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Integrity of Latex Gloves

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Researchers from John Hopkins school of medicine recently conducted a study to assess the loss of integrity of the latex-glove barrier during use in the emergency department (ED) setting. A prospective observational study was conducted in an urban ED and level I trauma center. Procedures performed by ED healthcare workers (HCWs) were directly observed, timed, and categorized. The gloves used by the HCWs were collected and subjected to the standard US FDA leak test.

The results showed that 99 (7.9%) of 1,254 pairs of gloves used for observed procedures leaked, compared with 2 of 200 unworn control pairs (1.0%) and 12 of 300 pairs that were worn but not used (4.0%). Leak rates varied by manufacturer and were higher for gloves worn 20 minutes or longer (13.7%; P=.015), used for four or more procedures (50%; P<.01), or used for critical-care procedures (23.5%; P<.01). Sixty-six of an additional 325 pairs of gloves collected from unobserved critical-care procedures (20.3%) leaked.

The researchers concluded that loss of glove integrity occurs during the performance of ED procedures, subjecting the HCW to possible infectious-fluid exposure. Risk of glove perforation increases with duration of wear, number of procedures performed, and the performance of critical-care procedures.

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