

Barrier durability of latex and vinyl medical gloves in clinical settings

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This study evaluated changes in the tensile strength and barrier integrity of medical gloves during hospital clinical use. Nonsterile vinyl, sterile vinyl, and nonsterile natural rubber latex gloves were collected after use in a clinical setting and then tested for tensile strength, elongation, and water leakage.

Tensile properties of vinyl gloves did not change during use, whereas changes in latex depended on the brand evaluated. New gloves, regardless of material of manufacture, were found to have leakage rates of 2% or less. Two brands of nonsterile vinyl gloves were found to have an average rate of leakage after use of 24 to 28% (average 26%), three brands of latex gloves of 6 to 10% (average 8%), and one brand of sterile vinyl gloves of 3%. Low-protein powderless latex gloves leaked slightly less than the powdered brands.

The high rates of leakage observed for nonsterile vinyl gloves indicate that they provide less barrier protection than latex in typical hospital use. The low leakage rate observed for sterile vinyl gloves indicates that barrier durability is not solely a function of the generic polymer composition of the barrier.

SOURCE: US National Library of Medicine (NLM) and PubMed.