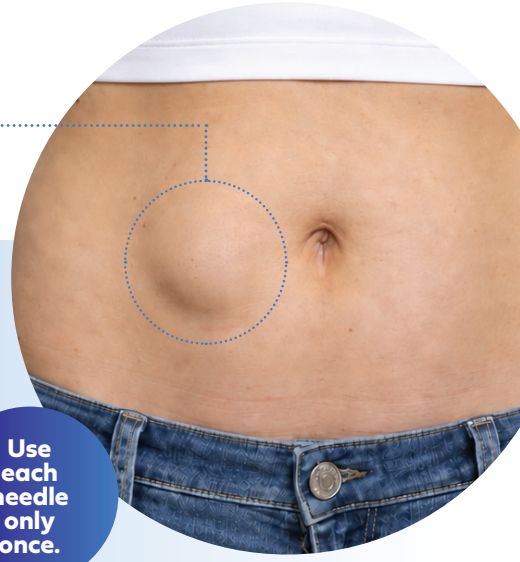
INTERNATIONAL EXPERT CONSENSUS RECOMMENDATIONS

Lipohypertrophy: Recognize, Prevent & Manage

For healthcare professionals caring for people with diabetes using subcutaneous insulin



Multiple studies report lipohypertrophy prevalence ranging from 29–76% among insulin-treated people with diabetes.[1-4]

1 Recognize the Risk

Consider lipohypertrophy when there is:

- Localized swelling or a mobile mass at an injection site
- Reduced pain sensitivity during injections
- Unexplained increase in insulin requirements
- Increased glycemic variability

Inadequate injection site rotation is the strongest modifiable risk factor.

2 Screen Regularly

Visual inspection alone is insufficient. Injection sites should also be assessed by systematic palpation.

- **Every 6 months** during the first 2 years of insulin therapy. **Annually** thereafter.
- High-risk individuals*: **every 3 months**.

Lipohypertrophy can present in different forms

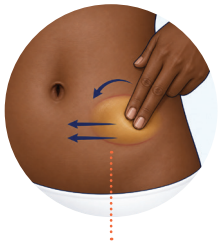


Small nodule
Easily seen and easily palpable

Large nodule
Clearly visible and easily palpable

Flat plastron
Hardly visible and not easily palpable

Flat nodule
Not visible and difficult to identify



Use slow circular and vertical fingertip movements, then repeat horizontally over the same spot, gradually increasing pressure.

Rotate Systematically

For multiple daily injections:

- Maintain **≥1 cm** (a fingerwidth) between consecutive injection sites
- Follow a systematic rotation pattern
- Allow approximately **4 weeks** before reusing an individual site

Use each needle only once.

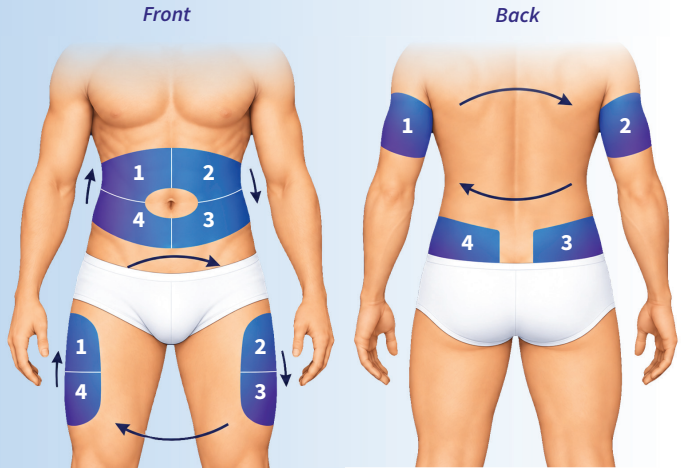


Divide injection zones into quadrants or halves



Insulin should be injected at least 1 cm from previous injections, rotating in a consistent direction.

Inject directly into exposed skin. Do not inject through clothing.



3 When Lipohypertrophy Is Identified

Avoid affected injection sites for 6–12 months.

Transitioning to unaffected tissue may improve insulin absorption and lead to an approximately **10–25% reduction in insulin requirements**. This may increase the risk of hypoglycemia.

Intensify glucose monitoring and clinical follow-up during the transition.

Reinforce patient education
Provide structured education and training on injection technique, including systematic site rotation, with periodic reinforcement.

fitter™ FORWARD

FITTER Forward is sponsored by embecta™

* Poor injection technique; needle reuse; lack of site rotation; history of lipohypertrophy; greater insulin exposure

1. Deng N, et al. J Diabetes Investig. 2018;9:536–543;
2. Famulla S, et al. Diabetes Care. 2016;39:1486–1492;
3. Barola A, et al. Front Endocrinol (Lausanne). 2018;9:638;
4. Guo L, et al. Mayo Clin Proc. 2023;98:1482–1500.

Source: Guo L, Klonoff DC, Al Sifri SN, et al. Consensus Recommendations on Lipohypertrophy: Insights From an International Panel of Experts. *Diabetes Res Clin Pract.* 2026;239:113401. doi:10.1016/j.diabres.2026.113401.

Access the full manuscript here:

embecta and the Fitter Forward logo are trademarks of Embecta Corp. ©2026 Embecta Corp. All rights reserved.