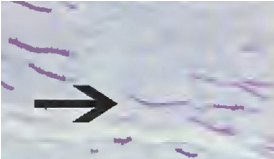

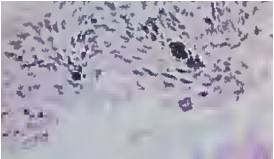


Nail Unit Testing Reference Guide

Test	Medium	Example	Notes
PAS Periodic acid-Schiff reaction	Dry or Formalin		High sensitivity (few false negatives), but rarely organism specific <ul style="list-style-type: none"> Chemical reaction, whereby carbohydrates are oxidized to form aldehydes Aldehydes react with Schiff reagent to produce a magenta color Shows excellent fungal morphology Best for superficial skin/nail infections, which do not disclose abundant acute inflammation/suppurations Reacts with most, but not all, fungi and yeast Better at demonstrating non-degenerated organisms
GMS Gomori Methenamine Silver Silver-based histochemical stain	Dry or Formalin		In tandem with PAS, highest sensitivity, but not organism specific <ul style="list-style-type: none"> Stains carbohydrates (sugars) Tissue is pre-treated with chromic acid, then silver is applied Offers high sensitivity, but poor morphology (target acquires a "dirty" granular appearance) Arguably better for fungal infections found in association with abscesses Better visualization of fungal infections in the deep tissues Stains most, but not all, fungi and yeast May excel at staining degenerated organisms
Fontana-Masson Stain Silver-based histochemical stain	Dry or Formalin		Adds specificity (identifies dematiaceous fungi) and screens for pigmented lesions within nail matrix <ul style="list-style-type: none"> Highlights melanin pigment in fungal organisms Large quantities of melanin pigment favors dematiaceous fungi (pigmented saprophytic mold) Deciphers melanin pigment from other pigments (hemosiderin) Validates the presence of an underlying melanocytic process, e.g. benign matrical melanotic macule, nevus, or melanoma
DNA (PCR) Test	Dry Only		Augments the superior sensitivity of PAS/GMS, by providing high specificity (organism identification) for targeted patient therapy <ul style="list-style-type: none"> Detects the genetic material of pathologic fungi (dermatophytes, saprophytes, and/or yeasts) If detected, genes specific for the pathogens genus +/- species are sought Offers 1-2 day turnaround time, rather than 28+ days via culture Compared to culture, offers 25% higher sensitivity than culture overall, and twice its sensitivity when detecting dermatophytes Organism identification may be necessary for preauthorization of targeted antifungal therapies
Culture	Dry Only		<ul style="list-style-type: none"> + 28 days