

Prednisolone / Prednisone

AVAILABLE IN
5 mg & 20 mg TABLETS
(PREDNISOLONE)

1 mg, 2.5 mg, 5 mg, 10 mg, 20 mg, & 50 mg
TABLETS
and ORAL SYRUP
(PREDNISONE)

USES OF THIS MEDICATION

Prednisone and prednisolone are members of the **glucocorticoid** class of hormones. This means they are steroids but, unlike the anabolic steroids that we hear about regarding sports medicine, these are "catabolic" steroids. Instead of building the body up, they are designed to break down stored resources (fats, sugars and proteins) so that they may be used as fuels in times of stress. Glucocorticoid hormones are produced naturally by the adrenal glands to prepare us metabolically for physical exercise and stress. **Cortisone** would be an example of a related hormone with which most people are familiar.

Despite the body's natural use for glucocorticoids, we rarely use these hormones for their influences on glucose and protein metabolism (though sometimes we do). Instead, we use them mostly because they are also the most broadly anti-inflammatory medications available. On top of that, at higher doses they are not just anti-inflammatory but actually immune-suppressive. Their uses fit into several groups:

- **Anti-inflammatory** (especially for joint pain and itchy skin)
- **Immune-suppression** (treatment of conditions where the immune system is destructively hyperactive)
- **Cancer Chemotherapy** (especially in the treatment of lymphoma and mast cell tumors)
- **Central Nervous System Disorders** (usually after trauma or after a disk episode to relieve swelling in the brain or spinal cord or more chronically in the event of a brain tumor.)
- Replacement of glucocorticoids in the event of a deficiency (hypoadrenocorticism).
- **Blood Calcium Reduction** (in medical conditions where blood calcium is dangerously high, treatment is needed to reduce levels to normal)
- Prednisone can also be used for its ability to mobilize sugar in treatment of insulin secreting tumors or metabolic conditions associated with low blood sugar.

Prednisone is activated by the patient's liver to prednisolone. In general, these medications are considered interchangeable in dogs but cats seem to have less efficient activation mechanisms. These factors plus general availability issues with manufacturers have contributed to recent increases in the use of prednisolone over prednisone.

SIDE EFFECTS

Prednisone & prednsolone have activity in the kidney leading to the conservation of salt. This creates the classical side effects of prednisone/prednisolone use: **excessive thirst** and **excessive urination**. If this occurs, another steroid can be selected or the predisone/prednisolone dose can be dropped. The increased salt retention could be a problem for patients with congestive heart failure.

Prednisone/prednisolone are commonly used for several weeks or even months at a time to get a chronic process under control. It is important that the dose be tapered to an every other day (or less) schedule once the condition is controlled. The reason for this is that body will perceive these hormones and not produce any of its own. In time, the adrenal glands will atrophy so that when the medication is discontinued, the patient will be unable to respond to any stressful situation. An actual blood sugar crisis can result. By using the medication every other day, this allows the body's own adrenal glands to remain active.

Any latent infection can be unmasked by prednisone use. (Feline upper respiratory infections would be a classical example. When a cat recovers clinically, the infection simply goes dormant. Glucocorticoid use could bring the infection out again.) Long term prednisone/prednisolone use is associated with increased risk for latent bladder infection, especially in dogs. Upper respiratory infections and even bladder infections are usually readily controlled. If a more serious infection, such as an internal fungal infection, is present, corticosteroids could bring it out leading a potentially life-threatening situation.

Glucocorticoids will interfere with intradermal skin testing for allergy as well as with thyroid function testing.

Glucocorticoid hormone use can be irritating to the stomach at higher doses.

At high enough doses prednisone/prednisolone creates a state of higher than normal blood sugar levels. It is possible for a patient on the verge of developing diabetes mellitus to be tipped into a diabetic state. This is usually a problem though for stronger steroid hormones and one reason to select prednisone/prednisolone for long term use is to attempt to minimize the risk of developing diabetes mellitus. Still, one would avoid using prednisone/prednisolone in a patient with existing diabetes mellitus if it is at all possible to do so.

Panting (in dogs) is a well described side effect.

Glucocorticoids can increase appetite and are sometimes used for their appetite stimulating properties. They also raise blood cholesterol levels and increase circulating fats.

INTERACTIONS WITH OTHER DRUGS

Glucocorticoid hormones should not be used in combination with medications of the NSAID class (ie aspirin, carprofen, deracoxib etc.) as the combination of these medications could lead to bleeding in the stomach or intestine. Ulceration could occur.

Furosemide, a diuretic, combined with prednisone/prednisolone can lead to significant depletion of potassium from the body.

CONCERNS AND CAUTIONS

The goal in therapy with glucocorticoids is to find the lowest effective dose. This usually means gradually tapering the frequency of administration and/or dose of medication over time until the lowest effective dose is determined.

Prednisone and prednisolone are considered to be intermediate acting steroids, meaning that a dose lasts about a day or a day and a half. After two weeks or more of use, it is important to taper the dose to an every other day schedule so as to keep the body's own cortisone sources able and healthy.

The same salt retention that accounts for the excessive thirst and urination may also be a problem for heart failure patients or other patients who require sodium restriction..

Diabetic patients should never take this medication unless there is a life-threatening reason why they must.
Glucocorticoid hormones can cause abortion in pregnant patients. They should not be used in pregnancy.

Prednisone/Prednisolone use is likely to change liver enzyme blood testing and interfere with testing for thyroid diseases.

When prednisone/prednisolone is used routinely, serious side effects would not be expected.

When doses become immune-suppressive (higher doses) or use becomes "chronic" (longer than 4 months at an every other day schedule), the side effects and concerns associated become different.

In these cases, monitoring tests may be recommended or, if possible, another therapy may be selected.

Store prednisone/prednisolone tablets at room temperature, protected from light.

If a dose is accidentally skipped, do not double up on the next dose. Do not abruptly discontinue this medication; expect a tapering schedule to be needed.

Last revised: 8/6/2021



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