



## Lipohypertrophy

**Lipohypertrophy (LH) is a condition where there is a build up of fatty tissue under the skin which is known to commonly occur if insulin is repeatedly injected into the same site.**

The reason behind this may be due to a variety of factors including the insulin itself with its strong growth promoting properties, the repeated tissue trauma when injection sites are not rotated and the repeated use of the same needle.

In a recent Spanish study of 430 patients - 64% of patients had LH, compared with only 5% of patients who rotated injection sites correctly. 98% of patients with LH did not rotate or rotated injection sites incorrectly. The study found that both pen and syringe devices have been associated with LH, as well as insulin pump cannulae that are inserted repeatedly into the same location.

A correlation was also found with the reuse of needles and an increase in incidence of LH the more times the needle was used. The incidence of LH also increased with the number of injections per day.

When the fat becomes hard and lumpy it does not absorb the insulin and this can lead to increased insulin dose requirements and a greater risk of blood glucose variation. The Spanish study confirmed that LH is also associated with the two common complications of insulin therapy: repeated unexplained hypoglycaemia and glucose variability.

Detection of LH requires both a visual inspection of the injection sites area as well as a palpation of the sites, as some lesions can be more easily felt than seen. Normal skin can be pinched together easily whereas LH cannot. It is important to regularly inspect your own injection sites for signs of LH and also have regular examinations by your healthcare team.

### Steps to prevent lipohypertrophy

- Rotate injection sites
- Space injections within the same area at least 1 cm apart from the previous injection site to avoid repeat tissue trauma
- Alternate sides right/left within each injection area
- Use a new needle for each injection

Reference: Blanc, M; Hernandez, M.T; Strauss, K.W; Amaya, M. May 2013  
Prevalence and risk factors of lipohypertrophy in insulin – injecting patients with diabetes.

