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Medical Encyclopedia: Eosinophil count - absolute

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Alternative names

Eosinophils; Absolute eosinophil count

Definition

This test measures the number of eosinophils (a type of white blood cell) in the blood. (See also blood differential.)

How the test is performed

Blood is drawn from a vein, usually on the inside of the elbow or the back of the hand. The puncture site is cleaned with antiseptic, and an elastic band is placed around the upper arm to apply pressure and restrict blood flow through the vein. This causes veins below the band to fill with blood.

A needle is inserted into the vein, and the blood is collected in an air-tight vial or a syringe. During the procedure, the band is removed to restore circulation. Once the blood has been collected, the needle is removed, and the puncture site is covered to stop any bleeding.

For an infant or young child, the area is cleansed with antiseptic and punctured with a sharp needle or a lancet. The blood may be collected in a pipette (small glass tube), on a slide, onto a test strip, or into a small container. Cotton or a bandage may be applied to the puncture site if there is any continued bleeding.

In the laboratory, the blood is placed on a microscope slide. A stain added to the sample causes eosinophils to show orange-red granules. The technician then counts how many eosinophils are present per 100 cells. The percentage of eosinophils is multiplied by the white blood cell count to give the absolute eosinophil count.

How to prepare for the test

No special preparation is necessary for adults.

For infants and children:

Preparation for this test depends on your child's age, previous experiences, and level of trust. For specific information regarding how you can prepare your child, see the following topics:

- Infant test or procedure preparation (birth to 1 year)
- Toddler test or procedure preparation (1 to 3 years)
- Preschooler test or procedure preparation (3 to 6 years)
- Schoolage test or procedure preparation (6 to 12 years)
- Adolescent test or procedure preparation (12 to 18 years)

How the test will feel

When the needle is inserted to draw blood, some people may feel moderate pain. Others may feel only a prick or stinging sensation. Afterward, there may be some throbbing.

Why the test is performed

Eosinophils are white blood cells active in allergic diseases, parasitic infections, and other disorders. An eosinophil count may be ordered if the blood differential is abnormal, or if there is suspicion of specific diseases.

The eosinophil count may help your doctor:

- Detect an allergic reaction and assess its severity
- Detect a parasitic infection
- Evaluate Hodgkin's disease
- Assess sensitivity to drugs (particularly some anticoagulants)
- Confirm acute hypereosinophilic syndrome (rare but sometimes fatal leukemia-like condition)

Normal Values

Less than 350 cells/mcl (cells per microliter)

What abnormal results mean

Increased eosinophils (eosinophilia) is usually associated with allergic diseases and parasites (such as worms).

Possible disorders include:

- Eczema
- Leukemia
- Autoimmune diseases
- Asthma
- Hay fever

Medications that may cause an increase in eosinophils include:

- Amphetamines (appetite suppressants)
- Tranquilizers
- Bulk-type laxatives containing psyllium
- Certain antibiotics
- Interferon

Fewer than normal eosinophils may be associated with:

- Alcohol intoxication
- Excessive production of adrenocorticosteroids (such as cortisol)

What the risks are

- Excessive bleeding
- Fainting or feeling light-headed
- Hematoma (blood accumulating under the skin)

- Infection (a slight risk any time the skin is broken)
- Multiple punctures to locate veins

Special considerations

The eosinophil count usually helps confirm a diagnosis (it does not tell, for example, if an increase is caused by allergy or parasite infection).

Veins and arteries vary in size from one patient to another and from one side of the body to the other. Obtaining a blood sample from some people may be more difficult than from others.

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