



INHALED CORTICOSTEROIDS IN ASTHMA

by Drs. Brandie Walker and Richard Leigh, Division of Respiratory Medicine, University of Calgary

Inhaled corticosteroids, sometimes referred to as inhaled steroids, are the best medication to manage asthma. Inhaled corticosteroids are strong anti-inflammatory (anti-swelling) medications. People with asthma have swelling in the airways of their lungs, causing the airways to become more sensitive to asthma triggers such as allergens, dry air, smoke and viruses. Inhaled steroids reduce swelling, which improves symptoms, lung function and airway hyper-reactivity ('twitchiness'). A recent Canadian study (1) has shown that regular use of inhaled corticosteroids lowers the risk of death from asthma. The following are examples of inhaled corticosteroids commonly used:

- ✚ **Inhaled Corticosteroids:** Alvesco (ciclesonide), Arnuity (fluticasone furoate), Asmanex (mometasone), Flovent (fluticasone), Pulmicort (budesonide), Qvar (beclomethasone)
- ✚ **Combination Inhaled Corticosteroid/long-acting beta agonists:** Advair (fluticasone and salmeterol), Breo (fluticasone and vilanterol), (Symbicort (budesonide and formoterol), Zenhale (mometasone and formoterol)

HOW SHOULD I USE MY INHALED CORTICOSTEROID MEDICATION?

Good asthma management includes proper use of medications. The main purpose of inhaled corticosteroids is to reduce or prevent airway swelling and asthma flare-ups, and these medications are known as *preventers* for this reason. They should be used on a regular, daily basis as instructed by your physician, even if you are feeling well. **To get the maximum benefit, inhaled corticosteroids should be used as directed by your doctor, and with good inhaler technique.** The anti-swelling action happens gradually over days or weeks, when the medication is used regularly. Inhaled corticosteroids do not work for **quick** relief of asthma symptoms like cough, wheeze, chest tightness or shortness of breath, and instead a *reliever or bronchodilator medication* should be used.

WHAT ARE THE SIDE EFFECTS OF INHALED CORTICOSTEROIDS?

Inhaled corticosteroids have been the best treatment for asthma for more than 30 years. They are among the safest and most effective means to treat asthma. Although few side effects occur at standard doses (one to two puffs twice a day for most inhalers), some people may experience minor side effects such as hoarseness of the voice, and thrush (a yeast infection of the mouth and throat). Rinsing your mouth, or brushing your teeth after taking your medication, and using a spacer device with the aerosol puffer will decrease the chance of side effects. Children who have asthma can use inhaled corticosteroids safely over the long term. A recent review of many studies has shown that rarely children may grow up to half a centimeter less during their first year of treatment, but that this effect on height is smaller over time, and is minor compared to the benefits of well controlled asthma². In rare instances inhaled corticosteroids at high doses have caused low cortisol levels ("adrenal insufficiency"), which can cause symptoms of fatigue, nausea and vomiting, and requires medical attention if suspected³.

WHAT ABOUT ATHLETES WHO ARE BANNED FOR USING STEROIDS?

Inhaled corticosteroids are not related to anabolic steroids that are used by some athletes to enhance their performance. The regular use of inhaled corticosteroids does not increase muscle mass or cause any of the other side effects associated with anabolic steroids. None of the inhaled corticosteroids commonly used to treat asthma are banned by the International Olympic Committee, and they can be safely used in all forms of competitive sport.

WOULDN'T IT BE EASIER TO TAKE CORTICOSTEROID TABLETS?

Some patients with more severe asthma may need treatment with oral corticosteroid tablets (prednisone), but most people can manage their asthma very well with inhaled corticosteroids. Inhaled corticosteroids have a great advantage over prednisone tablets because the medication is inhaled directly into the lungs, with less absorption by the rest of the body. This helps to lower the chance of any potential side effects, making inhaled corticosteroids among the safest and most effective way to manage asthma.

CONCLUSION

Inhaled corticosteroids used with proper inhaler technique are very effective for treating asthma. They are safe and should be considered the first choice in asthma management for most cases of asthma.

REFERENCES

1. Suissa S, Ernst P, Benayoun S, Baltzan M, Cai B. Low-dose inhaled corticosteroids and the prevention of death from asthma. *N Engl J Med* 2000;343:332-6.
2. Pruteanu AI, Chauhan BF, Zhang L, Prietsch SO, and Ducharme FM. Inhaled corticosteroids in children with persistent asthma: dose-response effects of growth. *Cochrane Database Syst Rev*. 2014 Jul 17;7.
3. Lapi F, Kezough A, Suissa S, and Ernst P. The use of inhaled corticosteroids and the risk of adrenal insufficiency. *ERJ* July 1, 2013 vol 42 no 1.

The Community Pediatric Asthma Service has designed this material for information purposes only. It should not be used in place of medical advice, instruction and/or treatment. If you have specific questions, please consult your doctor or appropriate healthcare professional.