

EOSINOPHILS IN NASAL AND BODY FLUIDS

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PURPOSE

Allergic and atopic conditions such as bronchial asthma and seasonal rhinitis (hay fever) are characterized by eosinophilia. In asthma, absolute eosinophil counts have been useful in management because the level of eosinophils positively correlates with pulmonary performance, indicates the adequacy of steroid therapy, and may indicate the presence of complicating infections.

SPECIMEN REQUIREMENT

- Sputum and bronchial washing- Collect in a wide mouth plastic container.
- Nasal specimens - Collect using a sterile swab.
- Stool – Submitted on slide or swab.

REAGENTS

- Glass slides
- Microscope
- Wright-Geimsa stain (Gram stain smears cannot be used as it will not stain eosinophils)
- Sterile cotton-tipped swab

QUALITY CONTROL

- All slides must be reviewed by a second tech within 24 hours.
- Secondary review must agree within one grade of primary evaluation.

PROCEDURE

Prepare slides

- Nasal swab – roll swab across glass slide.
- Sputum, bronchial wash, and stool specimens – use a sterile cotton tipped swab to transfer sample to glass slide.

Note: Eosinophils are very fragile. Preparation of the smear must be done carefully.

1. Air dry the smears.
2. Process slides following manual Wright-Giemsa staining procedure.
3. Microscopically – 50x (oil) Examine smears for eosinophils and neutrophils.
4. Slide must be reviewed by a second tech within 24 hours. Secondary review must agree within one grade of primary evaluation.

RESULTS/INTREPRETATION

Result	Observed
Absent	No cells of either type seen
1+	Scattered eosinophils single, or in small clumps in at least one field per ten fields examined.
2+	(5 – 10 cells) in at least on field per 10 fields examined.
3+	(10 – 20 cells) or clumps or (30 – 50 cells) in at least one field
4+	(50 or more cells) or large clumps of cells of (100) or more in at least one filed per 10 fields examined.

NORMAL VALUES

- Nasal - Neutrophils: 1+ or Few Seen
Eosinophils : Absent
- Sputum/Stool: Absent - No cells of either type seen

REFERENCES

- John Bernard Henry, M.D., Clinical Diagnosis and Management by Laboratory Methods, 20th Ed., 2001, W.B.Saunders Company.
- David S Jacobs, M.D., Laboratory Test Handbook Concise with Disease Index, 3rd Ed., 2004, Lexi-Comp, Inc.