

N95 respirators v. surgical masks: Protecting health workers from respiratory infections

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Accumulated evidence does not indicate superiority of N95 respirators over surgical masks in protecting health care workers from contracting acute respiratory infections from patients, according to a systematic review in *CMAJ* (*Canadian Medical Association Journal*).

"Since the outbreak of severe acute respiratory syndrome (SARS), there has been a heightened level of controversy within Canada in determining the optimal ways to protect health care workers from [respiratory pathogens](#)," notes Dr. Gary Garber, chief of infection prevention and control at Public Health Ontario.

Current guidelines provide differing recommendations on whether N95 respirators should be used. Studies in laboratory settings indicate that N95 respirators should offer better protection from [acute respiratory infections](#) than surgical masks. However, randomized controlled trials (RCTs) in clinical settings have not shown the same benefit.

In this [systematic review](#), researchers reviewed studies conducted over 25 years to determine whether N95 respirators offered better protection for health care workers than surgical masks.

"No significant difference in risk of laboratory-confirmed respiratory infection was detected between health care workers using N95 respirators and those using [surgical masks](#) in the meta-analysis of the RCTs [randomized controlled trials], ... the cohort study ... or the case-control studies," state the authors.

The authors recommend that RCTs evaluating N95 respirators in clinical environments are needed to account for human behaviour on the effectiveness of these devices to protect against infection.

"Transmission of acute respiratory infections is a complex process that may not be appropriately replicated by surrogate exposure studies," write the authors. "N95 respirators are often considered uncomfortable for regular use, and improper wearing or adjustment of the respirator because of discomfort could lead to inadvertent face contamination, thus negating the potential protective benefit."

"The findings of this study are consistent with use of respiratory protective equipment as just one component of an [infection control program](#) and that the other components of an infection control program are necessary to adequately control risk to [health care workers](#)," says Dr. Garber.

More information: *Canadian Medical Association Journal*,
www.cmaj.ca/lookup/doi/10.1503/cmaj.150835

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