

Erythrocyte Sedimentation Rate

Erythrocyte Sedimentation Rate (abbreviation ESR/FW – *Fahraeus Westergren*) is a common laboratory test that indicates the rate of sedimentation of erythrocytes in a sample of non-clotting blood.

Physiological sedimentation

The sedimentation rate depends mainly on the size of the sedimenting particles. Physiologically, it increases with age, we also find higher values in women (smaller number of red blood cells and increased concentration of fibrinogen), especially during pregnancy.

Physiological values of FW ^[1]	
Men	2-5 mm/hour
Women	3-8 mm/hour

An equation taking into account the age of the examined person:

- ♂ erythrocyte sedimentation rate (mm/hour) $\leq \text{age} / 2$
- ♀ erythrocyte sedimentation rate (mm/hour) $\leq (\text{age} + 10) / 2$

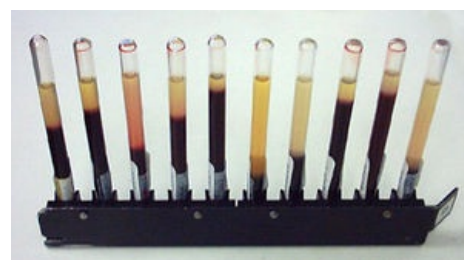
Causes of increased FW values

Blood sedimentation is accelerated in pathological conditions, usually in conditions with an acute phase reaction. Erythrocytes tend to aggregate and thus form cylindrical clusters (so-called erythrocyte flocculation), which sediment faster than individual erythrocytes. The formation of clusters is supported by certain proteins, mainly fibrinogen and gamma-globulins.

Typical examples include: inflammation, tumors, necrosis, anemia, macrocytosis, monoclonal gammopathy, SLE, hyperfibrinogenemia, but also alcoholism, obesity, etc.^[2]



Erythrocyte sedimentation rate (ESR)



Erythrocyte sedimentation

Links

Related Articles

- Centrifugation
- Comparison of some blood tests
- Blood count
- Hemocoagulation ■ Examination of blood coagulation ■ Examination of bleeding
- Biochemical analysis of blood ■ Laboratory examination of acid-base balance
- Blood culture ■ CRP ■ PCT

Reference

1. ŠVÍGLEROVÁ, Jitka. *Sedimentace erytrocytů* [online]. The last revision 18. 2. 2009, [cit. 8.1.2023]. <https://web.archive.org/web/20160306065550/http://wiki.lfp-studium.cz/index.php/Sedimentace_erytrocytů>.
2. * VAŠE LABORATOŘE, . *Sedimentace* [online]. [cit. 8.1.2023]. <<https://www.vaselaboratore.cz/seznam-vysetreni/hematologie/item/sedimentace>>.

Sources

- ŠVÍGLEROVÁ, Jitka. *Sedimentace erytrocytů* [online]. The last revision 18. 2. 2009, [cit. 8.1.2023]. <https://web.archive.org/web/20160306065550/http://wiki.lfp-studium.cz/index.php/Sedimentace_erytrocytů>.
- VAŠE LABORATOŘE, . *Sedimentace* [online]. [cit. 8.1.2023]. <<https://www.vaselaboratore.cz/seznam-vysetreni/hematologie/item/sedimentace>>.

