

# Less reaction to DTaP vaccine given in kids' thighs than arms

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Children age 12 to 35 months who receive DTaP vaccine in their thigh muscle rather than their arm are around half as likely to be brought in for medical attention for an injection-site reaction. So says a new study of 1.4 million children at Group Health and seven other Vaccine Safety Datalink (VSD) centers across the country, e-published on January 14 in *Pediatrics*.

"These local reactions are the most common side effect of vaccinations," said study leader Lisa A. Jackson, MD, MPH, a senior investigator at Group Health Research Institute. "But we have known relatively little about how to prevent them." Local reactions go away after a day or two, but they can be painful, and the associated redness and swelling can concern parents. This study focused on "medically attended" local reactions: ones that resulted in a visit to a doctor, nurse, or [emergency room](#). Ideally, medically attended local reactions would happen less often than the current nearly one in 100 vaccinated children.

"Our findings support current recommendations to give intramuscular vaccinations in the thigh for children younger than 3 years," Dr. Jackson said. Since 2011, the U.S. Advisory Committee on Immunization Practices (ACIP) has recommended that intramuscular vaccinations be given to toddlers aged 12 to 35 months preferably in the thigh muscle (or in the deltoid muscle of the arm only if it's big enough)—and to children age 3 years older in the deltoid muscle of the arm. But in practice, [health care providers](#) tend to vary in their choice of [vaccine](#) injection sites for children; and parents can influence that decision.

The research team also tracked local reactions in children age 3 to 6 years and from intramuscular vaccines other than DTaP, including inactivated [influenza](#) and [hepatitis](#) A. But they found no statistically significant differences between vaccinating in the thigh and arm in the older age group or for the other intramuscular vaccines.

Previous evaluations of local reactions after the fifth DTaP vaccine in children age 4 to 6 years found that vaccination in the thigh was linked to a lower risk of local reactions than was vaccination in the arm. Dr. Jackson also led an earlier study that showed that neither ibuprofen (Advil) nor acetaminophen (Tylenol) help prevent local reactions after that vaccine.

The current research followed [children age](#) 1 to 6 years who received intramuscular vaccines from 2002 to 2009 at the eight VSD sites: Group Health; Harvard Pilgrim Health Care in Boston; HealthPartners in Minneapolis; Marshfield Clinic in Wisconsin; Kaiser Permanente Colorado in Denver; Kaiser Permanente Northwest in Portland; Kaiser Permanente Northern California in Oakland; and Kaiser Permanente Southern California in Los Angeles. The VSD project is a collaborative effort between the Centers for Disease Control and Prevention (CDC)'s Immunization Safety Office and 10 managed care organizations, including these eight (whose research institutes also happen to be members of the HMO Research Network).

Provided by Group Health Research Institute

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