

Eosinophilia

Eosinophilia is a condition in which the [eosinophil](#) count in the peripheral blood exceeds $5.0 \times 10^8 / (500/\mu\text{L})$.

Eosinophils usually account for less than 7% of the circulating leukocytes.

A marked increase in non-blood tissue eosinophil count noticed upon histopathologic examination is diagnostic for tissue eosinophilia.

Several causes are known, with the most common being some form of allergic reaction or parasitic infection. Diagnosis of eosinophilia is via a complete blood count (CBC), but diagnostic procedures directed at the underlying cause vary depending on the suspected condition(s). An absolute eosinophil count is not generally needed if the CBC shows marked eosinophilia.

The location of the causal factor can be used to classify eosinophilia into two general types: extrinsic, in which the factor lies outside the eosinophil cell lineage; and intrinsic eosinophilia, which denotes etiologies within the eosinophil cell line.

Specific treatments are dictated by the causative condition, though in idiopathic eosinophilia, the disease may be controlled with corticosteroids. Eosinophilia is not a disorder (rather, only a sign) unless it is idiopathic.

A study group involved 30 [children](#) with [congenital hydrocephalus](#) after [shunt](#) system implantation, whose [procedures](#) were complicated by *S. epidermidis* implant infection. Thirty children with congenital hydrocephalus awaiting their first-time shunt implantation formed the control group. The level of [eosinophils](#) in [peripheral blood](#) was assessed in both groups. [Cerebrospinal fluid](#) (CSF) was examined for protein level, [pleocytosis](#), [interleukins](#), [CCL26/Eotaxin 3](#), [IL-5](#), [IL-6](#), [CCL11/Eotaxin-1](#), [CCL3/MIP-1a](#), and MBP. Three measurements were performed in the study group. The first measurement was obtained at the time of [shunt infection](#) diagnosis, the second one at the time of the first sterile shunt, and the third one at the time of shunt reimplantation. In the control group, blood and CSF samples were taken once, at the time of shunt implantation.

In the clinical material, the highest values of eosinophils in peripheral blood and CSF pleocytosis were observed in the second measurement. It was accompanied by an increase in the majority of analyzed CSF [interleukins](#).

[Cerebrospinal fluid pleocytosis](#) observed in the study group of Polis et al., from the Department of Neurosurgery, Polish Mother's Memorial Hospital Research Institute, [Łódź](#), [Poland](#). shortly after [CSF](#) sterilization is presumably related to an allergic reaction to [Staphylococcus epidermidis](#), the causative agent of [ventriculoperitoneal shunt infection](#) ¹⁾.

¹⁾

Polis B, Polis L, Zeman K, Paśnik J, Nowosiławska E. Unexpected eosinophilia in children affected by hydrocephalus accompanied with shunt infection. Childs Nerv Syst. 2018 Jul 21. doi: 10.1007/s00381-018-3908-5. [Epub ahead of print] PubMed PMID: 30032408.

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