

Steroid Therapy: Side effects and management

What are steroids?

Steroids are hormonal substances naturally produced in the body by the adrenal glands. The normal role of steroids includes influencing many body systems including metabolism, inflammatory, allergic and normal immune responses.

Despite existing naturally in our bodies, steroids can also be synthetically (man) made and used to help treat a range of diseases and medical conditions. The type of steroid used to help treat myeloma is called 'glucocorticoids' but we tend to just call them 'steroids'. The most commonly prescribed steroids used in myeloma are *dexamethasone* and *prednisolone*.

Why are steroids used to manage myeloma?

- Actively kill myeloma cells.
- Help increase the efficacy of other anti myeloma therapies.
- Reduce inflammation often associated with myeloma bone disease and thereby reducing bone pain.
- Help reduce symptoms of nausea associated with chemotherapy.
- Manage hypersensitivity (allergic) reactions to medications or to blood products given.

Steroids (dexamethasone and prednisolone) form the foundation of most treatment regimens for myeloma. Steroids can be used on their own but more commonly are used in combination with other drugs such as chemotherapy, *Thalidomide*, *Lenalidomide (Revlimid)* or *Bortezomib (Velcade)*. During the course of the disease, people are likely to receive multiple courses of steroids.

How are steroids given?

Steroids can be given either in tablet form or intravenously (into the vein – IV). Tablets should be taken with food or milk to help protect the lining of the stomach from irritation. As the doses used in myeloma are often high, several tablets may have to be taken at once. The doses and length of treatment with steroids will vary between individuals and different treatment schedules.

What is the difference between different types of steroids used in myeloma?

Dexamethasone is very effective at killing myeloma cells when used in high doses. The side effects associated with high dose dexamethasone can be difficult to tolerate for some patients and it may be necessary for the dose to be adjusted to a level that is better tolerated.

Prednisolone is also effective at killing myeloma cells but the side effects associated with prednisolone are generally less severe in most patients. Prednisolone can be more easily tolerated, particularly in the frail or elderly.

What potential side effects are associated with steroid use?

The severity and type of side effects related to steroids can vary between individuals. The number of side effects often increases with higher doses, extended treatment periods and increased age. It is important to remember that side effects, if any, are temporary, and can often be prevented or managed and should resolve when the steroids are stopped.

Less common side effects: include cataract formation, changes affecting hair, changes in taste, hiccoughs (or hiccups), thinning of skin, changes in sexual function, or a moon face appearance. More common side effects are listed in the following table.

Common side effects	Suggested management
Stomach pain <ul style="list-style-type: none"> • Indigestion • Heart burn 	<input type="checkbox"/> • Take steroids with or after food / milk. <input type="checkbox"/> • May require antacids or other medication to help prevent stomach irritation.
Increased blood sugars	<input type="checkbox"/> • May require more frequent blood sugar monitoring if diabetic.
Increased risk of infection <ul style="list-style-type: none"> • Can suppress immune system, particularly in high doses or long term use 	<input type="checkbox"/> • Be aware of signs and symptoms of infection such as temperature >38°C, productive cough, area of swelling or inflammation. <input type="checkbox"/> • Report symptoms of infection to your medical team the day they occur.
Mood changes <ul style="list-style-type: none"> • Mood swings • Personality changes • Anxiety • Irritability, difficulty concentrating • Tearfulness 	<input type="checkbox"/> • Can be more apparent when taking high doses and alternating between periods on and off steroids (pulse dosing). <input type="checkbox"/> • If severe / intolerable – may require dose reduction or change in scheduling. <input type="checkbox"/> • Some find keeping physically active helps ‘work off’ the extra energy caused by steroids.
Energy changes <ul style="list-style-type: none"> • Hyperactivity • Insomnia • Let down effect (withdrawal effect – feeling low in mood and energy on days following steroids) 	<input type="checkbox"/> • Take in the morning to help reduce impact on sleep. <input type="checkbox"/> • Learning to ‘pace’ & ‘plan’ around expected effects, can help. <input type="checkbox"/> • May require dose reduction if difficult to tolerate. <input type="checkbox"/> • May require tapering of steroid dose if experiencing severe ‘let down effect’.
Muscle weakness	<input type="checkbox"/> • Maintain physical activity and exercise as tolerated to avoid compounding the problem.
Increased appetite	<input type="checkbox"/> • If occurs, try adopting healthy snacking to avoid weight gain.
Fluid retention <ul style="list-style-type: none"> • Swollen feet, lower limbs or around the abdomen 	<input type="checkbox"/> • Elevate lower limbs when at rest. <input type="checkbox"/> • Maintain physical activity and exercise to help minimise fluid retention. <input type="checkbox"/> • May require diuretics to help reduce severity.
Blurred vision	<input type="checkbox"/> • If occurs, often associated with the days of taking steroid.
Flushing and sweating	<input type="checkbox"/> • If occurs, often associated with the days of taking steroid.

What can be done to manage and minimise the side effects associated with steroids?

Being aware of the range of side effects associated with steroid therapy can help you cope better with the symptoms if they occur. Side effects related to steroids often follow a very predictable pattern. Identifying the side effects early and managing them appropriately can contribute to more successful treatment and ultimately improved quality of life. It is important to remember that side effects, if any, are temporary, and can often be prevented or managed and should resolve when the steroids are stopped.

Most people find that any side effects they experience related to steroids are manageable once they have learnt the pattern of side effects and plan ways to adapt their lifestyle to manage them.

Practical Strategies
Learning the rhythm of side effects over a treatment cycle or period of time can be helped by keeping a side effect / symptom journal.
Skin can become thin and tear easily whilst on steroids. Take particular care to avoid scratches or cuts to the skin, particularly around pets or in the garden. Due to the increased risk of infection, be sure to clean and cover any cuts should they occur.
Some people may require a calmativ e or sleeping tablet on the days they take their steroids. Discussing the options with a doctor will help establish if this would be useful.
Adapt lifestyle and activities around the steroid schedule, noting times of increased energy or positive mood on the days taking steroids and periods of low energy, low mood on the 2 to 3 days following steroids.
Inform family/friends of potential steroid effects so they are aware of potential mood and energy changes.
If mood or energy changes caused by steroids are intolerable and impact your ability to function, don't hesitate to inform your doctor so the dose or schedule of steroids can be appropriately adjusted.
Beyondblue have a range of information resources for managing insomnia and mood changes www.beyondblue.org.au

The goal of treatment is to seek a balance between the benefits of the steroids against the myeloma, and the ability to tolerate any side effects. Dose reductions of steroid medication are commonly required when people are finding high dose steroids difficult to tolerate. It is important to inform the doctor if side effects are unexpected or troubling as doses and schedules can be adjusted to help minimise effects.

Further information resources

Not for profit organisations providing a range of programs and services to help support people affected by myeloma. A comprehensive range of information is available online from these sites to download free of charge.

Myeloma UK (steroids info sheet) International Myeloma Foundation (Publications: understanding dexamethasone and other steroids)	www.myeloma.org.uk www.myeloma.org
Cancer Council (Meditation & Relaxation CDs)	www.cancercouncil.com.au
National Prescribing Service: Independent not for profit, evidenced based, organisation that provides useful tools and information about medicines, including steroids.	www.nps.org.au 1300 MEDICINE (1300 633 424)

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The information in this fact sheet is not intended to replace medical care or the advice of a physician. Your doctor should always be consulted regarding diagnosis and treatment.

For further information please contact one of our Myeloma Support Nurses
on our Support Line:
1800 MYELOMA (1800 693 566)
or visit our website: www.myeloma.org.au