

BACTERIAL VAGINOSIS (BV) is the most common cause of abnormal vaginal discharge in women of childbearing age. This condition predisposes women to increased susceptibility to sexually transmitted diseases, including human immunodeficiency virus (HIV) infections and adverse pregnancy outcomes when bacteria (*Mobiluncus*) ascend to the upper genital tract.

The causative organisms for this condition are *Gardnerella vaginalis*, *Mycoplasma hominis* and anaerobic bacteria, in particular *Prevotella*, *Peptostreptococcus*, *Porphyromonas*, and *Mobiluncus* species². It is thought that a shift to a symptomatic BV state may simply be due to a decline in the levels of "beneficial" lactic acid and hydrogen peroxide-producing lactobacilli and/or an increase in the levels of gram-negative anaerobes. A variety of events can contribute to the development of BV in which a mixture of the organisms listed above are usually present in concentrations 100-1000 times greater than in the healthy vagina.

The standard scoring system termed the "Nugent score" is an accepted technique using microscopic examination of a Gram stained smear of vaginal discharge for determining bacterial vaginosis. The image area examined in microscopes requires standardization. Note: A Zeiss FL30 microscope from the early 1990s with an area of 0.0165 mm², was used as the reference microscope for Nugent scoring.

Recommendations for reporting Vaginal Gram Smears on women of reproductive age— **See G084, Feb 2009**
 'Due to the wide variety of Gram smear results from vaginal samples that can be considered normal, specific bacterial types need not be reported, but may be listed as "organisms resembling normal urogenital flora". Yeast should always be reported with an added comment such as "*Candida* species are normal flora in the genital area of 30-40% of women. The presence of yeast must be correlated with the clinical picture." Smear results that score ≥ 7 in the Nugent scoring system should be reported as "consistent with bacterial vaginosis". It is acceptable to NOT report cells, or bacteria, and ONLY report presence or absence of yeast, and whether smear results are consistent with BV or not'.

CLUE CELLS A smear of vaginal discharge from a BV patient typically shows "clue cells" with mixed flora consisting of large numbers of small gram-negative rods and gram-variable rods and coccobacilli. Lactobacilli morphotypes are absent or greatly reduced. Clue cells can be recognized as different from normal vaginal epithelial cells either on saline mount or on Gram stain. In clue cells, the cell borders are obscured by adherent small coccobacilli. Clue cells are a critical component of the Amsel clinical criteria for bacterial vaginosis, which includes vaginal pH, KOH "whiff test," clue cells, and appearance of the vaginal discharge. The Nugent score and the Amsel clinical criteria strongly correlate for the diagnosis of bacterial vaginosis.

Laboratory examination of vaginal smears and the determination of the Nugent Score						
N Score = The sum of the scores for each bacterial morphotype listed below. (Note Number of Organisms seen / 100X objective)						
<i>Lactobacilli</i>	SCORE	<i>Gardnerella, Bacteroides</i>	SCORE	Curved gram-negative bacilli	SCORE	Sum=*N-SCORE
30 or >	0	0	0	0	0	0
5-30	1	<1	1	<1	1	3
1-4	2	1-4	2	1-4	1	5
<1	3	5-30	3	5-30	2	8
0	4	30 or >	4	30 or >	2	10

*Interpretation of Nugent Score		
If N Score is:	AND:	Then Report:
0-3		Smear NOT consistent with BV
4-6	Clue Cells NOT present	
4-6	Clue Cells ARE present	Smear consistent with BV
≥ 7		