Vaccine Injection Technique

**Intramuscular (IM) Injections:**
- Wash your hands.
- Preferred sites are the anterolateral aspect of the upper thigh (common for young children) or the middle of the deltoid muscle of the upper arm.
- Use a needle long enough to reach the muscle, but not so deep as to reach underlying nerves, blood vessels, or bone. See the box below.
- Stretch skin between the thumb and forefinger.
- Introduce the needle at a 90-degree angle to the muscle, with a quick thrust, advance the needle as necessary, deep into the muscle — perhaps to the hub of the needle.
- You may pull back on the plunger slightly, to be sure the needle is not placed in a blood vessel.
- Inject the medication slowly, then withdraw the needle. You may massage the injection site.

**Subcutaneous (SC) Injections:**
- Wash your hands.
- Intended for fatty tissue below the dermal layer of the skin, either the outer aspect of the upper arm (i.e., overlying the deltoid region) or the fatty area of the anterolateral thigh.
- Unlike other SC vaccines that can be injected into fatty tissue overlying the triceps muscle, do NOT inject vaccines prone to cause swelling (e.g., anthrax vaccine) over the triceps or "back of the arm," to avoid SC swelling that could lead to injuring the ulnar nerve.
- To assure placement of vaccine in SC tissue, pinch up the fatty tissue between finger and thumb. Then insert the needle at an angle of about 45-degrees, piercing the skin quickly, and advancing steadily to minimize the sting.
- Place the tip of the needle well beneath the skin, in subcutaneous tissue, but not as deep as the muscle.
- You may pull back the plunger slightly, to be sure the needle is not placed in a blood vessel.
- Inject the medication slowly, then withdraw the needle. You may massage the skin.

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**Needle Length for Intramuscular Injection Based on Body Mass**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Site</th>
<th>Needle Length</th>
<th>Needle Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant</td>
<td>thigh</td>
<td>5/8-1</td>
<td>22-23</td>
</tr>
<tr>
<td>Older children</td>
<td>thigh</td>
<td>7/8-1</td>
<td>22-25</td>
</tr>
<tr>
<td>Adult men</td>
<td>deltoid</td>
<td>5-9/1</td>
<td>22-25</td>
</tr>
<tr>
<td>Adult women</td>
<td>deltoid</td>
<td>1-1 1/2</td>
<td>22-25</td>
</tr>
<tr>
<td>Women ≥ 60 kg</td>
<td>deltoid</td>
<td>5</td>
<td>22-25</td>
</tr>
<tr>
<td>Women &lt; 60 kg</td>
<td>deltoid</td>
<td>1 1/2</td>
<td>22-25</td>
</tr>
<tr>
<td>Obese men &amp; women</td>
<td>deltoid</td>
<td>canceller 2</td>
<td>22-25</td>
</tr>
</tbody>
</table>

For viscous medications, use a wider-gauge needle.

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