

February 25, 2021

OFFICIAL STATEMENT FROM SPEECH-LANGUAGE & AUDIOLOGY CANADA (SAC)

Official Statement on the Use of Transparent Masks

Transparent masks, when used with additional supports and strategies, can facilitate communication by overcoming some of the communication barriers associated with masks and face coverings.

Medical masks, face shields, N95 respirators and non-medical masks are necessary to mitigate the spread of COVID-19 (Public Health Agency of Canada [PHAC], 2021b, d). However, **masks and face coverings change communication for everyone** and create additional communication barriers for people with hearing loss and/or communication difficulties (Baltimore & Atcherson, 2020; Atcherson et al., 2017).

In Canada, an estimated 4.6 million adults have hearing loss that affects their ability to hear typical speech and an estimated 8.4 million adults have some degree of high-frequency hearing loss (Feder et al., 2015). As many as 1 in 5 children in elementary school experience temporary hearing loss (e.g. due to ear infections) during the school year (Bluestone, 2004). As well, more than 10% of school-aged children have speech, language and communication challenges (Beitchman et al., 1986; Norbury et al., 2016). In older adults, communication difficulties are often associated with neurological conditions such as stroke and Parkinson's disease (Miller et al., 2006; Flowers et al., 2013).

Transparent masks can facilitate communication for people with hearing loss and communication difficulties and assist when providing speech-language pathology and audiology services during the COVID-19 pandemic (Baltimore & Atcherson, 2020; PHAC, 2021a, c). Transparent masks preserve important visual cues (e.g. for lip/speech reading) and facial expressions critical for effective communication; however, masks and face coverings may dampen and/or degrade the speech signal (Atcherson et al., 2017; Corey et al., 2020).

When using any mask or face covering, communication supports and strategies are necessary to facilitate effective communication, especially in challenging listening environments such as hospitals, clinics and schools. Non-medical masks made of loosely woven cotton and medical masks can attenuate speech by 3-4 decibels (dB) (Corey et al., 2020; Goldin et al., 2020). Transparent masks, face shields and N95 respirators can dampen speech by as much as 12 dB (Atcherson et al., 2017; Corey et al., 2020). Medical masks and N95 respirators also degrade speech because they act as a low-pass filter and affect high-frequency sounds important for speech discrimination (Corey et al., 2020; Goldin et al., 2020). A reduction in higher frequencies can affect our ability to hear in the presence of background noise, and contribute to poor speech recognition and increased listening effort, especially in those with hearing



loss (Hicks & Tharpe, 2002; Stelmachowicz et al., 2001). This can also be problematic for children as they require greater access to high frequencies for speech understanding (Stelmachowicz et al., 2007). Speech-language pathologists, audiologists and communication health assistants conduct point-of-care risk assessments to inform safe practices during the COVID-19 pandemic, including the appropriate use of transparent masks. SAC members and associates should refer to infection prevention and control guidance about the level of protection that transparent masks provide against COVID-19.

SAC continues to advocate for improved access to transparent masks in Canada.

References

Atcherson, S. R., Mendel, L. L., Baltimore, W. J., Patro, C., Lee, S., Pousson, M., & Spann, M. J. (2017). The effect of conventional and transparent surgical masks on speech understanding in individuals with and without hearing loss. *Journal of the American Academy of Audiology*, 28(1), 58–67.

<https://doi.org/10.3766/jaaa.15151>

Baltimore, W. J., & Atcherson, S. R. (2020, June 1). Helping our clients parse speech through masks during COVID-19. *ASHA Leader Live*. <https://leader.pubs.asha.org/do/10.1044/leader.MIW.25062020.34/full/>

Beitchman, J., H., Nair, R., Clegg, M., & Patel, P. G. (1986). Prevalence of speech and language disorders in 5-year-old kindergarten children in the Ottawa-Carleton region. *Journal of Speech and Hearing Disorders*, 51, 98-110.

Bluestone, C. D. (2004). Studies in otitis media: Children's Hospital of Pittsburgh–University of Pittsburgh progress report—2004. *The Laryngoscope*, 114(S105), 1-26.

Corey, R. M., Jones, U., & Singer, A. C. (2020). Acoustic effects of medical, cloth, and transparent face masks on speech signals. *arXiv preprint arXiv:2008.04521*.

Feder, K. P., Michaud, D., Ramage-Morin, P., McNamee, J., & Beauregard, Y. (2015). *Prevalence of hearing loss among Canadians aged 20 to 79: Audiometric results from the 2012/2013 Canadian Health Measures Survey*. Statistics Canada.

Flowers, H. L., Silver, F. L., Fang, J., Rochon, E., & Martino, R. (2013). The incidence, co-occurrence, and predictors of dysphagia, dysarthria, and aphasia after first-ever acute ischemic stroke. *Journal of Communication Disorders*, 46(3), 238-248.

Goldin, A., Weinstein, B. E., & Shiman, N. (2020). How do medical masks degrade speech reception. *Hearing Review*. May.

Hicks, C. B., & Tharpe, A. M. (2002). Listening effort and fatigue in school-age children with and without hearing loss. *Journal of Speech, Language, and Hearing Research*.

Miller, N., Noble, E., Jones, D., & Burn, D. (2006). Life with communication changes in Parkinson's disease. *Age and Ageing*, 35(3), 235-239.

Norbury, C.F., Gooch, D., Wray, C., Baird, G., Charman, T., Simonoff, E., ... & Pickles, A. (2016). The impact of nonverbal ability on prevalence and clinical presentation of language disorder: Evidence from a population study. *Journal of Child Psychology and Psychiatry*, 57(11), 1247-1257. doi:10.1111/jcpp.12573



Speech-Language & Audiology Canada
Orthophonie et Audiologie Canada
Communicating care | La communication à coeur

Public Health Agency of Canada (PHAC) (2021a). *COVID-19 Guidance for Schools Kindergarten to Grade 12*. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/guidance-schools-childcare-programs.html>

Public Health Agency of Canada (PHAC) (2021b). *COVID-19 Medical Masks and Respirators*. <https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-industry/medical-devices/personal-protective-equipment/medical-masks-respirators.html>

Public Health Agency of Canada (PHAC) (2021c). *COVID-19 and People with Disabilities in Canada*. <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/guidance-documents/people-with-disabilities.html#a2>

Public Health Agency of Canada (PHAC) (2021d). *Non-Medical Masks: About* <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/prevention-risks/about-non-medical-masks-face-coverings.html>

Speech-Language & Audiology Canada. (2020, June 22). COVID-19 Update: Update on Clear Masks. <https://www.sac-oac.ca/news-events/news/update-transparent-masks-available-canada-0>

Stelmachowicz, P. G., Pittman, A. L., Hoover, B. M., & Lewis, D. E. (2001). Effect of stimulus bandwidth on the perception of /s/ in normal-and hearing-impaired children and adults. *The Journal of the Acoustical Society of America*, 110(4), 2183-2190.

Stelmachowicz, P. G., Lewis, D. E., Choi, S., & Hoover, B. (2007). The effect of stimulus bandwidth on auditory skills in normal-hearing and hearing-impaired children. *Ear and Hearing*, 28(4), 483.

This SAC Official Statement has been developed based on the best available evidence in the context of a rapidly evolving health care emergency and is subject to change as additional information becomes available.

About SAC

Speech-Language & Audiology Canada (SAC) is a member-driven organization that supports and promotes the professions of more than 6,500 members and associates. We are the only national organization passionately supporting and representing speech-language pathologists, audiologists and communication health assistants inclusively. Through this support, we champion the needs of people with communication disorders. Visit www.sac-oac.ca to learn more.

Media inquiries:

Jacinta Cillis-Asquith
jacinta@sac-oac.ca
Tel: 613-567-9968

Emily Banzet
Email: emily@sac-oac.ca
Tel: 613-567-9968