Second Skin

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The hands are one of, if not the, most important surgical tool. Protecting them with the right surgical glove is necessary for patient and staff safety, as well as a procedure's overall success.

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Infection control and patient and staff safety standards demand surgical team members to don gloves for protection against bloodborne pathogens and other infection risks. While the necessity for gloves in the OR may be set, clinicians must decipher between the many options and attributes available in a surgical glove. As Pam Werner, RN, BSN, MBA, a Clinical Consultant for Ansell, explains, once a clinician settles on the right glove, the focus can be turned back to the patient and the procedure.

"Once I have a glove that fits, feels and does what it is supposed to do, then you can concern yourself with the procedure," Werner says. "You have so many things to think about. Knowing that you're protected and your patient is protected makes everything more efficient."

Latex v. Synthetic

According to Carolyn Twomey, global head of clinical services for Molnlycke Health Care US, latex has long-been the gold standard for surgical gloves. In just the past few years, though, an increasing number of U.S. facilities have begun using more non-latex, or, as new FDA standards require the language to read, synthetic gloves. This shift is credited to latex-allergy concerns, the risks and costs associated with a latex-sensitive reaction, and to advances in synthetic glove materials.

As an alternative for latex-sensitive patients and staff, various synthetic materials have been developed. The most common, Twomey states, include polychloroprene (commonly known as neoprene) and polyisoprene. As Werner says, the raw materials to make these gloves are different. Natural rubber latex is harvested from Pará rubber (Hevea brasiliensis) trees. Neoprene and polyisoprene are petroleum-based. While polyisoprene feels the most like latex, synthetic gloves can differ in fit, feel, comfort and stretch.

Still, Twomey states the shift to synthetic gloves in many U.S. facilities is a risk management and financial strategy. While the acquisition cost of synthetic gloves may be higher than latex, the time and money associated with having to reset an OR because the patient has a latex allergy can cost a facility thousands of dollars, a price that is absorbed by the hospital.

Strength & Barrier Protection

As the main purpose of surgical gloves is to protect against blood borne pathogens

and prevent cross contamination, a glove's strength is important to consider. Part of this consideration includes the decision to go with a thick or thin glove. According to Mary Cross, RN, MBA, a clinical specialist for Cardinal Health, this often depends on the procedure.

Surgeons in sub-specialties such as plastics, neurosurgery, ophthalmology and cardiovascular often prefer thinner micro gloves for more tactile sensation. Procedures in which there is a higher expectation of coming into contact with instruments and sharp bones and/or blood borne pathogens, is where a thicker glove is often preferred, Cross says.

Another issue associated with strength and barrier protection is double gloving. According to Twomey, "the literature is overwhelming" showing that double gloving exponentially reduces the risk of blood contamination. "If you ask most practitioners that have had a barrier breach, most will tell you they didn't know until they took their glove off at the end of the procedure and have blood on their hand."

Several professional organizations, including the Association of periOperative Registered Nurses (AORN), the American College of Surgeons (ACS) and the American Academy of Orthopaedic Surgeons (AAOS) recommend double gloving in invasive procedures. Twomey also recommends the use of puncture indication technology - where a colored glove is worn under a neutral colored glove. If the top glove is punctured, the moisture will make the under glove color show, alerting the clinician they have a hole in their glove so they can change it.

Despite the literature and recommendations, some clinicians still resist double gloving, Cross says. Often, surgeons worry they will lose tactile sensation or they will feel restricted with movement. Finding the right-fitting gloves, she says, can help relieve these worries, and make double gloving possible. "Double gloving can take two to 120 days before it becomes a habit. It goes back to having the right fit and materials."

Fit, Feel and Comfort

"If you think about it, your hands are your most important surgical tool, and you have to protect it," Werner says. "Protection comes with a perceived cost – dexterity, tactile sensitivity and comfort over a number of hours. " Other attributes to think about should include:

Fit. "You want something that is not going to restrict any movement, and is going to act like a second skin," Cross says.

Feel. According to Twomey, grip and texture are not the same thing. "If you work in very wet fields, a grippy glove will help with hanging on to instruments, or if you're working with a lot of fat because fat is slippery." Texture enhances that perception of grip. "Moving from smooth to textured can be challenging because you feel the texture on your hands, making tissue and instruments handle very differently."

Comfort. As Cross says, a glove can be strong and thick, but not very soft, and sometimes, that does not meet the comfort needs of the clinician – something that

is crucial in a long procedure.

“The primary reason for gloves is to have the right barrier protection,” Cross says. “Secondly, fit, feel and comfort should give a second skin feel. They can just do the task without worrying about what’s on their hand.”

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