

How is haemophilia diagnosed?

Haemophilia is a medical condition where a person has low levels of clotting factor VIII or factor IX. These low factor levels or deficiencies are caused by gene variants or mutations in the clotting factor VIII or IX gene.

Diagnostic categories for females

In the past women and girls with bleeding symptoms were generally called 'symptomatic carriers'. In Australia, diagnostic categories have now changed.¹

These categories can be helpful for many women and girls when their results are clear but if a woman or girl has borderline factor levels, singling out which category is appropriate can be challenging.

In women and girls haemophilia is usually diagnosed through:

- The physical signs that you have unusual bleeding problems
- And • Checking the family history for bleeding problems
- And • Laboratory tests on a blood sample for your clotting factor levels
- And • Genetic testing that shows you have the gene alteration for haemophilia.

Factor level	Diagnostic category
Females with <ul style="list-style-type: none">• an F8 or F9 gene alteration• and clotting factor levels in the range for haemophilia (0-40% of normal clotting factor levels)	Haemophilia
<ul style="list-style-type: none">• Some females who carry the gene alteration and have factor levels at the lower end of normal (40-50%) may also experience abnormal bleeding.• If further investigation indicates this bleeding is related to a factor VIII or factor IX deficiency, they will be treated as having haemophilia.	Symptomatic haemophilia carrier
<ul style="list-style-type: none">• Most females who carry the gene alteration will have normal factor VIII or factor IX levels and will not have bleeding problems.	Asymptomatic haemophilia carrier

The journey to diagnosis

Haemophilia is rare and some women have not been diagnosed until later in life, although they have bleeding symptoms. There is ongoing work worldwide to increase awareness about haemophilia in females, so that women and girls can be diagnosed earlier and the pathway to diagnosis can be a smoother experience.

“ When I was diagnosed in my 40s, I was the first person I had ever known with haemophilia. Little did I know I had had it all my life. I was unsure how I was never tested before with all the bleeding and bruising I experienced throughout my life. ”

Sources

References

1. van Galen KPM, d'Oiron R, James P, et al. A new hemophilia carrier nomenclature to define hemophilia in women and girls: Communication from the SSC of the ISTH. *Journal of Thrombosis and Haemostasis*. 2021;19(8):1883-1887. Accessed 24 March 2022. Available from <https://doi.org/10.1111/jth.15397>.
2. Australian Bleeding Disorders Registry data provided to HFA by the National Blood Authority in 2020, following an HFA request approved by the ABDR Steering Committee in 2020 and 2022.
3. Kasper CK, Lin JC. How many carriers are there? *Haemophilia* 2010;16:842. Accessed 24 March 2022. Available from <https://doi.org/10.1111/j.1365-2516.2010.02210.x>.
4. Hermans C, Kulkarni R. Women with bleeding disorders. *Haemophilia*. 2018;24(Suppl. 6):29-36. Accessed 25 March 2022. Available from <https://doi.org/10.1111/hae.13502>.
5. Srivastava A, Santagostino E, Dougall A, et al. WFH guidelines for the management of hemophilia, 3rd edition. *Haemophilia*. 2020; 26(Suppl 6): 1-158. Accessed 24 March 2022. Available from <https://doi.org/10.1111/hae.14046>.

Other sources

- Alabek M, Mohan R, Raia MA. Genetic counselling for hemophilia. Rev. edn. *Treatment of hemophilia No 25*. Montreal: World Federation of Hemophilia, 2015. Accessed 24 March 2022. Available from <http://www1.wfh.org/publications/files/pdf-1160.pdf>.
- Australian Haemophilia Centre Directors' Organisation. Guidelines for the management of haemophilia in Australia. Melbourne; Canberra: AHCCDO; National Blood Authority, 2016. Accessed 24 March 2022. Available from <https://www.blood.gov.au/haemophilia-guidelines>.
- McIntock, C. Women with bleeding disorders: Clinical and psychological issues. *Haemophilia* 2018;24(Suppl. 6):22-28. Accessed 24 March 2022. Available from <https://doi.org/10.1111/hae.13501>.
- World Federation of Hemophilia. Carriers and women with hemophilia. Montreal: WFH, 2012. Accessed 24 March 2022. Available from <https://www1.wfh.org/publication/files/pdf-1471.pdf>.

NB: All photos in this booklet are stock images.

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