

# Blood in the stool of a newborn

**Blood in the stool of a newborn** can appear in situations with varying degrees of severity. The presence of a large amount of blood in the stool is usually a serious symptom, but it can also be the result of the mother swallowing blood during childbirth or from a sore nipple during breastfeeding. The cause often remains undetected.<sup>[1][2]</sup>

## Causes

### Occult bleeding:

- swallowed mother's blood during childbirth or breastfeeding (typically on the 2nd to 3rd day of life);
- nasogastric tube injury;
- necrotizing enterocolitis;
- artificial feeding intolerance (cow's or soy milk intolerance; typically 2nd to 3rd week of life);
- gastritis or stress ulcer (after prolonged illness, after treatment with steroids or theophylline; treatment: ranitidine);
- unknown cause.<sup>[2]</sup>

Stools of normal appearance with **streaks of fresh blood** - anal fissure, rectal trauma (thermometer injury).

### Macroscopic bleeding:

- hemorrhagic disease of the newborn due to vitamin K deficiency (typically on the 2nd to 3rd day of life);
- necrotizing enterocolitis (NEC);
- disseminated intravascular coagulation is often accompanied by other bleeding manifestations; often secondary to infection;
- coagulopathy - abnormalities of platelets and clotting factors;
- volvulus, intussusception (typical occurrence from 3 to 12 months of age), intestinal duplication, herniated inguinal hernia, Meckel's diverticulum, Hirschsprung's enterocolitis;
- colitis:
  - intestinal infection (viral or bacterial; can cause temporary lactose intolerance);
  - intolerance to cow's or soy milk ("allergic enterocolitis") - milk without lactose or with hydrolyzed proteins is suitable;
  - Neonatal transient eosinophilic colitis - development without an obvious allergen (e.g. before starting enteral nutrition);
- severe liver disease;
- other infections (CMV, toxoplasmosis, syphilis, bacterial sepsis).<sup>[2][1]</sup>

## Diagnosis

- anamnesis;
- physical exam:
  - peripheral blood circulation - worsened by NEC;
  - bleeding skin manifestations - hematomas in coagulopathy;
  - examination of the abdomen - distended and sensitive in NEC, intussusception, volvulus;
  - examination of the rectum - fissures, etc.
- laboratory examination:
  - blood count and differential;
  - coagulation tests (APTT, PT, FBG);
  - test to distinguish maternal and fetal blood (adult and fetal hemoglobin);
  - occult bleeding in the stool;
  - stool culture;
  - event ABR, Na, K;
  - Abdominal X-ray if NEC is suspected.<sup>[2]</sup>
  - Apt's test (to differentiate between maternal and newborn blood): mixing blood with NaOH → hemolysis → maternal blood; fetal erythrocytes are resistant to alkali.<sup>[3]</sup>

## Sources

### Related articles

- Bleeding from the alimentary canal

### References

1. HRODEK, Otto - VAVŘINEC, Jan, et al. *Pediatric*. 1. edition. Galén, 2002. pp. 82. ISBN 80-7262-178-5.
2. GOMELLA, TL, et al. *Neonatology : Management, Procedures, On-Call Problems, Diseases, and Drugs*. 6.

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3. DORT, Jiří, et al. *Neonatologie : vybrané kapitoly pro studenty LF*. 1. edition. Karolinum, 2005. pp. 71. ISBN 80-246-0790-5.