

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

**INSULIN ADMINISTRATION WITH INSULIN PEN  
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 postprandial 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. Pen-Based Insulin Delivery:** Insulin pen simplifies the process by combining both the insulin and syringe into one unit. This simplifies administration, reduces dose errors, and improves adherence.
- 2. Types of Insulin Pens:**
  - Prefilled (Disposable): Single use, preloaded with insulin; discard after 28 days or when empty.
  - Reusable: Designed to work with replaceable insulin cartridges. Not all cartridges are interchangeable; follow the manufacturer's compatibility chart.
- 3. Insulin Types Used in Pens:**
  - Rapid-acting, long-acting, and premixed insulins are available in pen form.
  - Use only FDA-approved combinations for pediatric use, as outlined in the DMMP.
- 4. Needle Selection:**
  - Most students use 4–6 mm needles, which are less painful and do not require pinching the skin.

- Needle gauge typically ranges from 30 to 32; finer needles cause less discomfort.

#### **5. Advantages in School Settings:**

- Portable and discreet
- Less intimidating for young children
- Reduces preparation and administration time

### **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. Needle Use:**

- Always attach a new needle for each dose.
- Do not recap needles after use.
- Dispose of used pen needles directly into a Sharps container.

#### **3. Priming an insulin pen**

Priming removes air from the needle and confirms insulin flow to ensure accurate dosing.

- **Initial Use (New Pen or Cartridge):**  
Hold the pen with the needle pointing upward, dial **5 units**, and press the injection button until insulin appears at the needle tip.
- **Before Each Subsequent Use:**  
Hold the pen with the needle pointing upward, dial **2 units** and press the injection button to verify insulin flow before administering the prescribed dose.

#### **4. Check Expiration and Storage:**

- Unopened pen: store in refrigerator.
- Opened pen: store at room temperature for up to 28 days (verify specific brand).
- Label pen 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 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 pen (labeled with student's name)
- Pen needles (compatible with insulin pen)
- Alcohol wipes
- Glucometer and test strips
- Glucagon Emergency kit
- Quick-acting glucose or simple carbohydrates
- Ketone stix

2. Provided by School Site

- Sharps container (OSHA compliant)
- Non-latex disposable gloves
- Cotton ball or gauze pad
- Plastic bag for non-sharp disposal of waste

## **F. DOCUMENTATION & COMMUNICATION**

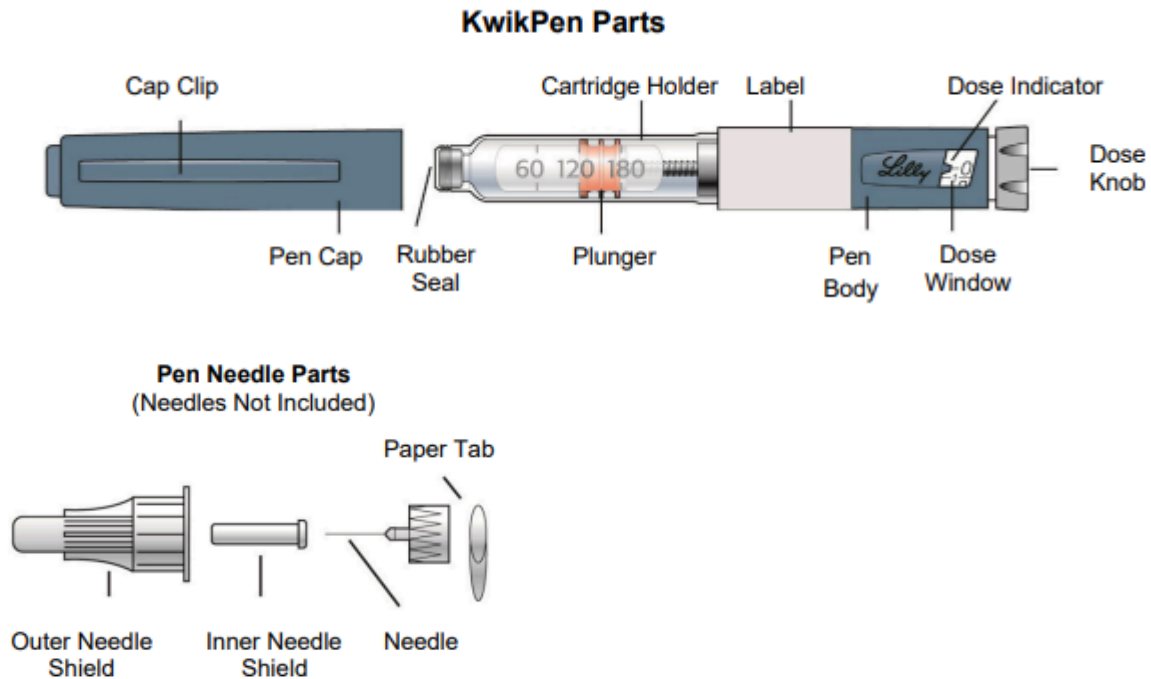
1. Document each insulin administration event:

- Time, dose, type of insulin, blood glucose or CGM reading
- Site of injection
- Any side effects or concerns
- Student response

2. Communication:

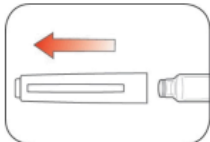
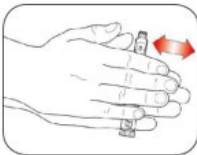
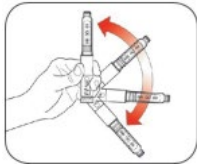

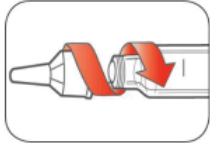
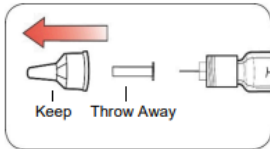
- Notify parent/guardian of any unusual glucose patterns or missed doses.
- Follow emergency protocols as per DMMP for hypoglycemia/hyperglycemia.

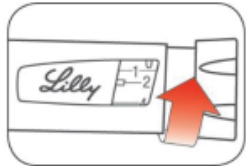

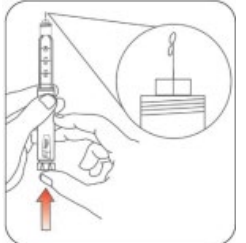
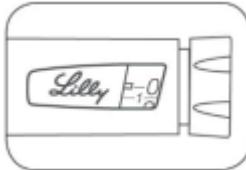
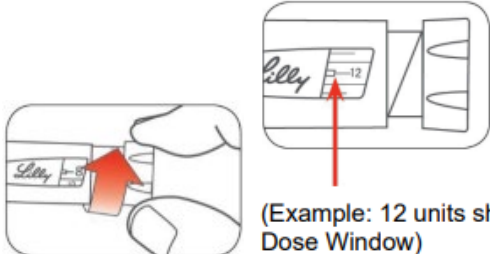
## **G. INSULIN PEN AND NEEDLE PARTS**

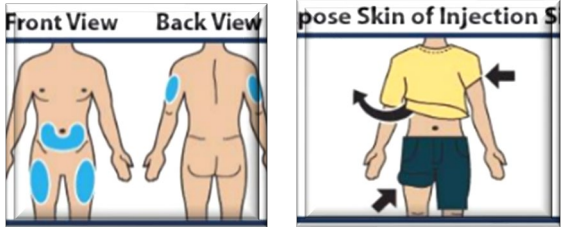

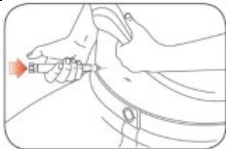



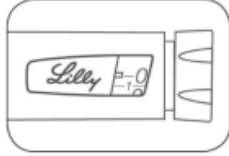
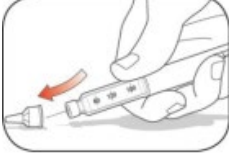
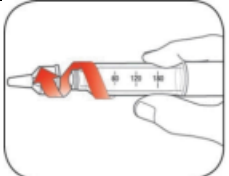
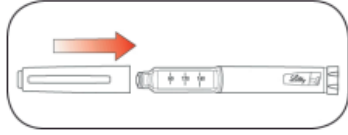
## **II. PROCEDURE**

<b>ESSENTIAL STEPS</b>	<b>KEY POINTS AND PRECAUTION</b>
1. Verify the right patient/student	
2. Identify appropriate location to perform diabetes task	
3. Review patient/student information: <ul style="list-style-type: none"> <li>a. Identify 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> </ul>	
4. Wash hands	

5. Gather supplies: gloves, insulin pen, new pen needle, alcohol wipes, cotton ball, and sharps container	Always use a new needle for each injection to help prevent infections and blocked needles.
6. Verify the right insulin and expiration date and discard date (based on the date the disposable pen was first used) written on the pen.	Do not use the pen past the expiration date printed on the Label or for more than 28 days after you first start using the Pen
7. Verify insulin dose	
8. Put on gloves	
9. Pull the pen cap straight off. – Do not remove the pen label.	
10. Check insulin for clarity. <b>Clear insulin:</b> If the insulin is supposed to be clear, check to ensure it's completely clear. If it's discolored or cloudy, don't use it— get a new insulin pen. <b>Cloudy insulin:</b> If the insulin is intended to be cloudy, it should be mixed by gently rolling the pen between the hands 10 times. Next, the pen should be tipped up and down 10 times. The insulin must appear evenly white and cloudy, without any lumps or floating particles. If any are present, the mixing process should continue until they are no longer visible.	Some types of insulin are meant to be clear. Others are meant to be cloudy.  NPH 100 units/mL an Intermediate acting insulin is normally cloudy   
11. Open an alcohol wipe and clean the rubber seal at the top of the insulin pen. Then throw the alcohol wipe away in the trash can.	
12. Take the protective tab off the new pen needle. Throw the tab away	
13. Twist the pen needle onto the top of the insulin pen until it stops turning. Make sure to keep the pen needle straight as you twist it on.	
14. Take off the outer needle shield once the needle is on the pen. Place it on the table to use later• Pull off the inner needle shield and throw it away	
<b>Priming the Pen:</b> Prime before each injection.	

<ul style="list-style-type: none"> <li>• Priming the pen involves removing air from the needle and cartridge that may accumulate during normal use, ensuring the pen functions correctly. Failure to prime before each injection may result in administering too much or too little insulin.</li> </ul>	
<p>15. To prime the pen, turn the dose knob to select 5 units for a brand-new pen or 2 units for subsequent uses.</p>	
<p>17. Hold the pen with the needle pointing upward and gently tap the cartridge holder to gather any air bubbles at the top.</p>	
<p>18. Continue holding the pen with the needle pointing upward. Push the dose knob in until it stops, ensuring that "0" appears in the dose window. Hold the dose knob in and slowly count to five.</p> <p>Insulin should be visible at the needle tip.</p> <ul style="list-style-type: none"> <li>– If no insulin appears, repeat the priming steps, but no more than four times.</li> <li>– If insulin is still not visible, replace the needle and repeat the priming steps.</li> </ul> <p>Small air bubbles are normal and will not affect the dose.</p>	 
<p>19. The dose knob should be turned to select the required number of units for injection, ensuring that the dose indicator aligns with the correct dose.</p> <ul style="list-style-type: none"> <li>– The pen dials 0.5 unit or one unit at a time.</li> <li>– The dose knob clicks with each turn.</li> <li>– Do not dial the dose by counting clicks, as this may result in selecting the wrong dose.</li> <li>– The dose can be adjusted by turning the dose knob in either direction until the correct dose aligns with the dose indicator.</li> <li>– Always verify the number in the dose window to confirm the correct dose has been selected.</li> </ul>	<p>The arrow should be aligned with the selected dose for injection. If the required units cannot be dialed, the insulin pen is likely almost empty. In this case, it should be discarded, and a new pen should be used to inject the full dose immediately. <b>A partial dose should never be administered, nor should the dose be split into two injections.</b></p>  <p>(Example: 12 units shown in the Dose Window)</p>

<p>20. Assist patient/student in selecting the appropriate injection site.</p> <ul style="list-style-type: none"> <li>– Insulin should not be injected into the same spot as the previous injection or near incisions, scars, or stretch marks.</li> <li>– Each injection should be placed at least 2 inches (5 centimeters) away from the last site to help prevent soreness and the development of scar tissue.</li> <li>– Injections should not be administered in areas that are lumpy, firm, or numb, as this can affect insulin absorption and effectiveness.</li> </ul>	 <p>The diagrams illustrate proper injection site selection. The 'Front View' and 'Back View' show the abdomen and back with blue circles indicating safe areas, avoiding the navel and spine. The 'Pinch Skin of Injection Site' diagram shows a person pinching the skin on their upper arm, with arrows indicating the direction of the pinch.</p>
<p>21. Cleanse skin appropriately with an alcohol wipe</p>	
<p>22. The insulin pen should be held in the fist with the thumb placed on the side of the pen.</p>	
<p>23. The skin at the injection site should be gently pinched. The entire needle should be pushed into the skin in one smooth, quick motion, ensuring it is at a 90-degree angle (straight up and down), not tilted. Gentle pressure should be applied so that a small dimple forms in the skin around the tip of the pen.</p>	<p>When using a shorter needle, the injection should be administered at a 90-degree angle without pinching the skin. However, very thin individuals and children may prefer to pinch up the skin and inject at an angle, even with a shorter needle, to avoid hitting muscle.</p>
<p>24. The thumb should be moved to the top of the insulin pen. The pen should be held steady while the injection button is pushed down firmly.</p> <p>Care should be taken not to press the pen harder into the body.</p>	
<p>25. After pressing the button all the way down, it should be held down while slowly counting to five. This allows the insulin to fully come out of the pen. The numbers in the dose window should return to zero. Once counting to five is complete, the needle should be pulled straight out of the skin.</p>	 <p>The insulin should not be injected by turning the dose knob. Turning the dose knob will not administer the insulin</p>

<p>26. Pull the needle out of the skin</p> <ul style="list-style-type: none"> <li>– A drop of insulin at the needle tip is normal and will not affect the dose.</li> <li>– If "0" is displayed, the full amount dialed has been administered.</li> <li>– If "0" is not shown, do not redial. <b>If it is believed that the full dose was not received, the injection should not be repeated.</b> Instead, blood glucose levels should be monitored as directed by a healthcare professional.</li> </ul>	
<p>27. If a drop of blood appears at the injection site, the area should be pressed lightly with a finger with tissue or cotton ball. The injection site should never be rubbed after the injection.</p>	
<p>28. The outer needle cap should be placed sideways on a flat surface.</p> <p><b>The needle should be recapped without touching the cap.</b></p>	
<p>29. Unscrew the needle from the insulin pen and drop it into your sharp container.</p> <p>Do not store the Pen with the needle attached to prevent leaking, blocking the needle, and air from entering the Pen.</p> <p>The sharps container should be secured and kept safely away from children. Needles and syringes should never be reused.</p>	
<p>30. Place back the pen cap by lining up the cap clip with the dose indicator and pushing straight on to protect the insulin from sunlight.</p>	
<p>27. <b>For Nursing:</b> Document electronically and on the Diabetes Protocol Log</p> <p><b>For supervising trained school personnel:</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.

American Diabetes Association: Insulin Pens  
<https://diabetes.org/about-diabetes/devices-technology/insulin-pens>

Instructions for Use Humalog® KwikPen®  
<https://pi.lilly.com/ca/humalog-ca-ifu-kp.pdf>

CDE Diabetes Management Guidelines  
CSNO Position Statements  
FERPA/504/IDEA Compliance Standards

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