

## What questions did we want to answer?

- 1) What is the effectiveness of wearing a mask in comparison to not wearing one in reducing new infections, transmission, hospitalizations, and deaths related to four respiratory diseases (COVID-19, seasonal influenza, H1N1 (swine flu), and respiratory syncytial virus (RSV)) in community and healthcare settings?
- 2) What is the effectiveness of different types of masks (respirators, medical, and non-medical masks) in reducing new infections, transmission, hospitalizations, and deaths related to four respiratory diseases (COVID-19, seasonal influenza, H1N1, and RSV) in community and healthcare settings?
- 3) What is the effectiveness of mask mandates in reducing infections, transmission, hospitalizations, and deaths related to COVID-19, seasonal influenza, H1N1, and RSV?

## Living Evidence Synthesis: Plain language summary

**Effectiveness of masking in community and healthcare settings for reducing the incidence, transmission, hospitalizations and deaths from respiratory infectious diseases**

**25 March 2024** (Summary last updated on 26 June 2024)

MHF product code: LES 14.2

### Key Terms

**Effectiveness:** Assessment of whether an intervention improves an outcome under 'real-world' conditions

**Respirators:** A device covering the mouth and nose to reduce exposure to airborne contaminants such as particles, gases or vapours

**N95:** Respirators classified as not resistant to oil and that can filter particles with a minimum filtration efficiency of 95% (i.e., the ability to filter 95% of particles that are a mean size of 0.3 microns)

**FFP2:** Respirators classified as providing 94% particle filtration (i.e., the ability to filter out particles from the air) and less than 8% inward air leakage (i.e., leakage of unfiltered air, such as through an improper seal between the face and the mask)

**Fit-tested:** A test protocol done to verify that a respirator is both comfortable and provides the wearer with the expected protection

## What are the key results?

### Question 1: Effectiveness of mask-wearing in comparison to no mask-wearing

- Most studies found a benefit of wearing masks for reducing infections, transmission, and deaths for all infections studied, both in the community and in healthcare settings
- Other studies found no difference

### Question 2: Comparative effectiveness of different types of masks

- Most studies found that wearing a N95 respirator or a medical mask protected better than not wearing a mask
- Most studies also found that a N95 respirator reduced transmission more than medical masks, although studies on influenza in a healthcare setting found that a N95 respirator was no better than a medical mask to reduce transmission

- It was noted that wearing a mask or respirator consistently and appropriately gave significantly higher protection
- Multiple studies on various respiratory infections found that a fit-tested N95 respirator protected the best, followed by a N95 respirator or FFP2 mask that was not fit-tested, both of which protected better than not wearing a mask

### **Question 3: Effectiveness of mask mandates in comparison to no mandate**

- Most studies done in the community found a benefit in reducing infections, transmission, hospitalizations and deaths
- Most studies done in a healthcare setting found a benefit in reducing infections and transmission
- Other studies found no difference
- In the only study that considered equity, it was found that mask mandates had a positive effect by reducing infections and deaths in those living in the socially vulnerable counties in New York State, and made these outcomes more similar to other groups

## **Why was this done?**

- Masks were recommended early on in the COVID-19 pandemic to prevent transmission in healthcare and community settings
- Different types of masks were available to use, including:
  - respirators such as N95 or FFP2 masks
  - medical masks such as blue surgical masks
  - non-medical masks such as fabric or paper masks
- There is now a need to update recommendations on using masks based on the best-available evidence about mask use for respiratory infectious diseases, such as COVID-19, seasonal influenza, H1N1 and respiratory syncytial virus (RSV)
- This report was requested by the Public Health Agency of Canada to gather the best-available evidence about the effectiveness of mask-wearing for reducing new infections, transmission, hospitalizations and deaths related to respiratory infectious diseases

## **How up to date is this?**

- Our searches were conducted in February 2024 for any literature published since 2000, and almost all the included studies were published between 2020-2023

## **How did we conduct the research?**

- We searched multiple electronic databases to find scientific studies on the topic
- Our searches identified over 5,000 articles, from which we included 186 studies that addressed any of the three questions
- We then put together findings from these studies for each of the questions and presented findings from healthcare settings and community settings separately

## **How confident are we in the results?**

- A limitation of most studies included is that the benefits of wearing masks depends on how people use them

- For example, the consistency of wearing a mask or whether it always covers the mouth and nose makes it hard to measure use and makes comparisons difficult
- However, given that we found a large volume of recent studies and the findings are consistent among them, we are confident that masking is beneficial, especially with a well-fitted N95 respirator or equivalent.

**This summary is based on a larger report that can be [found here](#).**

**Citation:** This Plain Language Summary can be cited using the citation of the main product, which is: Vélez CM, Wilson MG, Lavis JN. Living Evidence Synthesis 14.2: Effectiveness of masking in community and healthcare settings for reducing the incidence, transmission, hospitalizations and deaths from respiratory infectious diseases. Hamilton: McMaster Health Forum, 25 March 2024

**Citizen partner acknowledgement:** We are thankful to our citizen partners Annie-Danielle Grenier and Marion Knutson for their contribution to the living evidence synthesis and drafting this plain-language summary of it.

This plain language summary was commissioned and funded by the Office of the Chief Science Officer, Public Health Agency of Canada. The opinions, results, and conclusions are those of the team that prepared the evidence synthesis, and independent of the Government of Canada and the Public Health Agency of Canada. No endorsement by the Government of Canada or the Public Health Agency of Canada is intended or should be inferred.