

## Nasopharyngeal Swabbing for COVID-19 Testing in Children: Challenges and Solutions

Sir,

The World Health Organization recommended public health strategies to contain the COVID 19 pandemic worldwide include rapid case identification, rapid testing and isolation of cases, comprehensive contact tracing, and quarantine of contacts.<sup>[1]</sup> The gold standard test for diagnosing COVID-19 is the nasopharyngeal swab (NPS) to detect RNA of the virus from respiratory epithelial cells using *reverse transcription–polymerase chain reaction* technique, even among children.<sup>[2]</sup> Although children are less likely to develop severe symptoms unless having comorbidities, some unique presentations such as “multisystem inflammatory syndrome in children” are common. Indications for doing NPS among children are the same as in adults.<sup>[3]</sup>

NPS testing in children is more challenging than adults, especially in younger children below 5 years.<sup>[2,3]</sup> The most common reasons include psychological distress due to apprehension and fear in the child along with the discomfort and irritation caused by the NPS while passing through the nose. Most children are subjected to varying degrees of physical restraint to the head and body during the procedure which is not only unacceptable but also contributes to increased resistance from the child. Other contributing factors include the difficulty in explaining the procedure, uncooperative nature of children and the “white coat” anxiety in the hospital environment. Children often resist with violent evasive movements, crying, bouts of coughing or sneezing and rarely breath-holding spells. All these factors can lead to increased risk of contamination of the testing area and risk of transmission to health care workers, parents, and caretakers. Mild epistaxis can result from mucosal damage while inserting the swab.

These problems however can be negated to a certain extent with confidence-building measures and some basic precautions. The most experienced team member should be involved in the swabbing of children. The swabbing area should have a glass barrier (sample collection booth), so that there is less risk of contamination even if the child sneezes or coughs. A major component of getting the child to cooperate is “preparing” the child. In older children, this can be accomplished by explaining the procedure in a child-friendly manner and by obtaining assent. A demonstration video or enacting the procedure on

a dummy or stuffed toy can help to allay the apprehensions. For older children, testing the family members first can help the child understand about painless nature of the procedure. Comfort positions rather than restraint are advocated. Various comfort hold positions have been described and the “shoulder hug” position may be especially useful in obtaining an NPS. However, in young children, it is preferable to swab as early as possible before child gets irritable. Infants and toddlers are best swabbed while lying supine on mothers’ lap. Minimal or no restraint should be used as far as possible. Age-appropriate distraction techniques such as using bright colored or light up toys, pacifier, singing, etc., can facilitate the procedure. A proper nasal examination using artificial light is performed, to rule out anatomical abnormalities such as deviated septum and only the wider nasal cavity is selected for NPS testing. In irritable, anxious and uncooperative children, nasal and oropharyngeal swabbing can be done instead of NPS and local anesthetic spray can be used.<sup>[2,4]</sup> Cotton wicks dipped with 0.05% xylometazoline can be used for managing epistaxis.

Although NP swabbing in children is technically difficult, cumbersome, and risky, it can be done easily and safely by following the aforementioned precautions and with a little bit of patience.

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### Conflicts of interest

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