

LOS ANGELES UNIFIED SCHOOL DISTRICT  
Medical Services Division  
District Nursing Services Branch

**INSULIN ADMINISTRATION WITH VIAL AND SYRINGE  
IN SCHOOL SETTING**

**I. GENERAL GUIDELINES**

**A. PURPOSE :**

- 1. Essential Medication:** Insulin is a life-sustaining hormone for students with diabetes and must be administered with precision and safety. Oral insulin is ineffective; hence injection is required.
- 2. Mealtime (Bolus) Insulin:** Used to manage post meal blood glucose levels. Usually administered 5–15 minutes before eating, per the student’s Diabetes Medical Management Plan (DMMP).
- 3. Long-Acting (Basal) Insulin:** Provides consistent background insulin throughout the day. It must be administered at the same time daily to maintain glycemic stability, as prescribed.

**B. GENERAL INFORMATION**

- 1. Insulin Types and Syringe Compatibility:** Always verify the name, type, expiration date, and dosage of insulin before administration. Standard insulin (U-100) contains 100 units of insulin per milliliter and must be used with a U-100 insulin syringe.
- 2. Insulin Syringe Calibration:** Most insulin syringes are designed for U-100 insulin. On a 1 mL syringe, each small line represents 1 unit of insulin. Accurate measurement is critical to prevent under- or overdosing.

**C. SAFETY & PRECAUTIONS**

**1. Universal Precautions:**

- Use gloves and practice hand hygiene before and after insulin administration.
- Handle all sharps using OSHA and CDC guidelines for bloodborne pathogen exposure.

**2. Check Expiration and Storage:**

- Unopened vial: store in refrigerator.

- Opened vial: store at room temperature for up to 28 days
- Label vial with expiration date and monitor for discoloration or clumping.

#### **D. AUTHORIZED PERSONNEL**

1. Licensed Nurse
2. Students monitored by designated voluntary trained school personnel as appropriate, as well as students who are capable of independently carrying out diabetes tasks outlined in their DMMP.
  - May self-administer if:
    - ✓ Authorized by DMMP and provider
    - ✓ Determined competent by the school nurse and parent
    - ✓ Age-appropriate and developmentally capable
3. Parents or Guardians (not employed by the district) may choose to:
  - ✓ Come to school and administer the insulin themselves
  - ✓ Designate a competent adult (such as a family member over the age of 18) to administer it on their behalf

*This is not a substitute for school responsibility. The district cannot delegate insulin administration solely to the parent/guardian but ensure trained school personnel are available to provide this service.*

#### **E. EQUIPMENT**

1. Provided by Parent/Guardian
  - Insulin vial
  - Insulin syringe that matches the type and strength of insulin
  - Alcohol wipes
  - Glucometer and test strips
  - Glucagon Emergency Kit
  - Quick-acting glucose or simple carbohydrates
  - Ketone stix
2. Provided by School
  - Disposable non-latex gloves
  - Cotton ball or tissues
  - Sharps container
  - Plastic bag for non-sharp disposal of waste

#### **F. DOCUMENTATION & COMMUNICATION**

1. Document each insulin administration event:

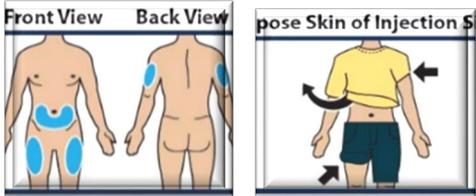
- Time, dose, type of insulin, blood glucose or CGM reading
  - Site of injection
  - Any side effects or concerns
  - Student response
2. Communication:
- Notify parent/guardian of any unusual glucose patterns or missed doses.
  - Follow emergency protocols as per DMMP for hypoglycemia/hyperglycemia.

## II. PROCEDURE

1. To give an insulin injection, you need to fill the right syringe with the right amount of insulin, decide where to give the injection, and know how to give it.
2. Always try to use the same brands and types of supplies. Do not use expired insulin.
3. Insulin should be given at room temperature. If you have stored it in the refrigerator or cooler bag, take it out 30 minutes before the injection. Once you have started using a vial of insulin, it can be kept at room temperature for 28 days. The expiration date should be indicated on the opened vial.
4. The insulin should not have any clumps on the sides of the vial. Do not use — get a new vial.
5. Intermediate-acting insulin (N or NPH) is cloudy and must be rolled between your hands to mix it. Do not shake the vial, as this can make the insulin clump.
6. Clear insulin does not need to be mixed.
7. If the insulin vial has a plastic cover, remove it. Wipe the top of the bottle with an alcohol wipe. Let it dry. Do not blow on it.

ESSENTIAL STEPS	KEY POINTS AND PRECAUTION
1. Verify the right patient/student	
2. Identify appropriate location to perform diabetes task	
3. Review patient/student information: <ol style="list-style-type: none"> <li>a. Identifies the time when insulin should be administered.</li> <li>b. Specific instructions on DMMP</li> <li>c. Patient/student's ability to participate in the procedure</li> </ol>	
4. Wash hands	
5. Gather supplies: gloves, insulin bottle, syringe, alcohol wipes, cotton ball, and sharps container	

6. Verify the right insulin and expiration date and discard date (based on the date vial is opened) on the bottle	Make sure it is the right insulin. Make sure it is not expired
7. Verify insulin dose	
8. Put on gloves	
9. Wipe the top of the insulin bottle with an alcohol wipe and let it dry for a few seconds	 <p>Do not blow on it</p>
10. Take the cap off the needle	Do not touch the needle to keep it sterile.
11. Pull the syringe plunger down to let appropriate units of air into the syringe equal to the amount of insulin to be drawn up	
12. Push needle through the center of the rubber top on the insulin bottle	
13. Push air into the bottle and leave the needle in the bottle	
14. Turn the insulin bottle and syringe upside down	 <p>With the tip of the needle in the liquid</p>
15. Slowly pull the syringe plunger down to the correct number of units	
16. Check the syringe for air bubbles. If there are bubbles, hold both the bottle and syringe in one hand, and tap the syringe with your other hand. The bubbles will float to the top. Push the bubbles back into the insulin bottle, then pull back to get the right dose.	
17. When there are no bubbles, remove the syringe from the bottle. Put the syringe down carefully so the needle does not touch anything.	

<p>18. Assist patient/student in selecting the appropriate injection site</p>	<ul style="list-style-type: none"> <li>Inject 1 inch (2.5 centimeters (cm) away from scars and 2 inches (5 cm) away from your navel — if using the abdominal site</li> <li>Do not inject in a spot that is bruised, swollen, or tender.</li> <li>Do not inject in a lumpy, firm, or numb spot (this is a common cause of insulin not working the way it should).</li> </ul> 
<p>19. Cleanse skin appropriately with an alcohol wipe</p>	
<p>20. Pinch the skin and put the needle in at a 90° angle.</p>	 <p>The insulin needs to go into the fat layer under the skin</p>
<p>21. Push the needle all the way into the skin. Let go of the pinched skin. Inject the insulin slowly and steadily until it is all in.</p>	<p>Leave the syringe in place for 5 seconds after injecting</p>
<p>22. Pull the needle out at the same angle it went in and apply gentle pressure to the injection site with a cotton ball as needed</p>	
<p>23. Dispose of the syringe, without recapping, into the sharp's container</p>	<p>Keep the container secured and safely away from children. Never reuse needles or syringes.</p>
<p>24. <b>For Nursing:</b> Document electronically and on the Nursing Diabetes Protocol Log <b>For trained school personnel supervising:</b> Document on Diabetes Protocol Log</p>	

*Document dose, time, site, glucose values, and any adverse reactions and mark "supervised" on the Diabetes Protocol Log.	
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**REFERENCES:**

American Association of Diabetes Educators website. Insulin injection know-how [www.adces.org/docs/default-source/handouts/insulinrelated/handout\\_pwd\\_ir\\_protipstricks.pdf?Status=Master&sfvrsn=e3356359\\_9](http://www.adces.org/docs/default-source/handouts/insulinrelated/handout_pwd_ir_protipstricks.pdf?Status=Master&sfvrsn=e3356359_9). Accessed May 7, 2024.

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