



SORE FINGERS -- HOW TO PREVENT AND TREAT THEM

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This column focuses on providing information to help people make their diabetes care fit their needs and their lives.

"I would check my blood sugar more often, but my fingers are too sore."

As a diabetes educator, I have heard this statement from many hundreds of people. Self-monitoring of blood glucose (blood sugar) is a cornerstone of modern diabetes care. And right now, we still don't have any way to check blood glucose without using a drop of blood. So it's certainly true, if you check your blood glucose regularly, it is possible to make your fingertips really sore. And, of course, if your fingers are already sore, you are not going to want to poke them again to get one more drop of blood for one more check of your blood glucose.

But, it's also possible to check your blood glucose frequently without making your fingers sore. In fact, there are many people who do check their blood glucose frequently, and they don't have sore fingers. When this topic came up in a support group I was leading, one of the group members said: "I check my blood glucose at least four times every day. Many days, I check my blood sugar six or seven times. My fingers are not sore. And I personally don't take pain well."

So what is the difference? Through the years, I have heard many ideas for avoiding sore fingers. In this article I will discuss everything I can remember about them. I'll start with some definitions. Then, I'll list the steps you can take to avoid sore fingers, and why each of those steps might help. I'll discuss: getting the right equipment; choosing a less painful site for lancing; preparing the site to make the blood flow better; lancing your finger; getting a large-enough drop of blood; stopping the flow of blood; and what to do if your fingers are already sore.

Definitions

Most people who have had diabetes for a while will already know these definitions, but people with new diabetes may need the terms defined.

Alternate site -- A spot on the body other than the fingers that can be used to get a drop of blood for checking blood glucose. The most commonly used alternate sites are the arms and the legs.

Blood glucose -- Dissolved sugar in the blood. The term blood sugar is a less formal way to say the same thing.

Blood glucose meter -- a small, portable machine used by people with diabetes to check, or monitor, how much glucose is in their blood. After pricking the skin with a lancet, the person places a drop of blood on a test strip in the machine. The meter (or monitor) soon displays the blood glucose level as a number.

Lance -- to poke a small hole in the skin in order to get a drop of blood.

Lancet -- a small, pointed piece of surgical steel, encased in plastic at the end that is not pointed. It is used to poke a small hole in the skin to get a drop of blood.

Lancing device -- a small piece of equipment designed to hold a lancet by its plastic end, and push its point quickly through the skin. Most are made of plastic, are spring-loaded, and pull the lancet back quickly after piercing the skin. Many are shaped like pens.

Self-monitoring of blood glucose (SMBG) -- checking a drop of your own blood to find out how much glucose, dissolved sugar, is in it.

Getting the right equipment

1. **The meter:** Choose a meter that requires as small a drop of blood as possible. If you need only a small drop of blood, you won't have to poke your finger as deeply to get it. The size of the blood drop needed for glucose monitors currently on the market ranges from 10 microliters to 0.3 microliters. If your insurance only covers certain meters, or if you need a voice attachment or other special feature with your meter, your choices will be limited. Still, if you have a choice between two or more meters, you can choose the meter that requires the smaller drop of blood.

Some people like using a meter that can read a drop of blood from an alternate site. This can be a good choice for some people. However, alternate sites do not work for everyone. Some people have trouble getting enough blood from alternate sites, some develop bruises on their arms and legs when they lance those sites, and for blind people there is no alternate-site meter available that talks. Furthermore, even people who can use alternate sites cannot use them at all times. Alternate sites are not accurate when blood glucose is

changing rapidly, such as after a meal or during hypoglycemia. To get an accurate test at such times, it's important to use the fingertips. So alternate-site meters, while helpful to some people, do not solve the problem of sore fingers by themselves.

2. The lancing device: Use a lancing device that allows you to dial the depth. Older lancing devices only had one pre-set depth on them. Newer lancing devices allow you to dial the depth that the lancet will penetrate into your skin, from a very shallow level to a deep level. By using such an adjustable lancing device, one that allows you to dial the depth, you can choose the shallowest level that still gets you a large-enough drop of blood.

3. The lancet: If your lancing device allows you a choice of lancets, for comfort, use a lancet with a very narrow needle. The term used to measure the size of the needle is gauge. The larger the gauge the smaller the needle on the lancet.

Lancets are available with needles from 21 to 33 gauge. You may need to experiment a little to find out what works best for you. Some people find lancets with very small gauge needles make it hard for them to get a large-enough drop of blood. See if your diabetes educator or pharmacist can give you a few sample lancets of different types, so you can try them out.

Choosing a less painful site for lancing

1. Use the sides of the fingers, not the center. The sides of the fingers have fewer nerves than the center pad of the fingertips, so they hurt less when they are lanced. The sides also have more blood vessels close to the surface, so you don't have to lance as deeply to get a large-enough drop of blood.

2. Have a system for rotating where you lance. Many people who complain of sore fingers are lancing the same area over and over again. You can avoid this by rotating the lancing site around all the available sides of all your fingers. However, in the daily routine of life, most people find it hard to remember exactly where they last lanced their fingers. It can help to use a system, assigning a particular finger to each day of the week.

Here's the system I use: Use the left index finger on Monday, the left middle finger on Tuesday, the left ring finger on Wednesday, the right index finger on Thursday, the right middle finger on Friday, the right ring finger on Saturday, and either the small fingers or the thumbs on Sunday. If you check your blood glucose several times a day, you might use the side toward the thumbs for morning and noon, and the other side for the evening and night.

3. Or, you can re-use the same site over and over until you build up a callus there. If you do this, you'll probably have to set your lancet holder to a deeper level. However, some people say this hurts less.

Preparing the site to make the blood flow better

1. Do not use alcohol to clean your fingers before lancing. Regular use of alcohol to clean your fingers can dry the skin, making it more prone to painful cracking. Also, if you use alcohol, and do not let it dry completely before you lance, it stings. Furthermore, if the alcohol does not dry completely and it mixes with your blood, it can cause an inaccurate reading.

2. Before lancing a finger, wash carefully with warm soapy water. The finger you lance should be clean so the lancet doesn't push in dirt or any other surface material. Any foreign material under the skin can hurt, and can cause an infection, which will hurt even more.

Using warm water to wash your hands will help by bringing more blood to the surface. This is especially helpful for people who tend to have cold hands.

Washing your hands is important for another reason that has nothing to do with sore fingers. If even a small amount of food is left on your fingers from your last meal or snack, for example, a bit of juice from a piece of fruit -- it can dissolve in the blood drop and can artificially raise your blood glucose reading.

3. Use any or all of the following tips for bringing more blood into your fingertips:

- * Rub the spot on the finger you are going to lance until it becomes warm.

- * Shake your hand down at your side, like shaking a thermometer, so the blood collects in your fingertips.

- * Wrap a doubled-up rubber band as a small tourniquet around the middle joint of your finger, using your thumb to hold it down while you lance. The tip of the finger will become engorged with blood. After you lance your finger, release the rubber band to let the blood flow in.

Lancing your finger

1. Do not re-use lancets. Many people do re-use lancets, either because they're trying to save money or just to have one less thing to do. In general, as long as you use a lancet only on yourself, and you clean your fingers before you lance them, re-use of lancets does not cause major problems. However, each time you re-use a lancet, the point becomes a little less sharp. Some people find they have less pain when they use a new lancet every time.

2. Set your lancet holder at the shallowest setting you can use while still getting a large-enough blood drop for your meter. The shallower the poke, the less it will hurt. It may take some experimentation to find which setting works for you. I suggest starting with the

middle setting, and gradually getting shallower if you bleed a lot, and deeper if you don't bleed enough.

3. Steady your hands so you can poke your finger without moving it. Some people flinch and move their hands slightly when they press the button on the lancing device. If you move your finger while the lancet is poking it, you can cause a small tear in the skin, which can be very painful. This happens most often when someone is lancing a finger with the hands in the air in front of the body. If you have trouble holding your hands steady while you are lancing your finger, it can help to steady your hands on a table or against a wall.

Getting a large-enough drop of blood

1. Hang your hand down. If you have trouble getting enough blood, don't squeeze the fingertip. Squeezing near the lancing site can cause more pain. Instead, hang your hand below your waist to a slow count of five.

2. "Milk" your finger from the base to the tip. If you still don't have enough blood, use your thumb and forefinger of the other hand to grasp your finger at the base of the lanced finger, where it joins to the hand. Applying pressure, pull the thumb and forefinger from the base to the tip of the lanced finger. This movement is like milking a cow, or squeezing the last bit of toothpaste out of a small tube. It usually produces a large drop of blood.

Stopping the flow of blood

1. Apply pressure to the lanced site. If you start doing other things without stopping the flow of blood, you'll have a small hole in your finger that could get infected. Furthermore, you risk getting blood drops where you don't want them! Use a tissue or cotton ball to put pressure on the lanced spot for about 30 seconds, while holding the hand above the level of your heart, until your blood clots.

2. If necessary, cover the site with a small bandage. If you take coumadin or any other medication that thins your blood and prevents clotting, it may take a full minute or two to stop the bleeding. If you can't take the time to wait until your blood clots, you might want to cover the lanced fingertip with a small bandage.

If your fingers are already sore

1. Avoid lancing a sore spot for a few days. After all, if it's already sore, lancing it again will only make it worse. Use your other fingers until the sore spot heals.

2. Get treatment for infection. If the spot is warm, swollen and red, you probably have an infection. Apply antibiotic ointment and keep it covered. If your blood glucose is higher

than usual, if the infection is getting worse, or if it does not improve within two days, call your doctor.

3. Try using lotion or creams. Some people report they get relief from creams and gels that are formulated especially for diabetic hands and feet. These products are readily available in pharmacies and from mail-order companies that carry diabetes supplies.

Everything I have discussed here is a field-tested tip. Each tip works for at least one person I know. Most people who do daily blood glucose checks need to do at least a few of these things to prevent sore fingers. On the other hand, I don't know anyone who needs to do all of them. You'll probably want to pick and choose among the suggestions above. Just like everything else in diabetes care, you need to find out what works for you.