

# Surgical masks vs. N95 respirators for preventing influenza among health care workers

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Surgical masks appear to be no worse than, and nearly as effective as N95 respirators in preventing influenza in health care workers, according to a study released early online today by *JAMA*. The study was posted online ahead of print because of its public health implications. It will be published in the November 4 issue of *JAMA*.

Influenza is the most important cause of medically attended acute respiratory illness worldwide and the authors write there is heightened concern this year because of the [influenza](#) pandemic due to the H1N1 virus. "Data about the effectiveness of the surgical mask compared with the N95 respirator for protecting health care workers against influenza are sparse," the authors provide as background information in the article. "Given the likelihood that N95 respirators will be in short supply during a pandemic and not available in many countries, knowing the effectiveness of the surgical mask is of public health importance."

Mark Loeb, M.D., M.Sc., from McMaster University, Hamilton, Ontario, Canada, and colleagues conducted a randomized controlled trial of 446 nurses in eight Ontario hospitals to compare the surgical mask with the N95 respirator in protecting health care workers against influenza. The nurses were randomized into two groups: 225 were assigned to receive surgical masks and 221 were assigned to receive the fitted N95 respirator which they were to wear when caring for patients with febrile (fever) respiratory illness. The primary outcome of the study was laboratory-confirmed influenza. Effectiveness of the surgical mask was assessed as non-inferiority of the surgical mask compared with the N95 respirator.

Between September 23, 2008 and December 8, 2008, "[influenza infection](#) occurred in 50 nurses (23.6 percent) in the surgical mask group and in 48

(22.9 percent) in the N95 respirator group (absolute risk difference -0.73 percent)," indicating non-inferiority of the surgical mask the authors report. Even among those nurses who had an increased level of the circulating pandemic 2009 H1N1 influenza strain, non-inferiority was demonstrated between the surgical mask group and the N95 respirator group for the 2009 influenza A(H1N1).

"Our data show that the incidence of laboratory-confirmed influenza was similar in nurses wearing the [surgical mask](#) and those wearing the N95 respirator. Surgical masks had an estimated efficacy within 1 percent of N95 respirators," the authors write. "That is, surgical masks appeared to be no worse, within a prespecified margin, than N95 respirators in preventing influenza."

In conclusion the authors state: "Our findings apply to routine care in the health care setting. They should not be generalized to settings where there is a high risk for aerosolization, such as intubation or bronchoscopy, where use of an N95 respirator would be prudent. In routine health care settings, particularly where the availability of N95 respirators is limited, surgical masks appear to be non-inferior to N95 respirators for protecting [health care workers](#) against influenza."

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