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WHAT YOU SHOULD KNOW ABOUT STEROIDS

Sometimes patients with allergies or asthma require treatment with cortisone-derived medications called steroids. These potent anti-inflammatory medicines are uniquely capable of breaking the cycle of inflammation. They can be used in two ways: systemic (oral or by injection) or topical (sprays, inhalers, or creams). Because these medications can have uncomfortable or even dangerous side effects (especially systemic steroids), you should understand several key facts about steroids.

First, steroids are used only when necessary. They are especially helpful where inflammation is either acutely threatening (such as a severe asthma attack) or unlikely to respond to other medications quickly enough. A physician will generally use steroids only when the potential risk of the condition outweighs the risks of steroid therapy, and no good alternatives exist.

Systemic steroids can be used in two ways: short-term (a “burst”) or long-term (“maintenance”). Side effects from a short-term burst are generally mild but may include the following:

- Increased appetite
- Depression, euphoria, insomnia, or other psychological symptoms
- Weight gain and fluid retention
- Facial swelling
- Acne
- Indigestion and stomach aches
- Menstrual irregularities
- Temporary hair thinning after stopping steroids

When long-term steroids are necessary, other more serious side effects can occur:

- Ulcers
- Glucose intolerance (like diabetes) or difficulty controlling existing diabetes
- Osteoporosis (brittle bones)
- Suppression of the adrenal gland
- Damaged hip bones (hip necrosis)
- Pancreatitis (inflammation of the pancreas)
- Immune suppression (difficulty fighting infections)
- Atherosclerosis
- Easy bruising or thinning of the skin; slow wound healing
- Increased hair growth
- Kidney stones
- Cataracts
- Growth suppression in children

Fortunately, these problems do not arise in all cases, and they are usually reversible after discontinuing or reducing the dose of steroids. To minimize the risk of side effects, the dose is always tapered to the lowest effective dose or to every-other-day doses when feasible.

LONG-TERM STEROID PRECAUTIONS

All patients requiring long-term or frequent courses of steroids should understand a potential complication called **adrenal suppression**. The adrenal gland normally secretes steroid hormones which help the body deal with stresses such as infections, injuries, or operations. The gland's ability to secrete these hormones is reduced by steroid medications, so if you suddenly stop taking them or are physically stressed by surgery, for example, your body may be unable to cope. Unless you take supplemental steroids during this time, you could have a serious reaction called an adrenal crisis. This is avoidable if you have a Medic-Alert bracelet or pendant stating "steroid-dependent" to notify medical personnel if you are unable to speak for yourself.

Since adrenal suppression can begin within several weeks of starting systemic steroids, you should never stop "cold turkey". Always discuss a gradual taper with your physician.

Another potential complication is **cataracts**, a haziness of the lens of the eye which can be treated surgically. You should have an eye examination by an ophthalmologist every six to twelve months to watch for this problem.

Steroids can *intensify* certain **infections**, especially measles and chicken pox. Since there are effective therapies, you should contact your doctor if you or your child is exposed to either of these infections while taking systemic steroids. Steroids can also *activate* latent infections such as tuberculosis, hepatitis, HIV, or parasites. You should have a TB test if possible before starting steroids and discuss any previous infections with your doctor. Finally, steroids can *mask* infection, so if you develop a fever over 101 degrees while taking systemic steroids, you should see your physician immediately or go to the emergency room.

The most important complication of long-term systemic steroids is **osteoporosis**, a loss of bone calcium that leads to increased risk of fracture. Tests of bone density can help monitor the degree of osteoporosis and guide treatments such as calcium supplements, vitamin D, weight-bearing exercises, hormone replacement therapy, and several new calcium-restoring medications. A rare but serious complication is avascular necrosis of the hip, a permanent injury to the hip bones which may require surgical hip replacement.

TOPICAL STEROIDS

One way of administering steroids greatly reduces or eliminates side effects: the topical route. "Topical" means applying the medicine directly to the membrane surface where it is needed. Topical steroids have been used for years in the form of creams or lotions for skin diseases. We now routinely use topical steroids in the form of sprays or inhalers for hay fever or asthma. The most common side effects of inhaled steroids are occasional hoarseness or a "yeast" infection in the mouth. Using a spacer device and rinsing the mouth after use help reduce these minor complications. In higher doses or with prolonged therapy, inhaled steroids may slightly increase the risk of cataracts, worsening glaucoma, and possibly osteoporosis.

While studies are conflicting, some suggest that high-dose inhaled steroids may also slow growth velocity in some children. While this is a legitimate concern, it's important to keep four facts in mind:

- The evidence is clear that poorly-controlled asthma itself impairs growth
- For most patients, inhaled steroids are highly effective at low to moderate doses, which have not been shown to have significant adverse effects. For the rare child who requires high-dose inhaled steroids, the alternatives are usually much worse: systemic steroids or poorly-controlled asthma
- Most studies show that children treated with inhaled steroids ultimately achieve normal adult height
- Not only are inhaled steroids the most effective treatment for asthma, they are the only medications capable of preventing or reversing airway remodeling, an asthma-related change in airway structure that may lead to future irreversible airflow obstruction

This information about steroids should not scare you off, although you should take the decision to use steroids seriously. It is important to remember that steroids are extremely powerful medications that can dramatically improve many stubborn or serious diseases. While they have undeniable potential for side effects, their careful use usually represents a net gain.