

In brief

Facial hair, masks and COVID-19 transmission

11 June 2021

Background

- Tight-fitting respirator face masks such as N95 or filtering facepiece masks are considered the [reference standard](#) respiratory protective equipment for healthcare workers working in aerosol-generating procedures. Optimal use of these depends on a tight seal with the wearer's skin.(1)
- The purpose of fit testing is to ensure that the selected make, model and size of a respirator issued to a wearer forms an adequate seal around the wearer's face providing protection. The Critical Intelligence Unit has published an evidence check on [respirator fit testing](#).(2)
- The [Clinical Excellence Commission](#) recommends that healthcare workers must not have any facial hair present when commencing fit testing and when using a respirator.(3) International organisations consistently describe [facial hair as a contraindication](#) to the workplace use of tight-fitting respirator masks.(4)
- Many organisations, for example the US Centers for Disease Control and Prevention, provide [graphics depicting facial hairstyles](#) and filtering facepiece respirators (Figure 1).(5)
- A requirement to be clean shaven to facilitate the effective wearing of respiratory protective equipment may [indirectly discriminate](#) against certain groups.(6)
- The COVID-19 pandemic has seen a [shift away from beards](#) towards clean shaves in response to personal protective equipment guidance.(7)

Facial hair and respirator fit

- Evidence suggests that beards can cause an [impaired seal](#), reduced fit factors and detrimental impacts on respirator performance. Studies have shown that adequate [respirator fit decreases](#) significantly with increasing facial hair, and is associated with [worsening protection](#).(1, 4, 8)
- A study comparing the fitted filtration efficiency of five commonly worn masks found N95 respirators offer the [best respiratory protection](#) for bearded men. While KF94 and KN95 fitted filtration efficiency was compromised by increasing beard length, they were better options than procedure and cotton face masks.(4)

Measures for protection

- [Removal of facial hair](#) for reasons other than religious or cultural has been advised to help with the seal of the FFP3/FFP2 masks.(9)
- It has been suggested that an adequate seal can be achieved by using a [thin cloth tied over a beard](#), however currently the efficacy of this method has not been proven.(9)
- In one study, a [simple resistance exercise band](#) tested on five bearded volunteers improved fitted filtration efficiency for face masks commonly used (N95, KF94, KN95 and procedure mask) by bearded men during the COVID-19 pandemic.(4)
- A technique known as the [Singh Thattha](#) technique is where the under-mask beard cover is applied to cover the beard over the chin and cheeks and tie the knot at the top of the head. It

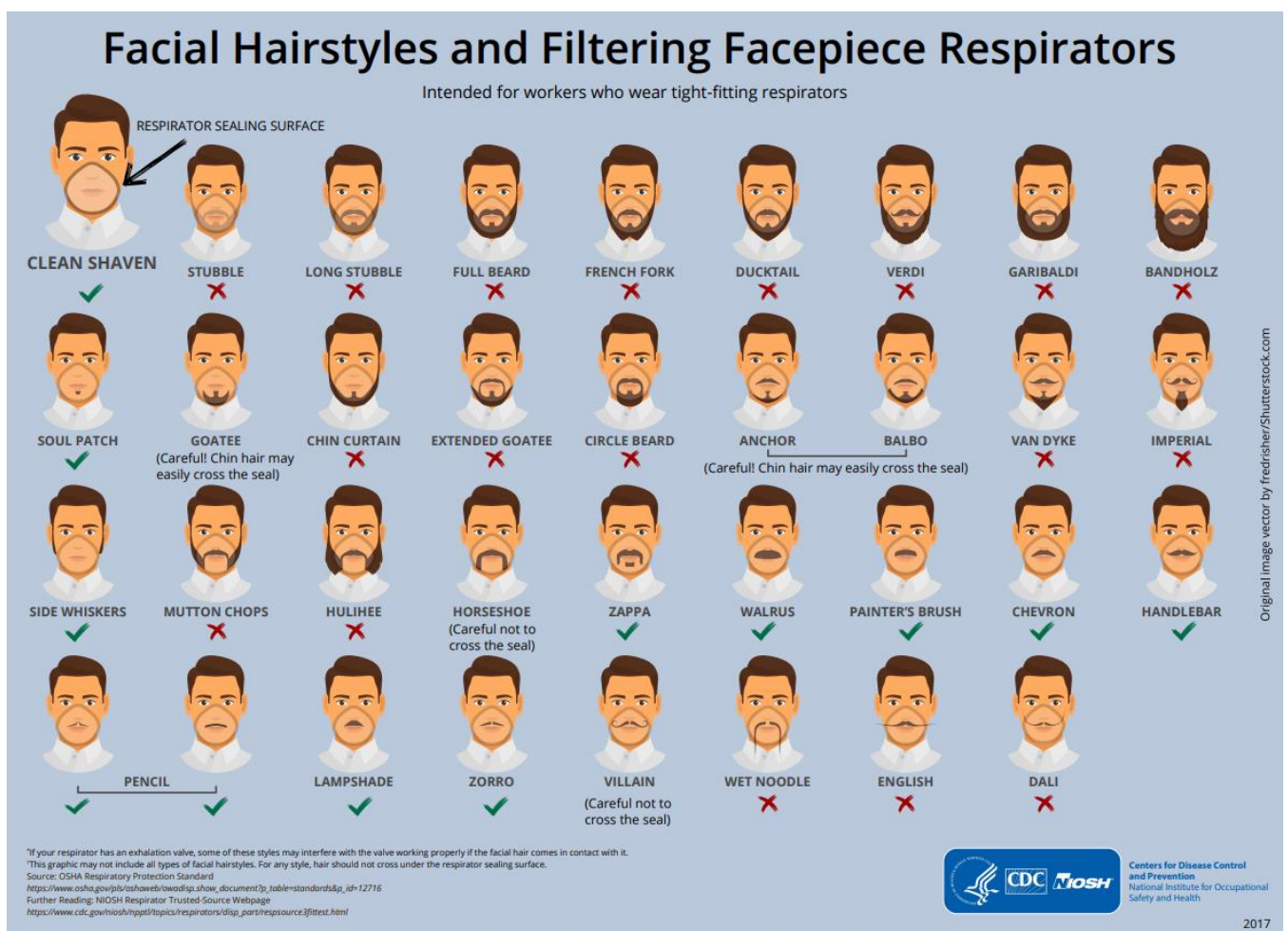
has been adopted and tested by bearded British Sikh dentists and when tested, 25 of 27 passed the qualitative fit test, and five of five passed the quantitative fit test.(1)

- The two studies mentioned above have very small sample sizes. Studies with larger sample sizes on protection measures for those who need to maintain the beards are needed.

COVID-19 transmission

- As evidence shows beards can cause an [impaired seal](#), it has been suggested that this may put people at an [increased risk of COVID-19 transmission](#). However to date, there is no direct evidence of increase transmission for people with facial hair.(10)

Figure 1: facial hair and respirators



Source: US [Centers for Disease Control and Prevention](#)

To inform this brief, PubMed and google searches were conducted using terms related to ((beard OR facial hair) AND (mask OR transmission) AND COVID-19) on 10 June 2021. The Critical Intelligence Unit has published an evidence check on [respirator fit testing](#) and maintains a living evidence table on [COVID-19 transmission](#).

References

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