



# Your Health Matters

## Steroid Induced Diabetes

### Introduction

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One of the most common side effects from steroids such as Prednisone, Decadron and Solumedrol is diabetes or high blood sugar. This condition is known as “steroid induced diabetes.” Steroids help to decrease inflammation and swelling. Steroids are used for many medical conditions, for example, asthma, inflammatory bowel disease, neurosurgery, and to prevent rejection of a transplanted organ. The effect of steroids on the blood sugar depends on the dose of the steroids. To treat steroid-induced diabetes, one may need to take insulin. As the steroid dose is adjusted, the dose of insulin will need to be adjusted. Consult your physician regarding your insulin dose or the dose for your diabetes pill when your steroid dose is changed.

### Cause of Steroid Induced Diabetes

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Steroids block insulin from working properly. Insulin is a hormone made by the pancreas. Insulin helps the sugar go inside the body cell so the sugar can be used for energy.

### Effects of Diabetes on the Transplanted Organ and the Body

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High blood sugars can cause dehydration. Dehydration can cause decreased blood flow to the transplanted organ. High blood sugar also increases the risk for infection because the infection fighting cells can't fight the germs as well when the blood sugar level is elevated. High blood sugars can also cause electrolyte imbalances.

### Symptoms of Steroid-Induced Diabetes

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High Blood Sugar- Above 200 mg/dl. Symptoms of high blood sugar:

- Extreme hunger
- Excessive thirst
- Unintentional weight loss
- Frequent urination
- Feeling tired
- Slow-healing wounds
- Tingling or numbness in hands or feet

- Skin infections
- Dry skin
- Blurred vision



**EXTREME THIRST**



**HUNGER**



**FREQUENT URINATION**



**NAUSEA**



**DROWSINESS**



**BLURRED VISION**

### **Low Blood Sugar – less than 70 mg/dl**

The cause of low blood sugar is too little food, skipping meals or too much insulin or diabetes pills, and excess exercise. Symptoms of low blood sugar:



**SHAKING**



**FAST HEARTBEAT**



**SWEATING**



**ANXIOUS**



**DIZZINESS**



**HUNGER**



**IMPAIRED VISION**



**WEAKNESS,  
FATIGUE**



**HEADACHE**

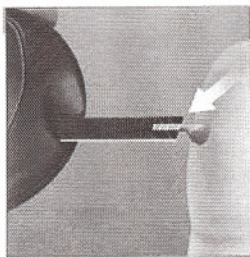


**IRRITABLE**

Treating a Low Blood Sugar- Take 15 grams of carbohydrates such as 4 oz of juice, or 15 skittle pieces, or 3 glucose tablets. Notify your doctor when you have a low blood sugar because your diabetes medicine may need to be adjusted.



## Controlling Your High Blood Sugar



### *Blood Sugar Testing*

You will be asked to test your blood sugar between meals and bedtime and to keep a written record of your blood sugar levels. The fingertips are the most accurate source of obtaining a blood sample. When testing yourself, use the sides of the fingers, as these areas are less sensitive and thus less discomfort. You want to keep your blood sugar between 80-180 mg.



### *Exercise*

Daily exercise is important. Exercise helps to decrease the blood sugar level, stimulate circulation and maintain healthy muscles. Exercise is also a good way counteract the muscle-wasting effects of steroids. Try to walk for at least half an hour to an hour everyday.

<b>Nutrition Facts</b>	
Serving Size 1 can (8 fl oz)	
<b>Amount Per Serving</b>	
<b>Calories 250</b>	Calories from Fat 50
% Daily Value*	
<b>Total Fat</b> 6g	9%
Saturated Fat 0.5g	3%
<b>Cholesterol</b> <5mg	<2%
<b>Sodium</b> 200mg	8%
<b>Potassium</b> 370mg	11%
<b>Total Carbohydrate</b> 40g	13%
Dietary Fiber 0g	0%
Sugars 18g	
<b>Protein</b> 9g	18%
Vitamin A 25% • Vitamin C 50% • Calcium 30% • Iron 25%	
*Percent Daily Values based on a 2,000 Calorie diet.	

### *Meal Planning*

Meal planning is an essential component of maintaining your blood sugar. Carbohydrates increase the blood sugar. Consult your dietitian to help you identify carbohydrates. Your dietitian can help you determine the correct amount of carbohydrates for your meal plan. Everything you drink should be sugar-free such as, water, crystal lite®, Diet Snapple, as liquid sugar rapidly raises your blood sugar level.

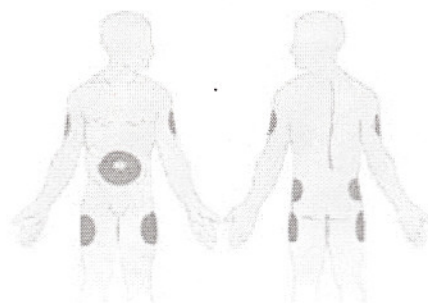
## Medicines Used To Control Steroid Diabetes

Medicines used to control blood sugar in diabetes are similar to those in steroid-induced diabetes. These medicines include blood-sugar lowering agents or hypoglycemic agents in the form of pills and insulin. Insulin is the best medicine for controlling blood sugar. There are different types of insulin for controlling your blood sugar. Below is a chart of the various types of insulin that are in use today.

Types of insulin currently available in the United States			
Type (classification)	Onset*	Peak*	Duration*
Humalog (lispro) (rapid-acting)	5-15 min.	0.5-1.5 hrs.	3-4 hrs.
Novolog (aspart) (rapid-acting)	10-20 mins.	0.5-1.5 hrs.	3-4 hrs.
Regular (short-acting)	0.5-1 hr.	2-3 hrs.	6-8 hrs.
NPH (intermediate-acting)	2-4 hrs.	6-10 hrs.	14-18 hrs.
Lantus (glargine)(long-acting)	1.1 hr.	Peakless	24 hrs.

## Giving Yourself Insulin

The diagram on the right shows you the various spots where you can give yourself insulin. The steps by steps procedure will assist you with the goal of giving yourself insulin. Insulin is administered subcutaneously.

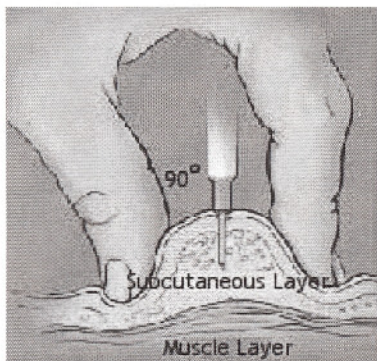


### *Insulin Preparation*

1. Wash your hands with soap and water.
2. Mix insulin by rolling bottle.
3. Clean the rubber stopper with alcohol swab.
4. Pull the plunger back to the number of units of insulin you are to take.
5. Holding the syringe by the barrel, push the needle through the rubber stopper and push plunger to inject air into bottle.
6. Leaving needle and syringe in place, turn the bottle upside down and start drawing the insulin by pulling the plunger to your dose.
7. Check for air bubbles. If there are bubbles, tap the syringe to remove the air bubbles. Recheck your dose.

### *Giving Yourself a Shot*

After you have prepared your insulin dose, you are now ready to give yourself your insulin shot. Although there are several areas where you can administer your dose, the abdomen is the best area because it is more comfortable (less painful), and easily accessible.



A subcutaneous injection into the fatty layer of tissue under the skin.

1. Select site and clean the skin with alcohol swab.
2. Pinch the skin into a mound.
3. Insert the needle at 90-degree angle making sure that the needle is all the way in. You might need to insert the needle at a 45-degree angle if you are very thin.
4. Release the pinch.
5. Inject the insulin dose by pushing the plunger all the way down.
6. Pull the needle straight out by holding the syringe by the barrel.
7. Press alcohol swab over the injection site
8. Properly dispose of syringe into a sharps collector.

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