

Subcutaneous or intramuscular injections of insulin in children. Are we injecting where we think we are?

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Abstract

OBJECTIVE: This study was designed to assess the insulin injection location in a group of children who had their injection according to their daily practice, thought to lead to subcutaneous injections. **RESEARCH DESIGN AND METHODS:** The location of the insulin deposit at the injection site was visualized using an ultrasound device. **RESULTS:** The exact insulin injection location could be localized, and 18 of 59 injections (30.5%) (one injection for each child) were in the intramuscular tissue. Of the children who had intramuscular injection, 15 of 18 were boys. The children who had an intramuscular injection had a significantly lower percentile of BMI (mean \pm SE: 47 \pm 8 vs. 72 \pm 4, $P = 0.004$), lower distance from skin surface to muscle fascia without a skinfold (5.6 \pm 0.6 vs. 11 \pm 0.7 mm, $P < 0.0001$), and a lower distance from skin surface to muscle fascia with a skinfold (8.1 \pm 0.9 vs. 15.9 \pm 0.8 mm, $P < 0.0001$) than children who had a subcutaneous insulin injection. **CONCLUSIONS:** We identified a group of children at risk for intramuscular insulin injections and that may deserve specific injection technique and advice.

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