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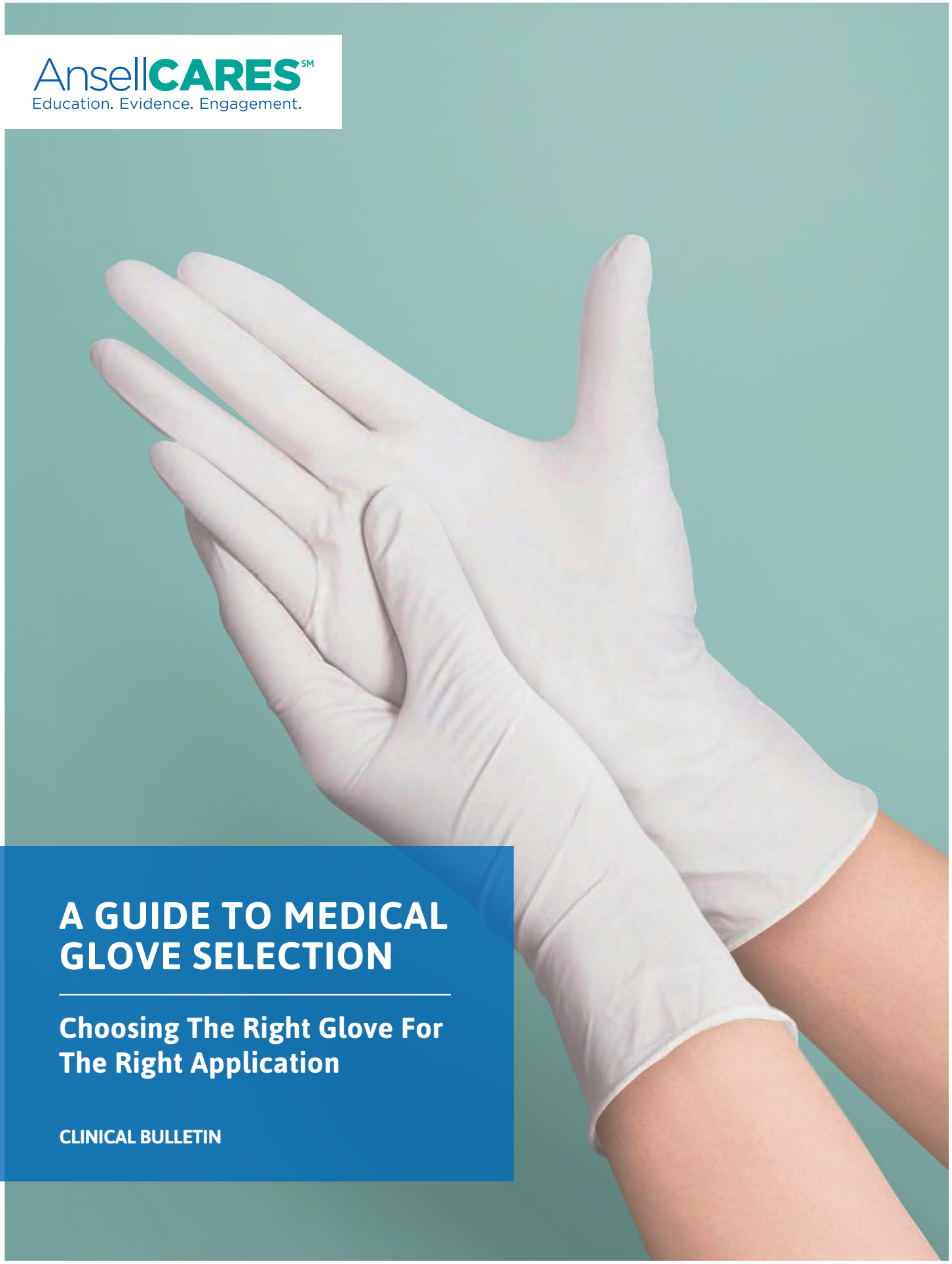

A GUIDE TO MEDICAL GLOVE SELECTION

Choosing The Right Glove For The Right Application

CLINICAL BULLETIN

HOW TO CHOOSE THE RIGHT GLOVE?

With the rise in awareness of latex and chemical allergies, and the increase in powder glove bans due to powder-related issues for both patient and healthcare provider, synthetic and powder-free latex medical gloves are the growing glove materials of choice. Each glove offers unique advantages but, at the same time, each of them comes with a certain amount of compromise in terms of barrier protection, durability, allergenicity, comfort, and cost.

No single glove provides the "perfect" solution for all applications, and it is impossible for a hospital to standardize on a single type of glove to meet all healthcare worker (HCW) needs.

Consideration of glove materials:

- **Latex**, available in surgical and examination gloves, is the oldest in the market. Natural rubber latex (NRL) has long been the benchmark standard for fit, feel, comfort, strength, and barrier protection. However, it carries both Type I latex and Type IV chemical allergy risks.
- **Vinyl**, available in examination gloves only, is not recommended as a suitable protective barrier against blood and body fluids. This material should not replace gloves made of latex, nitrile, or neoprene in high risk areas.
- **Nitrile**, available in examination gloves, has increased in popularity as the new generation are thinner and stronger while still offering tactile sensitivity. Nitrile provides excellent chemical resistance* and can also be suitable with the handling of chemotherapy agents.**
- **Polychloroprene** was the first surgical latex-free offering in the operating room, and also now available in examination gloves. It also offered a chemical accelerator free alternative for HCW's with Type IV chemical allergies. The original polymer felt tighter and more restrictive then latex, however newer and innovative formulations have resulted in gloves that are softer, with improved sensitivity, dexterity and overall similar feel to latex. Polychloroprene gloves may also be a suitable glove for chemotherapy** and chemical* handling.
- **Polyisoprene**, available in surgical gloves, is a latex-like synthetic glove film. It offers exceptional comfort and tactile sensitivity as well as puncture and abrasion resistance. Advances in technology with the advent of newer formulations offer improvement in performance. Polyisoprene gloves may also be a suitable glove for chemotherapy** handling.
- **Synthetic Hybrids,** available in both surgical and examination gloves, are increasing in use. They combine the best attributes of a variety of synthetic materials, such as comfort and strength, into one glove formula.

* *Tested with EN 16523-1:2015+A1:2018 Determination of resistance to permeation by liquid chemicals and ASTM F739 Standard Test Method for Permeation of Liquids and Gases Through Protective Clothing Materials Under Conditions of Continuous Contact.*

** *Tested with ASTM D6978 Standard practice for assessment of resistance of medical gloves to permeation of chemotherapy drugs.*

When selecting gloves for practice, it is important to ensure that the product is functional and effective. Involve staff members in evaluations and the product decision. Evaluate gloves for quality, flexibility, durability, and other attributes identified for specific tasks.

The initial cost of the glove can be taken into account, but also the indirect costs resulting from the impact of allergies, and potential waste from gloves tearing.

GLOVE MATERIAL PERFORMANCE

Glove Type	Natural Rubber Latex (NRL) *(Surgical/Exam)*	Polyisoprene (PI) *(Surgical)*	Polychloroprene (Neoprene) *(Surgical/Exam)*	Nitrile *(Exam)*	Vinyl *(Exam)*	Hybrid *(Surgical/Exam)*
Level of Barrier Protection	**Excellent** Benchmark for barrier protection due to its strength and elasticity.	**Excellent** Provides durability with a high puncture resistance.	**Excellent** Provides barrier protection similar to latex.	**Excellent** Film is highly resistant to punctures and tears.	**Poor** During use breaks and punctures easily. Fit is baggy at wrist with short cuff.	**Excellent** Provides high durability and strength.
Allergen Content	**Varies / Poor** Contains latex proteins & chemical allergens known to cause Type I latex and Type IV chemical allergies.	**Very Good** Contains no latex proteins although contains chemical accelerators known to cause Type IV chemical allergies.	**Very Good / Excellent** Contains no latex proteins. May contain chemical accelerators known to cause Type IV chemical allergies.	**Very Good** Contains no latex proteins. May contain curing agents & other chemical accelerators known to cause Type IV chemical allergies.	**Good** No latex proteins or chemical accelerators. May contain other chemical ingredients; vinyl due to its occlusive barrier may exacerbate skin dermatosis.	**Very Good** No latex proteins. May contain chemical accelerators known to cause Type IV chemical allergies.
Strength & Durability	**Excellent** NRL is strong and durable. Offers high tensile strength, considered the gold standard of glove material.	**Excellent** Extremely strong with superior resistance. Offers high tensile strength, similar to NRL film.	**Excellent** Very durable with good tear resistance.	**Excellent** Film is extremely strong with puncture resistance superior to all glove films. Offers high tensile strength.	**Poor** The weakest of the medical examination glove films. Tends to break and puncture easily when stressed.	**Excellent** Extremely strong. Offers high tensile strength.
Elasticity	**Excellent** Elasticity is superior to other glove films. Excellent memory i.e. the film returns to its original shape.	**Excellent** Closest to latex, with very high memory so the film retains its original shape.	**Very Good** Elasticity is close to that of latex and memory is very high, allowing the film to retain its original shape.	**Very Good** Elasticity is very good. Exhibits some memory, allowing the film to adapt to the wearer's hand.	**Fair / Poor** Elasticity is limited and varies from brand to brand. The film exhibits limited memory.	**Excellent** Elasticity is superior with high memory.
Fit, Comfort	**Excellent** Latex provides excellent comfort and fit due to its elasticity and memory properties.	**Excellent** Provides latex-like comfort and fit due to its physical properties.	**Very Good** Excellent comfort and fit due to its high elasticity and memory. New formulations provide latex-like fit & comfort.	**Very Good** Very good comfort & fit due to its high elasticity & memory. Sometimes a tighter fit but gloves soften and conform to the hand over wear time.	**Fair** Low elasticity limits, fit and comfort. Wrist diameter is very large making the glove baggy around the cuff.	**Excellent** Formulations can provide latex-like comfort and fit.
Economy	**Good** Initial cost may be lower, but direct and indirect cost need to be considered with impact of Type I latex allergy risk.	**Very Good** Initial cost may be more than latex, but cost benefit for safer and more efficient operating room from risk of Type I latex allergy.	**Very Good** Initial cost may be more than latex, but cost benefit for safer and more efficient operating room from risk of Type I latex and Type IV chemical allergies.	**Very Good** Exam costs are typically similar to those of latex exam gloves.	**Good** A low-cost alternative if allergies are a concern, and not being exposed to biological hazards.	**Very Good** A lower cost non-latex alternative. The initial cost may be more than latex, but cost benefit for safer and more efficient operating room from risk of Type I latex allergy.

Tensile strength is the required force to the breaking point of a glove when stretched.

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