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## Understanding the Dangers of Long-term Corticosteroid Use – Dr Hidayatul Radziah Ismawi

by [Hidayah](#) • July 17, 2024 • [0 Comments](#)



Corticosteroids are a class of steroid hormones that are produced in our adrenal cortex. They can also be synthetically manufactured and used as medications. Corticosteroids are involved in a wide range of physiological

processes, including stress response, immune response, inflammation regulation, carbohydrate metabolism, protein catabolism, blood electrolyte

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levels, and behaviour.

## Types of Corticosteroids

**Glucocorticoids:** These include cortisol and synthetic drugs like prednisone, which influence carbohydrate, fat, and protein metabolism and have significant anti-inflammatory effects.

**Mineralocorticoids:** These include aldosterone, which helps regulate blood pressure and electrolyte balance.

## Uses of Corticosteroids

Corticosteroids are used to treat a variety of conditions due to their potent anti-inflammatory and immunosuppressive properties, including asthma and other respiratory diseases, allergic reactions and autoimmune diseases like lupus and rheumatoid arthritis. It is also used for treatment of skin conditions such as eczema and psoriasis. Corticosteroids are also prescribed to prevent organ rejection after a transplant.

## Potential side effects after long-term use

Corticosteroids are powerful medications with significant benefits for many conditions but also carry the risk of serious side effects, particularly with prolonged use. Here are some of the side effects.

- *Masking disease conditions*

Corticosteroids can alleviate the symptoms of the disease without addressing the underlying cause. This can provide temporary relief, but it also means that the root cause of the symptoms may remain undiagnosed and untreated. As a result, the disease can continue to progress silently, potentially leading to more severe health issues down the line.

- *Suppression of body defence mechanism*

Continued use of corticosteroids can significantly suppress the body's defence mechanisms through immune system suppression, impaired inflammatory response and reduced antibody production. Corticosteroids decrease the production and function of white blood cells, which are crucial for fighting infections. This suppression can weaken the body's ability to combat bacteria, viruses, fungi, and other pathogens. They also inhibit the production and release of cytokines, which are signaling proteins that play a critical role in the immune response. This inhibition reduces inflammation but

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also diminishes the body's ability to respond to infections and injuries. Suppression of inflammatory pathways can result in delayed wound healing, making the body more susceptible to prolonged infections and complications.

- Metabolic effects of continued corticosteroids use

Prolonged corticosteroid use leads to osteoporosis caused by decreased bone formation due to inhibition of osteoblasts and reduction in growth factors. Corticosteroids inhibit the activity and proliferation of osteoblasts, the cells responsible for bone formation. This leads to a decrease in new bone synthesis. There is also an increase in bone resorption due to increase in osteoclast activity.



Another metabolic effect of prolonged corticosteroid use is Cushing's Syndrome. Cushing's Syndrome is characterised by several features such as central obesity, moon face and buffalo hump. Skin changes including thinning of skin that easily bruises and purple striae or stretch marks. Patients also experience muscle weakness in the upper arms or thighs. These patients may also have hyperglycemia (high blood sugar), hypertension and hyperlipidemia. They may also present with psychiatric symptoms such as mood swings and cognitive impairment.

Although corticosteroids are useful to treat multiple conditions, it is crucial for healthcare providers to carefully monitor patients on long-term corticosteroid therapy and implement strategies to mitigate these risks. Patients should be educated about the potential side effects and the importance of adhering to prescribed treatments and follow-up appointments to ensure optimal health outcomes.

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