

PARTICIPANT STATISTICS

FIRST QUADRIMESTER 2011

BODY FLUIDS MICROSCOPY

Result	Labs	Flagging
Gram positive bacteria	10	
Would refer	2	
TOTAL POPULATION	12	

The intended result was Gram Positive Bacteria.

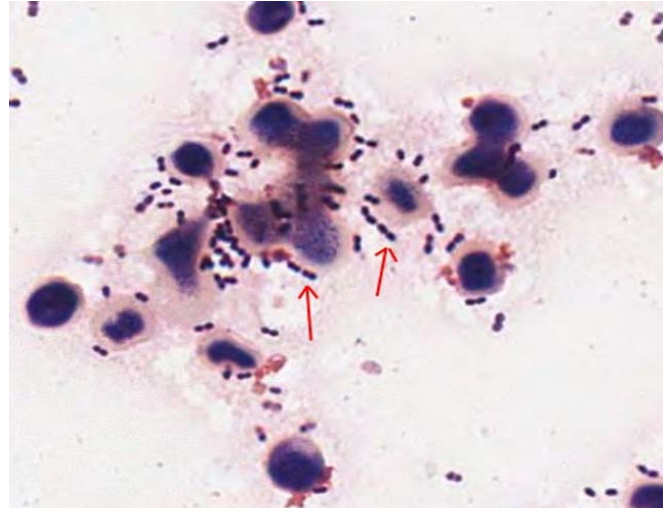
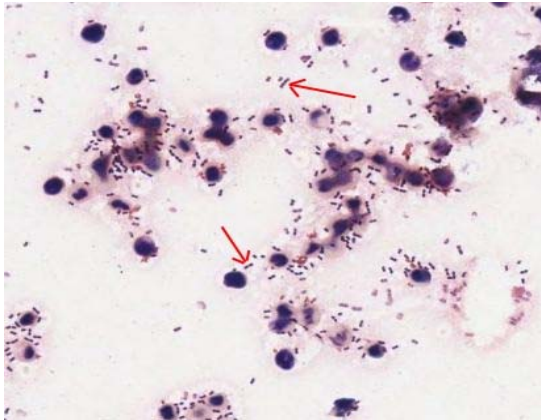


Photo 1: Gram Stain - 400X

Photo 2: Gram Stain - 1000X

Cereberal Spinal Fluid 1STQ 2011

A 12 year old female with a recent history of a severe respiratory infection has come in reporting continuous debilitating headaches, fever and nausea. A spinal tap was ordered and a gram stain performed as shown here.

This spinal fluid clearly contains gram positive streptococci. The patient was ultimately diagnosed with *Streptococcus pneumoniae*. Bacterial meningitis is a serious infection of the fluid in the spinal cord and surrounding the brain. Any bacteria present in spinal fluid is a panic value as the best chance for a positive outcome is immediate and aggressive antibiotic therapy. The three most common forms of bacterial meningitis are *Haemophilus influenzae* type b (Hib), *Neisseria meningitidis* and *Streptococcus pneumoniae*. The frequency of Hib infections have fallen dramatically with the advent of and requirement for vaccination of school aged children.

There are two complicating factors in the treatment of bacterial meningitis. First is the ability of drugs to pass the blood brain barrier. Since not all drugs will adequately infiltrate the spinal fluid, the physician's choice of drugs can be limited. Additionally, the presence of drug resistant strains has become an issue. The proper identification through a quick gram stain can help insure that the initial choice of drug is at least reasonably good guess. Something that is of critical importance in treating of bacterial meningitis.

References:

1. Sáez-Llorens X, McCracken GH (June 2003). "Bacterial meningitis in children". *Lancet* **361** (9375): 2139–48.
2. Tunkel AR, Hartman BJ, Kaplan SL, *et al.* (November 2004). "Practice guidelines for the management of bacterial meningitis". *Clinical Infectious Diseases* **39** (9): 1267–84.
3. <http://www.cdc.gov/ncidod/dbmd/bactmen.htm>