
Diabetes Life Lines



A newsletter from your county Extension office
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Is Fingertip Testing More Accurate Than Alternate Sites?

Perhaps you are one of many people suffering from sore fingertips who were delighted at the chance to use any site other than your fingertips to check your blood glucose levels. Today there are a number of meters that offer alternate-site testing. But, are the results as accurate?

The forearm is the alternative area of the body now being used most often, although the hand, upper arm, thigh, and calf can also be used. These are larger areas with fewer nerve endings. Therefore, a lancet puncture provides less discomfort than on the fingertip.

The rate of blood flow to the finger is much faster than to the arm. Therefore, when glucose levels are changing rapidly, there may be a major difference in the glucose reading between the arm and finger. Some reports have reported as much as a 100 mg/dl difference. When blood glucose is falling rapidly, the higher reading from the arm could result in a delay in treating hypoglycemia (low blood glucose).

When checking before meals, the difference is minor since glucose levels are fairly steady. Up to two hours after meals and after exercise, however, blood glucose levels are changing rapidly again. Therefore, if you choose to use an alternate site instead of the fingertips, do so only at the following times to ensure accuracy :

- fasting or before a meal
- two hours or more after a meal
- two hours or more after exercise

At times when your blood glucose levels are changing rapidly, use your fingertips to check your blood glucose to be safe. This includes up to two hours after injecting rapid-acting insulin, up to two hours after eating a meal, and during or after exercise. It is also best to use your fingertips when monitoring before driving





and during illness. If you have a history of not noticing when you are hypoglycemic (have low blood glucose), you should always use fingertip checks.

Alternate site testing

offers a way to check blood glucose levels with less discomfort than the traditional method. If it helps you monitor more frequently to improve your diabetes control, it is well worth using. Remember to use alternate sites only at recommended times to ensure accuracy.

Making the Most of Your Blood Glucose Records

Checking your blood glucose levels regularly is an important part of managing your diabetes. But, do you often wonder why the numbers change so much from day to day? Do you know what to do with the numbers to help improve your diabetes control?

Although blood glucose monitoring is important for everyone with diabetes, how often you check is up to you and your diabetes care team. You might be checking twice a day if you have type 2 diabetes, or you may be checking 7-8 times a day if you have type 1 diabetes. Consult with your health care team if you

are unsure how often you should check your blood glucose levels.

Your doctor or diabetes educator may have asked you to check your blood glucose before meals some times and two hours after meals at other times. After-meal checks are being recommended now more often because they give a better picture of how your meal affects your blood glucose levels. The blood glucose goals for two hours after meals are usually between 160-180 mg/dl.

Once you check your blood glucose levels, write your results in a logbook. This helps you identify blood glucose patterns. A blood glucose pattern is a series of high or low blood glucose values over several days at a particular time of the day. Looking at blood glucose patterns can help you and your diabetes care team determine what you need to change to improve your control. Some of the things that cause your blood glucose to change from day to day include:

- Changes in amounts of carbohydrate eaten
- Variations in activity from day to day
- Changes in your schedule (traveling, eating meals or taking medication at different times)
- Illness
- Stress
- Changes in medication doses



There are a couple of things you can do to help prevent these wide variations in blood glucose levels that don't require changing your medication dose.

The first is to look at what you eat. You know that food increases your blood glucose levels. Foods with carbohydrate convert to glucose in the body, increasing your blood glucose levels within about 15-20 minutes after eating. Remember that foods that have carbohydrate include all foods that contain starch and sugar like bread, pasta, rice, potatoes, fruit, juices, and sweets. For this reason, many people with diabetes keep track of the amount of carbohydrate they eat at meals and snacks, known as carbohydrate counting. The more consistent you are in the amount of carbohydrate you eat at meals and snacks from day to day, the less variation you will have in your blood glucose levels. Therefore, pay close attention to portion sizes of foods containing carbohydrate.

The second thing you can do is to take a look at your activity level. Physical activity usually lowers blood glucose levels by helping your body use glucose for energy. On days when you are more active, your blood glucose will usually be lower than days that include a lot of sitting such as when you are riding in a car, watching TV or working on your computer. Try to get about the same

amount of activity each day to help minimize these blood glucose fluctuations.

Taking your diabetes medication at about the same time each day and eating regular meals at about the same time from day to day will also keep your blood glucose levels more consistent.

Because of the many different things that affect your blood glucose, it is helpful to make a note of any illness, stress, unusual amounts of food eaten or changes in your schedule or activity level in your logbook. This will help you later to understand why your blood glucose level increased or decreased at a specific time.

Your blood glucose log might be fairly simple if you are not taking insulin and more detailed if you take several injections of insulin each day or use an insulin pump. Medication doses should always be recorded in addition to your blood glucose readings.

In the following example the person is not taking diabetes medication. Blood glucose was checked before and after breakfast and the amount of carbohydrate was recorded. Note that the blood glucose was lower after breakfast the day he rode his bike and higher after breakfast on the day he ate too many pancakes.



	Breakfast			
	Before	After	Carb (gms)	Notes
Sunday	7:00 98	9:00 140	60	Rode bike after breakfast
Monday	8:00 85	10:00 158	70	
Tuesday	8:15 78	9:15 212	95	Ate too many pancakes

Use the information you get from your blood glucose records to help improve your blood glucose control. If you see that your blood glucose increases every time you eat at a particular restaurant, took another look at what you are eating. Consider reducing your portion sizes by sharing a meal or taking home a doggy bag. Or if your blood glucose is always better on days you walk, try to make walking 30 minutes a day a regular part of your daily routine. Changing or adding medication is not always the best choice to improve your blood glucose levels.

Eating consistent amounts of carbohydrate, maintaining a regular activity level, and taking medication on

schedule are ways you can more easily improve your diabetes control and help prevent complications of diabetes.

A Little Forgetful? Help for Insulin Users

If you sometimes forget if you took your insulin or how much you took, a new insulin device can help you. The Innovo insulin doser is an insulin delivery device that has a built-in memory that keeps track of how many units of insulin you took at your last dose and when you took it. A large digital display tells you when the entire dose is delivered so you know when you can remove the needle.

Dosages are dialed up in one-unit increments up to 70 units. If you accidentally dial up too many units, you can easily correct it. Innovo is manufactured by NovoNordisk and is available in pharmacies.



Spinach Casserole Au Gratin

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| 1 14-ounce can water-packed artichoke hearts,
drained and finely chopped | 1/2 teaspoon black pepper |
| 1/4 cup low-sodium chicken broth | 1/2 cup fat-free sour cream |
| 1 10-ounce pkg frozen chopped spinach,
thawed and drained | 1/4 cup grated Parmesan cheese |
| 2 tablespoons minced onion | 2 eggs, beaten |
| 1 tablespoon chopped garlic | Butter-flavored nonstick cooking spray |

Preheat oven to 350 degrees F. Combine all ingredients. Spray a soufflé dish with butter-flavored nonstick cooking spray. Pour ingredients into dish. Bake for 1 hour, until golden brown and bubbly.

Serves 4. Serving size: 1 cup
 Carbohydrate Choices: 1
 Exchanges: 1/2 starch, 2 vegetable, 1 fat
 Calories: 142 Carbohydrate: 15 grams Fat: 5 grams
 Sodium: 483 milligrams Cholesterol: 116 milligrams Fiber: 3 grams

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Suggested Menu

<u>Menu Item</u>	<u>Exchanges</u>	<u>Carbohydrate</u>
Lettuce and tomato salad	Free	†
1 tablespoon fat-free Ranch dressing	Free	†
1 cup <i>Spinach Casserole Au Gratin</i> *	1/2 starch, 2 vegetable, 1 fat	15 grams
1 3-ounce baked potato	1 starch	15 grams
1 whole wheat roll	1 starch	15 grams
2 teaspoons reduced-calorie margarine	1 fat	†
3 ounces beef tenderloin	3 lean meat	0
3/4 cup strawberries and bananas	1 fruit	15 grams

* *This issue's featured recipe* † insignificant

Note: Portions may need to be adjusted for your meal plan.

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Dear Friend,

Diabetes Life Lines is a bi-monthly publication sent to you by your local county Extension agent.

It is written by Food and Nutrition Specialists at the University of Georgia, College of Family and Consumer Sciences. This newsletter brings you the latest information on diabetes, nutrition, the diabetic exchange system, recipes, and important events.

If you would like more information, please contact your local county Extension office.

Yours truly,

County Extension Agent

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