BC CANCER HEREDITARY CANCER
Provincial Health Services Authority

HOXB13 Cancer Risk and Management

Cancer risks associated with *HOXB13*

People with a pathogenic variant in the *HOXB13* gene have a higher chance of developing prostate cancer compared to the general population. Cancers often happen at a younger age for *HOXB13* carriers. There is no known increased cancer risk for females with a pathogenic variant in the *HOXB13* gene.

The estimated degree of increase in risk beyond the 12.5% risk seen in the general population varies depending on the population and *HOXB13* variant studied. Most data available to date relates to the c.251G>A (G84E) pathogenic variant primarily seen in Northern European populations which confers a 33% (95% CI 23-46%) risk to age 80.

Cancer Screening and Risk Reduction

Prostate Cancer

Consider annual **digital rectal examination (DRE)** and/or serum **prostate specific antigen test (PSA)** testing as early as 40-45 years of age or 5-10 years before the youngest diagnosis of prostate cancer in the family (whichever is earlier)

The Canadian Urological Association recommends healthcare providers engage in shared decision-making with their patients to come to an individualized screening decision following a thorough discussion on the potential risks and benefits of the PSA test. In BC, PSA testing in asymptomatic men is not an insured benefit.

Note: In the information above, male/female refers to sex assigned at birth.

Family and Reproductive Considerations

Inheritance

Each child of someone with a *HOXB13* pathogenic variant has a 50% chance of inheriting the variant. Family members are encouraged to contact their local genetics clinic to learn more about whether genetic testing or cancer screening may be helpful for them. Family members who live in British Columbia or the Yukon can contact our program directly at hereditarycancer@bccancer.bc.ca. In BC/Yukon, genetic testing is generally available starting at age 19.

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