Cygnus Medical Nasopharyngeal and Oropharyngeal Sterile Diagnostic Swabs

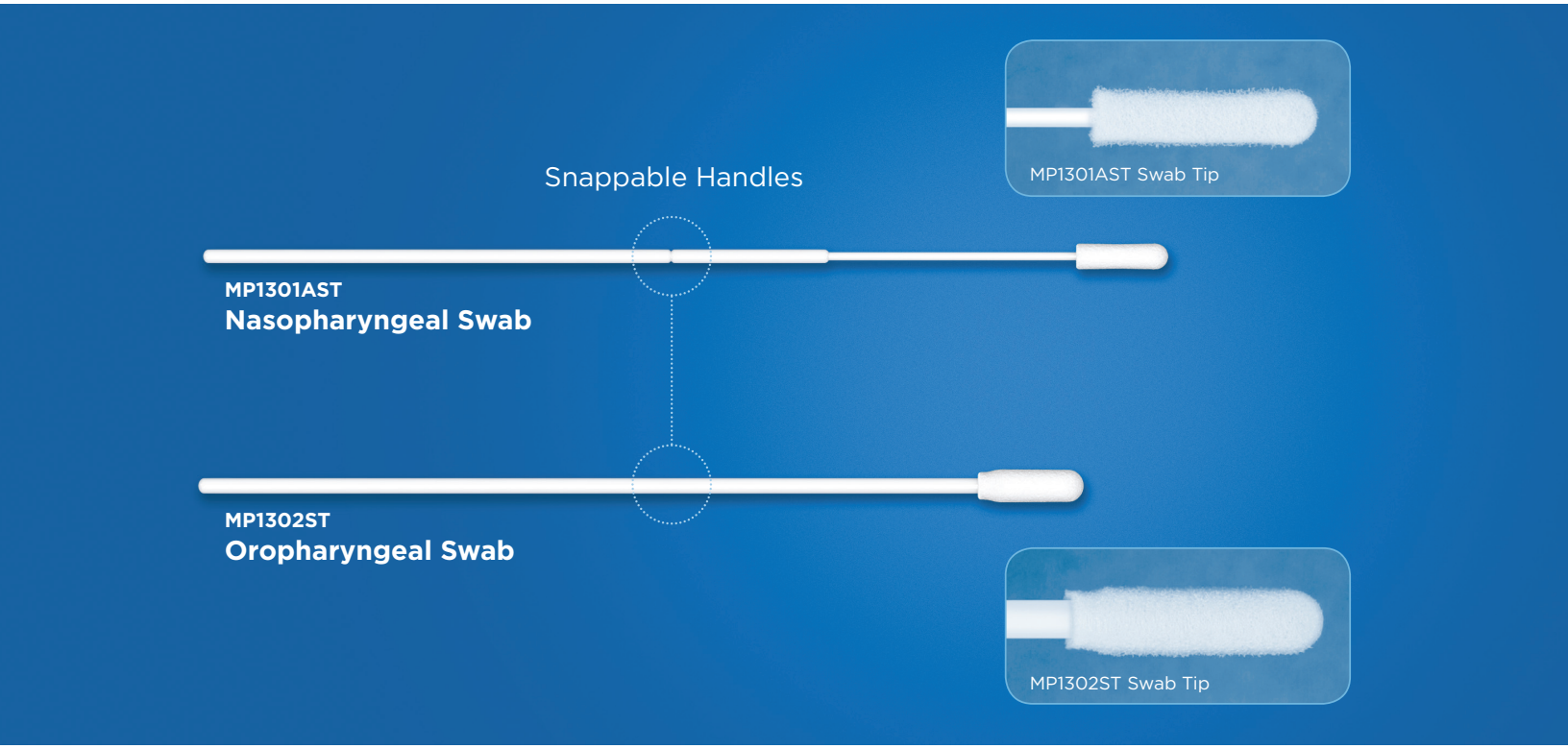
Nasopharyngeal swabs and their ability to collect mucus and saliva and release them into the transport medium for diagnostic testing are of paramount importance in the detection of bacterial and viral infection. US FDA and CDC recommends polyurethane swabs for diagnostic testing. Cygnus Medical's Nasopharyngeal and Oropharyngeal swabs utilize polyurethane foam technology that provides an exceptional surface area to capture a maximum quantity of target fluids, while not bonding to those fluids, providing high subject recovery. Proprietary swab cleaning processes and validated sterility ensure no background from RNase and other contaminants for accurate test results. While delivering precise results, comfort in Nasopharyngeal swabbing is achieved with long, slender, flexible handles keeping patient discomfort to a minimum while reaching remote areas of the nasal septum and oral cavities. The handles utilized in Cygnus Medical's swabs are robust to allow for quick, maximum capture of mucus and saliva, and release with low patient discomfort.

Features

- High surface area captures the maximum amount of mucus and saliva.
- No bonding to swabbed body fluids.
- Validated sterile, clean swab surfaces.
- Thin, high-flexibility handles with 80mm break point for Nasopharyngeal swabs.
- Robust, snappable handles for Oropharyngeal swabs.

Benefits

- Ability to reach remote areas of the nasal septum and oral cavities.
- High recovery rates of body fluids for accurate test results.
- Maximum patient comfort.



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Polyurethane swabs showed excellent recovery for all sample types.

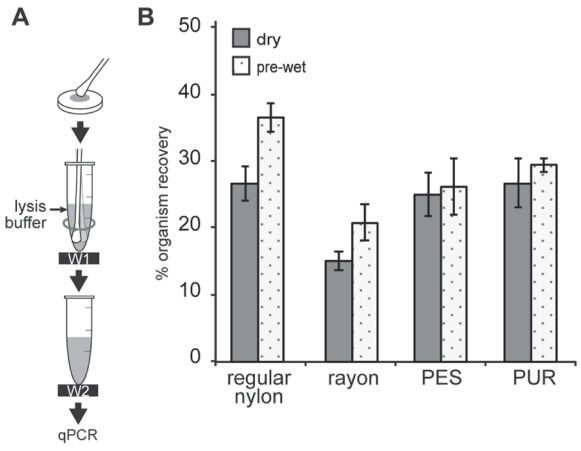
From: PLOS ONE | Swab Sample Transfer for Point-Of-Care Diagnostics: Characterization of Swab Types and Manual Agitation Methods Organism recovery for dried samples.

Study Results: Excess-volume samples gave the expected recovery for most swabs (based on tip fluid capacity); a polyurethane swab showed enhanced recovery, suggesting an ability to accumulate organisms during sampling. Dry samples led to recovery of 20–30% for all swabs tested, suggesting that swab structure and volume is less important when organisms are applied to the outer swab surface. Low-volume samples led to the widest range of transfer efficiencies between swab types. Rayon swabs (63 mL capacity) performed well for excess-volume samples, but showed poor recovery for low-volume samples. Nylon (100 mL) and polyester swabs (27 mL) showed intermediate recovery for low-volume and excess-volume samples.

Polyurethane swabs (16 mL) showed excellent recovery for all sample types. This work demonstrates that swab transfer efficiency can be affected by swab material, structure, and fluid capacity and details of the sample.

Results and quantitative analysis methods from this study will assist POC assay developers in selecting appropriate swab types and transfer methods.*

Organism recovery for dried samples.*



(A) Schematic of the experimental set up. 15 µL of S. *aureus* solution (~10^4 CFU, equivalent to 6x10^4 ldh1 copies, as measured by qPCR) was spotted on a 25/64-inch diameter PDMS punch and left to dry. A dry or pre-wet swab was rubbed on the PDMS surface (10 times), agitated in 128 µL lysis buffer using 10 second 1 Hz side twirl, and removed.

(B) Comparison of % organism recovery for pre-wet and dry swabs based on a control sample and an assumption of 100% collection efficiency.

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***PLOS ONE | Swab Sample Transfer for Point-Of-Care Diagnostics:** Characterization of Swab Types and Manual Agitation Methods Organism recovery for dried samples. Nuttada Panpradist, Bhushan J. Toley, Xiaohong Zhang, Samantha Byrnes, Joshua R. Buser, Janet A. Englund, Barry R. Lutz. Published: September 2, 2014. Results found on page 1, and chart can be found on page7, figure 5. The entire document can be downloaded from: https://journals.plos.org/plosone.

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