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Carl Sagan once said “extraordinary claims require extraordinary evidence”.³ Such evidence was not presented, and the conclusions only muddied the waters as to whether face mask wearing protects against viral respiratory diseases, a claim that not even manufacturers of face masks dare to make.

I declare no competing interests.

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- 1 Chu DK, Akl EA, Duda S, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *Lancet* 2020; **395**: 1973–87.
- 2 Wang X, Pan Z, Cheng Z. Association between 2019-nCoV transmission and N95 respirator use. *J Hosp Infect* 2020; **105**: 104–05.
- 3 Tressoldi PE. Extraordinary claims require extraordinary evidence: the case of non-local perception, a classical and Bayesian review of evidences. *Front Psychol* 2011; **2**: 117.
- 4 MacIntyre CR, Wang Q. Physical distancing, face masks, and eye protection for prevention of COVID-19. *Lancet* 2020; **395**: 1950–51.
- 5 WHO. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. March 19, 2020. [https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125) (accessed June 5, 2020).
- 6 Jefferson T, Del Mar CB, Dooley L, et al. Physical interventions to interrupt or reduce the spread of respiratory viruses. *Cochrane Database Syst Rev* 2020; **11**: CD006207.
- 7 Bartoszko JJ, Farooqi MAM, Alhazzani W, Loeb M. Medical masks vs N95 respirators for preventing COVID-19 in healthcare workers: a systematic review and meta-analysis of randomized trials. *Influenza Other Respir Viruses* 2020; **14**: 365–73.

Derek Chu and colleagues¹ concluded, based on an analysis of a subgroup of observational studies, that health-care workers might afford greater protection against SARS-CoV-2 infection from N95 respirators than from surgical masks. They acknowledge substantial limitations and rated certainty of effect as low. We would argue it is lower still, as several studies seem to have been misclassified with regard to mask type.

Yet in the linked Comment, C Raina MacIntyre and Quanyi Wang² stated that, based on those findings, N95s should be standard of care for all health-care workers working on COVID-19 wards and that guidelines³ be promptly reviewed. This statement disregards the important limitations of observational studies (eg, recall bias and limited ability to control for additional exposures), analytical shortcomings, and that the difference in protection between masks was statistically significant only when accounting for aerosol-generating procedures, consistent

with guidelines.³ Also ignored were multiple systematic reviews of N95s versus surgical masks that consistently found no significant differences in risk of respiratory illness, influenza-like illness, or the most robust outcome of laboratory-confirmed viral infection (including non-influenza respiratory viruses), after adjustment for clustering.^{4,5}

Responsible policy recommendations should weigh the totality of available evidence, with major consideration given to quality. To call for sweeping changes in policy² based on low-certainty findings that are highly susceptible to bias and contradict higher quality evidence is scientifically unjustified, and it does a disservice to front-line health-care workers relying on balanced, evidence-informed recommendations to guide use of personal protective equipment.

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- 1 Chu DK, Akl EA, Duda S, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *Lancet* 2020; **395**: 1973–87.

Derek Chu and colleagues reported that face mask wearing in hospitals and health-care settings reduces risk of respiratory infection.¹ Surprisingly, this recommendation was extended to the general population. Summary estimates were calculated using results of three severe acute respiratory syndrome studies, of which only two yielded statistically significant results. The first study was done in households, a situation that is similar to a health-care setting.² The second was a case-control study in the general population where infected and uninfected individuals were asked via telephone interviews whether they had worn a mask during past interactions.³ This second study, in which the rate of infections was measured after the face mask use, is therefore not prospective but the type of study that is likely to suffer from recall bias. A meta-analysis of 33 randomised and observational studies, including studies done in schools and universities, showed no effect of face masks on the probability of developing influenza-like illness.⁴ Finally, in a Danish randomised controlled trial done (April–May, 2020), the recommendation to wear surgical masks outside the home (concomitant to other adopted public health measures) did not reduce SARS-CoV-2 infection rate in mask wearers at conventional levels of statistical