

# Allergy 'rescue' shots may work better in lower thigh of overweight kids

February 25 2013

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Study found needles for lifesaving medication too short to reach upper-thigh muscle.

(HealthDay)—In overweight and obese children who suffer a severe allergic reaction, it may be more effective to inject epinephrine into the lower thigh rather than the upper thigh, according to a new study.

Epinephrine is a medication used when a person has a serious, life-threatening allergic reaction called anaphylaxis. Epinephrine typically comes in a single-dose, pre-filled automatic injection device that is jabbed into the thigh.

"Delivering epinephrine into the muscle allows for more rapid absorption and leads to higher [blood levels](#) than if it's injected into the overlying fat," study first author Dr. Peter Arkwright said in an American Academy of Allergy, Asthma and Immunology news release.

"Considering the rising [obesity rates](#) in children, there is concern that epinephrine autoinjectors will not adequately deliver the medication in [overweight children](#) who may be experiencing anaphylaxis."

"Without proper treatment, anaphylaxis can be fatal, so it's extremely important that epinephrine is administered quickly and effectively," Arkwright added.

Arkwright and colleagues from the University of Manchester and Royal Manchester Children's Hospital in England used ultrasound to measure the depth from skin surface to muscle at different points in the thighs and legs of 93 children.

They found that the depth in the upper part of the thigh was greater than the length of the needle in the epinephrine autoinjector in 82 percent of [obese children](#), compared with 25 percent of non-obese children.

On the lower part of the thigh, depth from the [skin surface](#) to the muscle was greater than the length of the [autoinjector](#) needle in only 17 percent of obese children and 2 percent of non-obese children.

"Based on our study, injecting epinephrine into the lower rather than upper thigh would be advised in overweight or obese children," Arkwright said. "If a child is experiencing anaphylaxis, this information would be important for a caregiver to know so that epinephrine can be administered into the child's muscle in the most effective way."

The study was scheduled for Monday presentation at the American Academy of Allergy, Asthma and Immunology's annual meeting in San Antonio. Because this study was presented at a medical meeting, the data and conclusions should be viewed as preliminary until published in a peer-reviewed journal.

**More information:** The American Academy of Family Physicians has more about [anaphylaxis](#).

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Citation: Allergy 'rescue' shots may work better in lower thigh of overweight kids (2013, February 25) retrieved 5 May 2024 from <https://medicalxpress.com/news/2013-02-allergy-shots-thigh-overweight-kids.html>

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