

# Study shows epinephrine auto-injectors and asthma inhalers used incorrectly

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Millions of Americans with severe allergies and asthma are prescribed medical devices to help relieve symptoms and sometimes, to treat potentially fatal allergic reactions. Unfortunately, very few people use their prescribed medical devices properly - even if they think they know how.

According to a new study published in the *Annals of Allergy, Asthma and Immunology*, the scientific publication of the American College of Allergy, Asthma and Immunology (ACAAI), misuse of [epinephrine](#) auto-injectors has been documented in cases of fatal anaphylaxis. In the study, only 16 percent of those prescribed epinephrine for severe [allergic reactions](#) used their auto-injector properly, and only 7 percent of those with metered-dose inhalers (MDI) for asthma used them in the right way.

"Our study suggests that either people weren't properly trained in how to use these devices, didn't completely understand the instructions even after training, or forgot the instructions over time," said allergist Rana Bonds, MD, ACAAI Fellow and lead author of the study. "Younger patients and those with prior medical education were more likely to use the auto-injector correctly."

The most common error for epinephrine users was not holding the unit in place for at least 10 seconds after triggering. Other common errors included failure to place the needle end of the [device](#) on the thigh, and failure to push down forcefully enough to activate the injection. The

most common mistake for those using inhalers was not exhaling prior to delivering the puff of medication in order to empty out the lungs as much as possible, so a very deep breath can be taken when the medicine is inhaled. Another common mistake was not shaking the inhaler before administering the second medication puff.

"Clearly there is room for improvement in how we teach patients to use these devices," said allergist Aasia Ghazi, MD, ACAAI member, and study author. "We need to consider repeated verbal instructions as well as more effective visual presentations. Improper use of the devices means people's lives are at stake, especially with epinephrine, and there is reduced value in the medicine they're trying to use. Most patients made multiple mistakes and steps were missed. They wouldn't benefit from these potentially life-saving tools if they were in trouble."

Provided by American College of Allergy, Asthma, and Immunology

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