesterol is a lipid that controls the fluidity of cell membranes and is a primary component of atherosclerotic plaque. * Plant

* Phytosterols Examples of phytosterols include beta-sitosterol and stigmasterol.*Brassinosteroids Campesterol is a kind of Brassinosteroid. * Fungus * Ergosterols Yeast is an example.(7)

TYPES OF STEROIDS:

The primary kinds include tablets, syrups, and liquids, such as prednisolone.

- Inhalers, including beclomethasone and fluticasone
- Nasal sprays, including beclomethasone and fluticasone
- Injections, such as methylprednisolone, are administered into joints, muscles, or blood vessels.(6)

Steroids can be used to treat several disorders, including:

- COPD and asthma illness.

- Hay fever, eczema, and hives
- Achy joints or muscles, such as those caused by arthritis or tennis Symptoms of frozen shoulder and elbow include pain from pinched or irritated nerves, similar to sciatica, inflammatory bowel disorders such as Crohn's disease, lupus, and MS.(7)

HOW DO STEROIDS WORK?

The way that steroids function is by lowering immune system activity and inflammation. The body employs its white blood cells and other chemicals to fight against infection and foreign objects like bacteria and viruses during the process of inflammation. However, the immune system—the body's defense mechanism—may not work correctly in some illnesses. This might lead to inflammation, which would then act to harm the body's tissues. Some indicators of inflammation are:

- Paleness.
- Warmth.
- Bloating.
- Agony.

Inflammatory chemical synthesis is inhibited by steroids. This keeps the amount of tissue injury to a minimum. By altering the function of white blood cells, steroids also lower immune system activity. (8)

WHEN ARE STEROIDS GIVEN?

Many disorders where the body's defense mechanism malfunctions and damages tissue are treated with steroids. In other cases, steroids may be the primary treatment. Steroids may only be used in rare circumstances or after all other treatments have failed for other disorders. There are several rheumatologic inflammatory disorders that are treated with steroids, including:

- Systemic vasculitis, or blood vessel inflammation.
- Myositis, or muscular inflammation.
- Chronic inflammatory arthritis, or rheumatoid arthritis.
- Systemic lupus erythematosus, a widespread illness brought on by aberrant immune system activity). (9)

USES OF STEROIDS

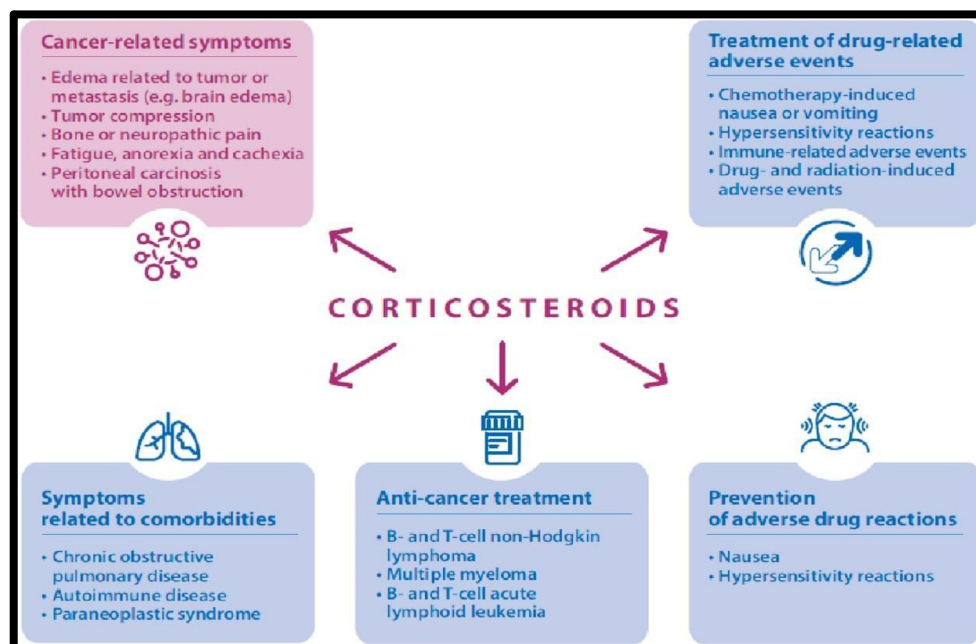
Many ailments, such as the following, can be treated with steroids:

- COPD, or chronic obstructive pulmonary disease, and asthma
- Hay fever
- Eczema and hives
- A painful joint or muscle, such as frozen shoulder, tennis elbow, or arthritis
- Sciatica, or pain stemming from an inflamed or trapped nerve
- Degenerative bowel conditions, like Crohn's disease
- Lupine
- MS, or multiple sclerosis(10)

SIDE EFFECTS:

When taken for a few weeks at a low dosage, prednisolone typically has no negative effects. Certain side effects are more common when steroids are used in high doses or for extended periods of time. Once the steroid is lessened or stopped, the majority of problems go away.

Most common side effects	Treatment
Weight gain (due to increased appetite) Rounded face Stretch marks, easy bruising Poor sleep	<ul style="list-style-type: none"> • Eat healthy foods • Take steroids in the morning
Mood changes Headaches Facial flushing	<ul style="list-style-type: none"> • Notify your doctor • Standard pain relief – paracetamol (Panadol)
Rare side effects	Treatment
Avascular necrosis of bone (a painful condition of the bones)	<ul style="list-style-type: none"> • Your doctor will advise
Side effects after long term use	Treatment
Osteoporosis (thinning of the bones) Poor growth Increased hairiness Cataracts	<ul style="list-style-type: none"> • Take calcium and vitamin D • Give dose every second day if the disease allows • Notify your doctor • Notify your doctor



EFFECTS ON LONG TERM USE:

Long-term corticosteroid use can dull or impede the adrenal gland's natural response to physiological stress, which results in adrenal suppression. In order to avoid this effect, many cancer patients may occasionally get doses of steroids as adjuvants for pain management or as an antiemetic to prevent hypersensitivity reactions. Spiegel et al. performed Adreno Corticotrophic Hormone (ACTH) stimulation experiments in 14 patients receiving high-dose prednisone for emesis prevention prior to chemotherapy..(7)

At 24 hours, 13 patients' adrenal function was suppressed, and 5 patients' adrenal function remained suppressed for more than a week. ACTH stimulation tests were done in nine women with ovarian cancer before and during chemotherapy in which dexamethasone was used as a pre-medication. A total of 523 medications were used. They observed effects on the hypothalamic-pituitary axis for up to eight days, but no long-term suppression was documented. While tapering steroids is probably not necessary when administered in short, intermittent doses, adrenal suppression should be taken into consideration when patients who have had such treatment present with hypotension and severe illness. Lefor has conducted research on replacement-dose steroids in surgical patients with cancer.(7) Research on the risks associated with corticosteroid use in people with advanced cancer has been

extensive. Acute side effects include dyspepsia, peptic ulcer disease, insomnia, vaginal and oral candidiasis, anxiety, and glucose intolerance. Long-term use side effects include cushingoid appearance, weight gain, oedema, cataracts, osteoporosis, proximal myopathy, skin thinning, infection, and delayed wound healing. Corticosteroids have a number of neuropsychiatric adverse effects, including agitation, depression, and psychosis. Therefore, it's imperative to carefully weigh the potential advantages of corticosteroid medicine against the potential risks of side effects and to regularly review the drug's effectiveness. The course of treatment should be adjusted or discontinued if no improvement is seen.

Steroid side effect	Monitor	Potential treatment options
Gaining Weight And Being Obese	To avoid weight gain, families should get dietary counseling before to starting a steroid regimen. Oftentimes, Using Steroids Increases Your Hunger	A family's ability to eat sensibly is essential to preventing excessive weight gain.
Cushingoid Features (“Moon Face”)	You may notice that your face gets fuller and your cheeks become more noticeable over time.	Reducing Sugar and Junk Food Intake and Eating a Balanced Diet Can Help Lessen These Traits. You Can Find Healthy Meal Plans At. A Physician Could Suggest Cutting Back on Salt Utilization.
Delayed Puberty	Keep An Eye On Your Pubertal Growth At Home. Determine Whether There Is A Family History Of Delayed Sexual Development (I.E., Find Out When Parents Went Through The Pubertal Transition).	If you or your child are concerned about his pubertal development, or if puberty hasn't started by the time your child is 14 years old, see your neuromuscular specialist for an endocrine evaluation. Testosterone replacement therapy is usually advised for males who have not reached puberty by the age of 14.
Acne, Fungal Infections Of The Skin(Tinea), Warts	More Pronounced In Teenagers	Use Targeted Therapies (Topical Prescriptions), And Wait Until There Is Emotional Disturbance Before Altering The Steroid
Adverse Behavioral Changes	Determine Any Underlying Problems With Mood,	Prior To Beginning Steroid Therapy, Baseline Behavior Problems
	Behavior, And ADHD (Even Before To Beginning Steroid Use). Be Advised That During The First Six Weeks Of Steroid Therapy, They Frequently Become Temporarily Worse.	Should Be Addressed, For As With ADHD Counseling Or Medication. Talk To Your Doctor About Moving The Schedule Of Your Steroid Medicine To Later In The Day To Avoid The School Or Work Day. Your Doctor Might Also Recommend A Referral To Behavioral Health.
Short Stature	Make Sure That, As Part Of Routine Care, Height Is Measured Every Six Months To Monitor Growth.	Talk To Your Neuromuscular Specialist If You Believe That Your Growth Has Slowed Down Or Stopped; They Could Recommend That You See An Endocrinologist.

Osteoporosis	<ul style="list-style-type: none"> • At Every Appointment, Inquire About Back Pain And Take A Thorough History Of Fractures. Every One To Two Years, Spine X- Rays Are Taken To Check For Spinal Compression. • DEXA Scans To Track Bone Density Every Two To Three Years. • Annual Blood Level Of Vitamin D (Best Measured In Late Winter In Climates With Seasonal Variations) And, If Necessary, Supplement With Vitamin D3. 	<ul style="list-style-type: none"> • Supplemental Vitamin D May Be Required Based On Blood Levels. Every Year, Check Your 25.O-H Vitamin D Levels And Take Supplements If Necessary. Verify That Your Calcium Intake From Food Satisfies AgeAppropriate Requirements. • If Not, Calcium Supplements Can Be Required. • Activities Including Weight Bearing May Benefit Bone Health. Consult Your PT Or NMS Before Beginning An Activity Or Weight-Bearing Regimen.(2)
Peptic Ulcer Disease	<p>Reporting Stomach Pain Is Important Since It May Indicate Damage To The Stomach Lining. Blood Might Be Seen In The Stool If The Patient Is Anemic Or Has A Suspicious Medical History.</p>	<p>Keep Off Nsaids (Naproxen, Ibuprofen, And Aspirin). If Symptoms Occur, Medications And Antacids Can Be Taken.</p> <p>Consult A Gastroenterologist</p>
Glucose Intolerance (High Blood Glucose Levels)	<p>Use A Dipstick Test To Check Your Urine For Glucose During Clinic Appointments. Check To See If There Has Been A Rise In Thirst Or Urine Production. Every year, a blood test should be conducted to check for the emergence of type II diabetes and other steroid-related issues.</p>	<p>If Urine Tests Or Symptoms Are Positive, Additional Blood Testing Can Be Required.</p>
Cataracts	<p>Annual Eye Exam To Look For Cataracts</p>	<p>Think About Moving From Deflazacort To Prednisone If Vision-Impairing Cataracts Develop. Consult An Ophthalmologist. Treatment For Cataracts Is Only NecessaryIf They Obstruct Vision.</p>
Gastritis/ Reflux Gastroesophageal	<p>Look Out For Reflux Symptoms (Heartburn)</p>	<p>Steer Clear Of Non-Steroidal AntiInflammatory Medicines (Nsaids), Including Ibuprofen, Naproxen, And Aspirin. You Can Use Antacids For Symptoms.</p>

OVERCOME

- Preventing adverse drug reactions.

Avoiding negative medication effects. Both immediate and delayed nausea and vomiting brought on by chemotherapy and radiation therapy can be effectively prevented and treated with corticosteroids, which are frequently used in supportive care. When moderate or high emetogenic chemotherapy is employed, they are utilized in conjunction with neurokinin-1 receptor and serotonin 5-HT₃ receptor antagonists. Because corticosteroids also have antiallergic qualities, they are advised for the prevention and management of drug-infusion responses, including cytokine release/hypersensitivity reactions and anaphylaxis. To treat infusion responses, 1-2 mg/kg intravenous doses of prednisolone equivalent are recommended every 6 hours. Corticosteroids are usually used in conjunction with docetaxel, paclitaxel, etoposide, and asparaginase as a preventative measure against hypersensitivity responses. For spinal radiotherapy pain flare-ups and brain edema brought on by radiation, corticosteroids work well.

- Reduce your risk of corticosteroid side effects

Ask your doctor about experimenting with lower dosages or sporadic dosing to achieve the maximum benefit from corticosteroid medications with the least amount of danger. Modern corticosteroids are available in different potencies and durations of action. Consult your doctor about taking oral corticosteroids every other day rather than every day or about taking short-term, low-dose drugs. Discuss moving to nonoral corticosteroid formulations with your healthcare practitioner. For instance, asthmatic inhaled corticosteroids directly reach the lung surfaces. This lessens their exposure to the rest of your body and could result in fewer adverse effects. Find out from your doctor if you need to take vitamin D and calcium supplements. Osteoporosis, or thinning bones, can result after long-term corticosteroid treatment.

To assist protect your bones, discuss with your healthcare professional the possibility of taking vitamin D and calcium supplements. Be cautious when stopping treatment. Your adrenal glands may create fewer natural steroid hormones if you use oral corticosteroids for an extended period of time. Your doctor may gradually lower your dosage to allow your adrenal glands to regain this function. Reducing the dosage too soon could cause weariness, body aches, and lightheadedness since your adrenal glands won't have time to recuperate. Put on a medical alert wristband. If you have been using corticosteroids for a long time, you should get this or a comparable identification. See your doctor on a regular basis. See your doctor frequently to monitor for adverse effects if you're on long-term corticosteroid treatment.

CONCLUSION

Although corticosteroids are incredibly useful drugs for treating a wide range of autoimmune and inflammatory diseases, long-term use of these drugs entails serious side effect risks. In order to maximize patient outcomes, healthcare practitioners must assess these risks against the advantages of treatment and put in place the proper monitoring and management techniques. It is feasible to reduce the negative effects of long-term therapy on patient health and well-being by encouraging a cooperative approach between patients and clinicians and encouraging the prudent use of corticosteroids.

Our research underlined the need for greater information on patients who are on long-term corticosteroid medication. Patients have expressed a desire for more dependable, accessible, recurrent, individually-adapted, and unbiased information in their own words.

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