

Stanford University Medical Center

Clinical Laboratories

Clinical Microbiology Laboratories Procedure Collection of Nasopharyngeal Swabs for Patients ≤ 13 years		Effective: 1/24/02	
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ANNUAL REVIEW			
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CONTENTS OF TECHNICAL PROCEDURE

1.0 Principle/Purpose of Test:

Viral agents of respiratory disease colonize the mucosal epithelium of the nasopharynx. A nasopharyngeal (NP) swab may be acceptable for detection of viruses when large numbers are being shed, such as when children are infected with RSV. However, the volume of secretions on an NP swab is not adequate for detection of all viruses or for viruses present in small numbers, as may occur in adult respiratory disease. Thus, in this situation, nasopharyngeal washings collect more material and more infectious virus, thus enhancing the sensitivity of all detection methods, and are particularly useful for adults. (Refer to Nasopharyngeal Washing Protocol.) Nasopharyngeal swabs are still the specimen of choice for children and infants – i.e., all patients not yet 13 years old.

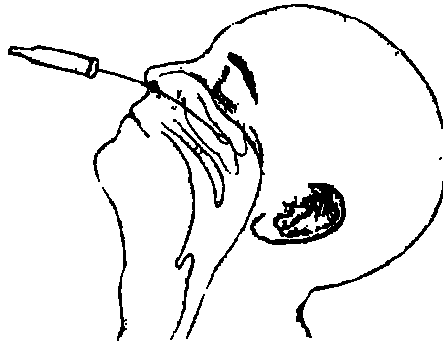
2.0 Materials

- 2.1 Nasopharyngeal swab with synthetic fiber tip*
- 2.2 1-2 mL viral transport medium (VTM)
- 2.3 Specimen container

*Do not use calcium alginate swabs. Dacron swabs are provided with VTM.

3.0 Specimen

- 3.1 Insert swab into one nostril.
- 3.2 Press swab tip on the mucosal surface of the midinferior portion of the inferior turbinate (see sketch), and rub the swab tip several times across the mucosal surface to loosen and collect cellular material.



- 3.3 Withdraw swab. Repeat procedure for the second nostril. Insert swab into container with VTM.
- 3.4 Label the specimen with patient information and promptly submit to the laboratory with appropriate requisition.
- 3.5 Order "Direct Viral Exam for Respiratory Viruses" or "Viral culture for Respiratory Viruses" or both.
- 3.6 Note: A STAT Influenza A & B and RSV enzyme immunoassay (EIA) is also available for immediate patient care decisions. Results are available within 1-2 hours, but only for the agents requested.

3.7 Explanation of the tests:

Direct Viral Exam for Respiratory Viruses is a visual examination of concentrated secretions using fluorescent monoclonal antibodies against Influenza A, Influenza B, Adenovirus, a panel of Parainfluenza viruses, Respiratory Syncytial Virus, and Cytomegalovirus. Results are available the same day as specimen received.

Viral culture will allow recovery of small numbers of viruses present in amounts too small to be detected by the visual test. Results may take as long as 2 weeks.

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4.0 Sensitivity

4.1 In our lab the sensitivity of the direct viral exam (DFA) using nasopharyngeal swabs (mostly children with high viral shedding) vs. culture = 85%; we would expect the sensitivity of the test with nasopharyngeal washings to be higher in the same population but lower in adults with lower viral shedding.

5.0 Test availability

5.1 The DFA panel for respiratory viruses is performed twice each day, at noon and at approximately 6 pm. Results are available soon after.

5.2 The culture is set up daily but results may take days to weeks.

5.3 STAT EIA for Influenza or RSV is available 24/7. Results available within 2 hours.

6.0 References

Noyola, D and GJ Demmler. 2000. Effect of rapid diagnosis on management of influenza A infections. *Pediatr Infect Dis J* 19:303-7.

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