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Inhaled corticosteroids in asthma

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Inhaled corticosteroids, sometimes referred to as inhaled steroids, are the current cornerstone of asthma therapy. They are indicated in all but the mildest cases of asthma. Some patients with more severe asthma may require treatment with oral corticosteroid tablets (prednisone), but the vast majority of people with asthma can be effectively treated with inhaled steroids.

Would it not be easier to take corticosteroid tablets?

Inhaled corticosteroids have an enormous advantage over prednisone tablets in that the medication is deposited directly into the lungs, where it is required, with minimal absorption by the body. This ensures that inhaled corticosteroids are associated with very few side effects. Inhaled corticosteroids are among the safest and most effective means currently available to treat asthma, and are the focus of this information sheet.

But what about athletes who are banned for using steroids?

Inhaled corticosteroids are *not* related to the anabolic steroids that are misused 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 the anabolic steroids used by some athletes. None of the inhaled corticosteroids commonly used to treat asthma (see list below) are prohibited by the International Olympic Committee, and they can be safely used in all forms of competitive sport.

Inhaled corticosteroids: What are they and how do they work?

Inhaled corticosteroids are considered to be potent anti-inflammatory medications. People with asthma have inflamed airways, and this inflammation causes the airways to become more sensitive to various asthma triggers such as allergens, dry air, smoke and viruses. Inhaled steroids effectively reduce airway inflammation, thereby dramatically improving symptoms, lung function and airway hyper-reactivity ('twitchiness'). Furthermore, a recent Canadian study (1) has shown that regular inhaled corticosteroid use reduces the risk of death from asthma.

The following medications are examples of inhaled corticosteroids that are commonly prescribed:

- beclomethasone (Vanceril, Schering Canada Inc, Canada; QVAR, 3M Pharmaceuticals/McNeil Consumer Healthcare, Canada)
- budesonide (Pulmicort Turbuhaler, AstraZeneca Canada Inc, Canada)
- flunisolide (Bronalide, Boehringer Ingelheim Canada Ltd, Canada)
- fluticasone (Flovent, GlaxoSmithKline, Canada)
- triamcinolone (Azmacort, Aventis Pharma Inc, Canada)

- fluticasone is also marketed in combination with the long acting bronchodilator salmeterol (Advair Diskus, GlaxoSmithKline, Canada)
- budesonide will shortly be available in combination with the long acting bronchodilator formoterol (Symbicort Turbuhaler, AstraZeneca Canada Inc, Canada)

How should I use my inhaled corticosteroid medication?

Managing your asthma successfully requires the proper use of prescribed medications. The main purpose of inhaled corticosteroids is to reduce or prevent airway inflammation. Inhaled corticosteroids are thus sometimes known as *preventers*, and they should be used on a regular, daily basis as instructed by your physician, even if you are feeling well. This statement is worth repeating; *inhaled corticosteroids must be used regularly* to be effective.

Inhaled corticosteroids are used to treat airway inflammation and thus prevent asthma flare-ups. The anti-inflammatory actions of inhaled steroids occur over days or weeks, and they do not have immediate effects. This means that they have *no benefit* when an effect is needed immediately. In this case, *bronchodilators*, also called *relievers*, should be used for the immediate relief of symptoms.

What are the side effects of inhaled corticosteroids?

Inhaled corticosteroids have been used as a successful treatment for asthma for more than 20 years. They are among the safest and most effective means that exist to treat asthma. Although few side effects occur at standard doses (one to two puffs twice per 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) from using corticosteroid inhalers. Such problems can be minimized by rinsing your mouth after taking the medication (this is easy to do if you use your inhaler just before brushing your teeth) and using a spacer device. Your doctor or nurse educator can provide further information on this.

Children who have asthma can use inhaled corticosteroids safely over the long term. Two studies published in the prestigious *New England Journal of Medicine* last year (2,3) reported that inhaled corticosteroids do *not* stunt children's growth and are not associated with any other major side effects.

Conclusion

Corticosteroids, when taken properly, are a very effective method for the treatment of asthma. They are safe and should be considered to be the cornerstone of asthma therapy for all but the mildest cases of asthma.

Sources of information on asthma treatment

Several Web sites provide information on asthma treatment, including the following:

- Canadian Lung Association – www.lung.ca/asthma
- Asthma Society of Canada – www.asthma.ca
- American Academy of Asthma, Allergy & Immunology – www.aaaai.org
- British Lung Foundation – www.lunguk.org
- American Lung Association – www.lungusa.org/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. Agertot L, Pedersen S. Effect of long-term treatment with inhaled budesonide on adult height in children with asthma. *N Engl J Med* 2000;343:1064-9.
3. The Childhood Asthma Management Program Research Group. Long-term effects of budesonide or nedocromil in children with asthma. *N Engl J Med* 2000;343:1054-63.

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