

What you need to know:

Skin sensitivities & accelerators in medical gloves

Q: What are accelerators and why are they used in medical gloves?

A: Accelerators are chemicals used as part of the manufacturing process for traditional latex and synthetic materials used in the manufacturing of surgical and medical exam gloves. These chemicals help to stabilize the raw material during the curing process in order to form a strong and elastic surgical glove offering barrier protection and comfort.

There are four types of accelerators typically used:

- Thiurams
- Dithiocarbamates/Carbamates
- Mercaptobenzothiazoles (MBTs)
- Diphenylguanidine (DPG)

Of these rubber accelerators, Thiurams are the most common cause of rubber contact allergy.¹

Q: Can accelerators cause allergies or skin sensitivities?

A: Potentially, yes. While accelerators can potentially cause skin sensitivities, reactions to accelerators make up a relatively small percentage of the population. In a study conducted by the Cleveland Clinic, a patch test found 3.6 percent (23 out of 626) synthetic glove users with suspected allergic contact dermatitis (ACD) were found to react to an accelerant.²

Q: What specific skin sensitivities can these accelerators cause?

A: Accelerators can potentially cause ACD. This reaction is usually limited to the area of the skin where contact with rubber products occurs. Although not life-threatening, ACD can be a problem for healthcare workers. Rashes, dryness and other symptoms can be acute or chronic and appear 48 hours after exposure to the irritant. The source of hypersensitivity can be elusive because more than 4,000 chemicals are known to have the potential to trigger allergic reactions.²

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Sources:

- 1 American Latex Allergy Association Newsletter, May 2012. Available at: <https://latexallergyresources.org/sites/default/files/newsletter-attachments/The%20ALERT%20May%202012.pdf>. Accessed May 2016.
- 2 Cao, Lauren et. al., Allergic Contact Dermatitis to Synthetic Rubber Gloves: Changing Trends in Patch Test Reactions to Accelerators. JAMA Dermatology. Available at: <http://archderm.jamanetwork.com/article.aspx?articleid=421910>. Accessed May 2016.

Q: Are all skin sensitivities attributed to accelerators?

A: No. In fact, even with the shift from latex to synthetic, which has dramatically reduced allergic reactions to surgical gloves, clinicians may still experience allergic reactions on their hands and wrists — primarily from irritant contact dermatitis, a non-immunologic response. This could be caused by products related to clinical practice (harsh anti-microbial soaps, surgical scrub brushes) or those outside the work environment (detergents, fragrances). Also, seasonal weather changes, frequent hand-washing and certain jewelry properties can make someone susceptible to non-immunologic dermatitis.³

Q: What should clinicians do if they are experiencing skin sensitivities?

A: If you or members of your clinical staff are experiencing skin irritation, it's important to respond accurately to the cause — not base it on a hunch. Focus first on common non-immunologic reactions, such as soaps and vulnerability from damaged skin. Approved moisturizers, rehydrating products and glove liners may help. Detergents, fragrances and products used at work or outside are more common irritants than synthetic gloves.

It's important to mention that you should follow the direction of your facility's Occupational Health Services, hospital policy and/or your individual healthcare plan. If ACD is suspected, this may include an evaluation by a dermatologist or allergist for patch testing for specific agents. Patch tests exist for all accelerants.

Switching to non-accelerant gloves should be done if it is determined that the accelerant has caused an immune response. However, "glove hopping" — frequently switching gloves in response to dermatitis — is counterproductive because it's important to allow enough time for the wearer to adapt to a different glove or develop an understanding of delayed allergic reactions. For those with a diagnosed sensitivity to certain chemical accelerators, who still need to wear a surgical glove or a more protective exam glove, they may want to consider wearing a glove liner underneath the surgical or exam glove.

Sources:

- 3 Gardner, N. If my hands could speak. Health & Safety Middle East. May 2008. Available at: [http://www.shieldscientific.com/include/USER_FileUpload/files/Press%20Release/HSME-ifhandscouldspeak-middleeast-may2008%20article%20\(2\).pdf](http://www.shieldscientific.com/include/USER_FileUpload/files/Press%20Release/HSME-ifhandscouldspeak-middleeast-may2008%20article%20(2).pdf). Accessed May 2016.

