

Leakage of latex and vinyl exam gloves in high and low risk clinical settings

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The purpose of this study was to compare leakage rates of used latex and vinyl examination gloves from high and low risk clinical units. A total of 4838 latex and 1008 vinyl examination gloves were collected and tested by the Food and Drug Administration (FDA) watertight leak test: three brands of latex [Brand A: n = 2920; Brand B: n = 284; Brand C: n = 1634; and one brand of vinyl gloves (Brand D: n = 1008)]. Seventy percent of latex gloves and 46.7% of vinyl gloves were collected from the high risk units.

In general, there were no significant differences in leakage rates for vinyl gloves between high and low risk units. However, latex gloves leaked significantly more often at stress levels 2 and 3 from the high risk units as compared to the low risk units ($X^2 = 24.6$, $p < .0001$). Regardless of level of stress and duration worn, 85.3% (860/1008) of used vinyl gloves and 18.4% (891/4838) of used latex gloves leaked, $p < .001$. There were significant differences in leakage rates between the three brands of latex gloves (Brand A, 9.8%; Brand B, 25.1%; Brand C, 30.9%, $p < .001$).

Although latex gloves leaked slightly more frequently as stress level increased, glove material (latex or vinyl) and brand of glove were the most important predictors of leakage.

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