

## **What are corticosteroids?**

Corticosteroids are a class of medications that are related to cortisone. Medications of this class reduce inflammation powerfully. They are used to reduce inflammation caused by a variety of diseases associated with inflammation. Cortisone is one type of corticosteroid. For the purpose of this review, “cortisone” is used interchangeably with “corticosteroid.”

Corticosteroids can be taken by mouth, inhaled, applied to the skin, given intravenously (into a vein), or injected into the tissues of the body. Examples of corticosteroids include prednisone and prednisolone (given by mouth), solumedrol (given intravenously), as well as triamcinolone, kenalog, celestone, depomedrol and others (given by injection into body tissues). This article describes the role of cortisone injections into the soft tissues and joints.

### **“Is a cortisone injection merely a pain reliever or temporary remedy?”**

Corticosteroids are not pain relievers. They reduce inflammation. When corticosteroids relieve pain it is because they have reduced inflammation.

While the inflammation for which corticosteroids are given can recur, corticosteroid injections can provide months to years of relief when used properly. These injections also can cure diseases (permanently resolve them) when the problem is tissue inflammation localized to a small area, such as bursitis and tendinitis.

### **For what conditions are cortisone injections used?**

Cortisone injections can be used to treat the inflammation of small areas of the body (local injections) or they can be used to treat inflammation that is widespread throughout the body (systemic injections). Examples of conditions for which local cortisone injections are used include inflammation of a bursa (bursitis), a tendon (tendinitis), and a joint (arthritis). Systemic corticosteroid injections are used for conditions such as allergic reactions, asthma, and rheumatoid arthritis affecting many joints.

### **What are the advantages of cortisone injections?**

Cortisone injections can be administered easily in the doctor’s office. Other advantages include the rapid onset of the medication’s action, dependability, and minimal side effects. Another distinct benefit of a corticosteroid injection is that the relief of localized inflammation in a particular body area is more rapid and powerful than with traditional anti-inflammatory medications given by mouth such as aspirin. A single injection also can avoid certain side effects, notably irritation of the stomach that accompany many oral anti-inflammatory medications.

### **What are the disadvantages and side effects of cortisone injections?**

Disadvantages of cortisone injections are the necessity of piercing the skin with a needle as well as potential short and long term side effects. It should be emphasized that each of these side effects is possible, they usually do not occur.

Short term side effects are uncommon, but include shrinkage (atrophy) and lightening of the color (depigmentation) of the skin at the injection site, introduction of bacterial infection into the body, local bleeding from broken blood vessels in the skin or muscle, soreness at the injection site, and aggravation of inflammation in the area injected because of reactions to the corticosteroid medication (post injection flare). Tendons can be weakened by corticosteroid injections in or near tendons. Tendon ruptures as a result have been reported.

In persons who have diabetes, cortisone injections can elevate the blood sugar. In patients with underlying infections, cortisone injections can suppress somewhat the body’s ability to fight the infection and possibly worsen the infection or may mask the infection by suppressing the symptoms and signs of inflammation. Generally, cortisone injections are used with caution in persons with diabetes and avoided

in persons with active infections. Cortisone injections are used cautiously in persons with blood clotting disorders.

Long-term side effects of corticosteroid injections depend on the dose and frequency of the injections. With higher doses and frequent administration, potential side effects include thinning of the skin, easy bruising, weight gain, puffiness of the face, elevation of blood pressure, cataract formation, thinning of the bones (osteoporosis), and a rare but serious damage to the bones of the large joints (avascular necrosis).

### **Are there special advantages in using cortisone injections for joint inflammation (arthritis)?**

Cortisone injections into a joint can be beneficial in rapidly reducing joint pain while restoring function to a body part immobilized by inflammation and pain, such as the knee or elbow. This might be particularly important in certain circumstances, such as the gainful employment of a family bread-winner or someone who lives alone. Despite potential and infrequently reported adverse reactions as described above, it is generally felt that low intermittent doses of corticosteroids pose little risk of significant side effects.

Cortisone injections into a joint also can decrease the inflammation in diseased joints throughout the body when the corticosteroids are absorbed from the joint into the circulation.

### **Are there special side effects that can occur with cortisone joint injections?**

Cortisone injections into a joint may have side effects in addition to those described above. Unique side effects of joint injections involve injury to the joint tissues, particularly with repeated injections. These injuries include thinning of the joint cartilage, weakening of the ligaments of the joint, increased inflammation in the joint (arthritis) due to a reaction to a corticosteroid that has crystallized, and introduction of infection into the joint.

### **How are cortisone injections of soft tissues given?**

The medical professional administering the injection draws up the corticosteroid into a syringe. A local anesthetic (such as lidocaine) may simultaneously be drawn into the syringe. Next, the area to be injected is selected. Typically, the skin over the area to be injected is sterilized with a liquid solution, either alcohol or betadine.

Sometimes, the area is topically anesthetized by rapid cooling using a spray such as ethyl chloride. The needle of the syringe then is inserted into the tissue to be injected and the solution is ejected from the syringe into the area of inflammation. The needle then is withdrawn, and a sterile bandage is applied to the injection site.

### **How are cortisone injections of a joint given?**

The method of administering a cortisone injection to a joint is similar to that of soft tissue injections. Betadine, however, is more commonly used for sterilization of the skin over the joint. Furthermore, if there is an excessive amount of fluid within the joint, it often is removed first with a separate syringe and needle prior to injection of the cortisone. Removal of this joint fluid allows the doctor to examine the fluid and submit a sample to the laboratory for diagnosis. Removal also rapidly relieves pain by reducing the pressure of the fluid within the joint. Finally, removal of fluid may expedite healing.

### **“I’ve always heard that cortisone injections are painful? Are they?”**

In an expert’s hands, the opposite is more often the case. That is, minimal pain from the procedure is noted while relief from the pain of the inflammation occurs rapidly. Occasionally, cortisone injections of joints that have degenerated (become damaged) or that are particularly small (such as finger joints) can be associated with temporary, minor pain at the time of the injection. This is not generally expected. Less frequently, nerves can be irritated, either directly by the needle during the injection or by the corticosteroid medication. Again, this is not common or anticipated.