

# Who should perform the rhinopharyngeal swab in COVID-19 positive patients?

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Dear Editor,

The COVID-19 infection can be diagnosed from a variety of upper and lower respiratory sources including the oropharynx (OP), nasopharynx (NP), sputum, and bronchial fluid [1-3]. In general the most sensitive detection of COVID-19 is obtained by the collecting and testing of both upper and lower respiratory samples [4].

However, bronchoscopy is a highly technical procedure requiring advanced diagnostic tools as well as well-trained staff which are not always available. Furthermore the collection of sputum and particularly BAL via bronchoscopy increases the biosafety risk to healthcare workers through the creation of aerosol droplets.

Upper respiratory specimens such as OP and NP swabs are easy to collect especially in limited resource settings. They should be collected within the first few days from the onset of symptoms since RNA positive rates peak in upper respiratory tract specimens at 7–10 days after symptom onset and then they steadily decline [5].

In China during the COVID-19 outbreak, Wang et al reported that oropharyngeal (OP) swabs (n = 398) were used much more frequently than NP swabs (n = 8). However, the COVID-19 RNA was detected only in 32% of OP swabs, compared to NP swabs (63%)[4].

It appears to be extremely important to properly collect nasopharyngeal swabs reaching the posterior rhinopharyngeal tonsil region. This implies the presence of a regular nasal cavity floor. Some anatomical variants, such as nasal septum deviation, can prevent reaching of the nasopharynx and therefore to collect a proper sample. Numerous studies of nasal septal deviation have revealed a wide range of prevalence [6,7]. In 1978, Gray reported a prevalence of 48% to 60% in neonates [6]. In adults, a recent international study found a prevalence of approximately 90% [7]. Sooknundun et al. reported a clinically relevant septal deviation prevalence of 15% to 25% [8].

Current national and international guidelines do not include any special recommendations in the execution of the rhinopharyngeal swab in patients with documented nasal pathology or in patients in which a bilateral nasal fossa obstacle is encountered. We believe that in these selected cases the ENT support should be mandatory in order to obtain a representative sample. Furthermore the use of endoscopes could be very useful in the direct visualization of obstacles and to guide safely the swab toward the rhinopharynx. This would possibly also reduce the false negative rate which is reported to be more than 30% [4].

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