Practical Guide to Accurate Blood Sugar Monitoring

This document provides a detailed, step-by-step process for using a blood glucose meter (glucometer) and offers guidance on how to ensure your results are accurate and what to do when they fall outside your target range.

Section 1: Step-by-Step Guide to Testing

Following a consistent process is the key to getting reliable results every time.

1. **Prepare Your Supplies:** Gather your glucose meter, a new test strip, a lancet, and your logbook or app.
2. **Wash Your Hands:** Use warm, soapy water to wash and dry your hands thoroughly. This is the most critical step for accuracy. Food residue on your fingers can cause a falsely high reading.
3. **Prepare the Meter:** Insert a test strip into the meter. This will usually turn the meter on automatically.
4. **Prepare the Lancing Device:** Insert a new, sterile lancet into the lancing device and set it to the desired depth. Using a fresh lancet for every test is recommended to reduce pain and infection risk.
5. **Obtain a Blood Sample:** Prick the side of your fingertip, which has fewer nerve endings than the pad. Gently squeeze the finger until a small, round drop of blood forms.
6. **Apply Blood to the Strip:** Touch the tip of the test strip to the edge of the blood drop. The strip will automatically draw in the correct amount of blood via capillary action.
7. **Read and Record the Result:** The meter will count down for a few seconds and then display your blood glucose level. Immediately record the result, along with the date, time, and any relevant context (e.g., "before breakfast," "2 hours after lunch," "felt shaky").

Section 2: Ensuring an Accurate Reading: Common Mistakes to Avoid

If your reading seems unexpectedly high or low, check these common sources of error before re-testing.

- **Expired or Improperly Stored Test Strips:** Always check the expiration date on your vial of strips. Store them in their original sealed container in a cool, dry place. Exposure to heat, humidity, or air can damage them.
- **Meter Not Coded Correctly:** Some older meters require you to "code" them by inserting a code chip or entering a number that matches the number on the vial of test strips. Ensure the codes match. (Note: Most modern meters no longer require this step).
- **Insufficient Blood Sample:** If you don't apply enough blood, the meter may give you an error message or an inaccurate reading. Ensure you have a full, round drop.
- **Extreme Temperatures:** Testing in very hot or very cold conditions can affect the meter and strips' performance.
- **Contaminants on Hands:** Besides food residue, lotions, creams, or sanitizers can also interfere with the reading.

Section 3: Interpreting Your Results: What to Do Next

Seeing a number outside your target range is not a reason to panic; it's an opportunity to learn and take action.

If Your Reading is Too High (Hyperglycemia):
A single high reading can be caused by many things (a larger meal, less activity, stress, illness).

- **Short-term Action:** Drinking a large glass of water and going for a light walk (if you feel well enough) can help lower blood sugar slightly.
- **Pattern Recognition:** If you notice a *pattern* of high readings at the same time each day (e.g., every morning), record it and discuss it with your healthcare team. They may need to adjust your medication or diet plan.

If Your Reading is Too Low (Hypoglycemia - typically below 4.0 mmol/L):
This requires immediate action to prevent it from becoming severe.

- **Follow the "Rule of 15":**
    1. Consume **15 grams** of a fast-acting carbohydrate. Examples include:
        - 1/2 cup (125 mL) of juice or regular soda
        - 3-4 glucose tablets

    - 1 tablespoon of honey or sugar
2. **Wait 15 minutes.**
3. **Re-check** your blood sugar.
4. If it is still low, repeat the process. Once your blood sugar has returned to your target range, eat a small snack that includes a protein if your next meal is more than an hour away.