Understand Your Risk for Prostate Cancer

Cancer refers to the uncontrolled division and growth of cells in the human body. The growth, or tumour, can be caused by mutations in a person's DNA. These mutations can also be passed down from parents to children.

Prostate cancer is hereditary. Therefore, genetic screening is recommended¹ for people:

- → with a family history of prostate cancer;
- → with a previous or current diagnosis for colorectal cancer:
- → with a family history of breast, ovarian, and colorectal cancers;
- with increased risks related to lifestyle: heavy drinkers, smokers, being overweight and having low physical activity.

From the Dtect Prostate+ results, your doctor could recommend regular health monitoring if you received a positive screening result.

Benefits of Dtect Prostate+

→ Validated Technology

Dtect Prostate+ is run on one of the most accurate genetic profiling platforms available. It screens for disease risks by analysing genetic variants across relevant genetic markers.

Comprehensive Results

The results are reported in a precise and concise format, allowing you to easily interpret the analysis. The Dtect Prostate+ report highlights the risk factors, and helps doctors to prescribe more suitable and effective monitoring and treatment options.

→ Affordable Pricing

Dtect Prostate+ provides you with a quality genetic analysis at an affordable price.

Limitations

A negative test result does not mean that an individual will not get the inherited condition or disorder because Dtect tests are designed to screen for only highly significant genetic markers which have been

Other Products

Dtect BRCA+: Screens for risk of breast and ovarian cancers.

Dtect Cardio & Metabolic: Evaluates markers associated with cardiovascular

Dtect Carrier: Screens your carrier status for rare genetic disorders.

Dtect Child: Detects inherited genetic illnesses/developmental disorders

Dtect Colon+: Screens for risk of colorectal cancer, using ACMG guidelines.

Dtect Derma: Screens for traits or conditions that affect the skin.

Dtect Fertility: Screens for genetic causes of infertility.

Dtect Immune Health: Screens for risk of COVID-19 susceptibility and severity.

Dtect Neuro: Screens for risks of various types of neurological conditions,

Dtect NPC+: Screens for risk of nasopharyngeal and head and neck cancers.

Dtect Onco: Screens for risk of familial cancers.

Dtect PGx: Screens for risk of adverse drug reactions and drug responses.

Dtect Prostate+: Screens for risk of prostate cancer, using ACMG guidelines.

Dtect Wellness: Screens for traits or conditions that affect health and wellness.

Available at:



Malaysian Genomics Resource Centre Berhad (652790-V)



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Genetic Screening for **Prostate Cancer**

Your First Step Towards Total Health and Vitality



Manage Your Health With Dtect Prostate+

Dtect Prostate+ is a genetic screening test. This test screens your DNA for markers that are linked to inherited risk factors for prostate cancer¹. The markers serve as 'red flags' in your DNA and can indicate if you are predisposed to prostate cancer.



DID YOU KNOW?

Prostate cancer is among the most common cancers in men worldwide, with an estimated 1,600,000 cases and 366,000 deaths annually². In developing countries, 11 percent of men are diagnosed with prostate cancer over their lifetime, with the incidence generally rising with age³. The disease affects men, usually in middle age or later.



If **detected early**, the overall five-year survival rate is over **98 percent**. The good prognosis is a result of effective preventive strategies that use **early genetic and molecular screening** to identify and monitor men with increased risk of developing prostate cancer.

Please email us at **enquiries@dtect.com** or consult your doctor for more information.

Prostate Cancer Risk Factors

Prostate cancer is characterised by the overgrowth of certain cells in the prostate gland. The cells become abnormal and multiply without control or order, to form a tumour. The most important known risk factors for prostate cancer are age, inherited genetic markers, and lifestyle (which includes diet, habits, and physical activity).

Age

Prostate cancer has one of the strongest relationships between age and any human malignancy. Clinically diagnosed prostate cancer rarely occurs before the age of 40, but the incidence rises rapidly thereafter⁴⁻⁵.

Lifestyle

Heavy consumption of alcohol may increase the risk of developing prostate cancer⁶⁻⁷. Cigarette smoking may have an effect on both the risk of developing prostate cancer and its prognosis once a diagnosis is established⁸⁻¹¹. Regular physical activity may be beneficial, slightly lowering the risk of developing prostate cancer¹²⁻¹³.

Genetics

Prostate cancer has a strong genetic component. Having a family history of prostate cancer and other cancers can increase the risk of a man developing prostate cancer. The prostate cancer genetic predispositions are caused by pathogenic variants in the following genes¹:

ATM	EHBP1	MSH6
BRCA1	HOXB13	NBN
BRCA2	MLH1	PMS2
CHEK2	MSH2	TP53

Your Dtect Prostate+ test results can assist and support your doctor's medical diagnosis, and help with the management of genetic diseases across the family. Markers for disease risks are likely to be shared by first-degree relatives (siblings, children, parents). Your doctor could advise clinically asymptomatic relatives of patients to undergo screening. More importantly, your doctor could advise you on treatment decisions for prostate cancer sooner, or you can be better prepared to make lifestyle and dietary changes to lower your health risks for prostate cancer when possible.

¹References

Abida W, Armenia J, Gopalan A, et al. Prospective Genomic Profiling of Prostate Cancer Across Disease States Reveals Germline and Somatic Alterations That May Affect Clinical Decision Making, JCO Precis Oncol 2017; 2017.

Agalliu I, Gern R, Leanza S, Burk RD. Associations of high-grade prostate cancer with BRCA1 and BRCA2 founder mutations. Clin Cancer Res 2009; 15:1112.

Al Olama AA, Kote-Jarai Z, Berndt SI, et al. A meta-analysis of 87,040 individuals identifies 23 new susceptibility loci for prostate cancer. Nat Genet 2014; 46:1103.

Bratt O, Drevin L, Akre O, et al. Family History and Probability of Prostate Cancer, Differentiated by Risk Category: A Nationwide Population-Based Study, J Natl Cancer Inst 2016; 108.

Breast Cancer Linkage Consortium. Cancer risks in BRCA2 mutation carriers. J Natl Cancer Inst 1999; 91:1310.

Cybulski C, Górski B, Debniak T, et al. NBS1 is a prostate cancer susceptibility gene. Cancer Res 2004; 64:1215.

Erkko H, Xia B, Nikkilä J, et al. A recurrent mutation in PALB2 in Finnish cancer families. Nature 2007; 446:316.

Ewing CM, Ray AM, Lange EM, et al. Germline mutations in HOXB13 and prostate-cancer risk. N Engl J Med 2012; 366:141.

Mitra A, Fisher C, Foster CS, et al. Prostate cancer in male BRCA1 and BRCA2 mutation carriers has a more aggressive phenotype. Br J Cancer 2008; 98:502.

Na R, Zheng SL, Han M, et al. Germline Mutations in ATM and BRCA1/2 Distinguish Risk for Lethal and Indolent Prostate Cancer and are Associated with Early Age at Death. Eur Urol 2017; 71:740.

Raymond VM, Mukherjee B, Wang F, et al. Elevated risk of prostate cancer among men with Lynch syndrome. J Clin Oncol 2013; 31:1713.

Southey MC, Goldgar DE, Winqvist R, et al. PALB2, CHEK2 and ATM rare variants and cancer risk: data from COGS. J Med Genet 2016;53:800.

Veda NG, et al. Role of Genetic Testing for Inherited Prostate Cancer Risk: Philadelphia Prostate Cancer Consensus Conference 2017 | Clin Oncol: 414-474.

- 2 Global Burden of Disease Cancer Collaboration, Fitzmaurice C, Allen C, et al. Global, Regional, and National Cancer Incidence, Mortality Years of Life Lost, Years Lived With Disability, and Disability-Adjusted Life-years for 32 Cancer Groups, 1990 to 2015: A Systematic Analysis for the Global Burden of Disease Study. JAMA Oncol 2017; 3:524.
- 3 Siegel R, Ward E, Brawley O, Jemal A. Cancer statistics, 2011: The impact of eliminating socioeconomic and racial disparities or premature cancer deaths. CA Cancer J Clin 2011; 61:212.
- 4 SEER Cancer Statistics Review, 1973-1999. URL http://seer.cancer.gov/csr/1973_1999/ Accessed on February 25, 2011.
- 5 Hankey BF, Feuer EJ, Clegg LX, et al. Cancer surveillance series: Interpreting trends in prostate cancer Part I: Evidence of the effects of screening in recent prostate cancer incidence, mortality, and survival rates. J Natl Cancer Inst 1999; 91:1017.
- 6 Bagnardi V, Blangiardo M, La Vecchia C, Corrao G. A meta-analysis of alcohol drinking and cancer risk. Br J Cancer 2001; 85:1700. 42
- 7 Gong Z, Kristal AR, Schenk JM, et al. Alcohol consumption, finasteride, and prostate cancer risk: results from the Prostate Cancel Prevention Trial. Cancer 2009; 115:3661. 43
- $8 \quad \text{Murphy AB, Akereyeni F, Nyame YA, et al. Smoking and prostate cancer in a multi-ethnic cohort. Prostate 2013; 73:1518.73$
- 9 Ho T, Howard LE, Vidal AC, et al. Smoking and risk of low- and high-grade prostate cancer: results from the REDUCE study. Clin Cancer Res 2014; 20:5331.
- 10 Pouresmaeili F, Hosseini SJ, Farzaneh F, et al. Evaluation of environmental risk factors for prostate cancer in a population of Iranian patients. Asian Pac J Cancer Prev 2014: 15:10603.
- 11 Shahabi A, Corral R, Catsburg C, et al. Tobacco smoking, polymorphisms in carcinogen metabolism enzyme genes, and risk of localized and advanced prostate cancer: results from the California Collaborative Prostate Cancer Study, Cancer Med 2014; 3:1644. 76
- 12 Parker AS, Thiel DD, Bergstrallh E, et al. Obese men have more advanced and more aggressive prostate cancer at time of surgery than non-obese men after adjusting for screening PSA level and age: results from two independent nested case-control studies. Prostate Cancer Prostatic IS-2013; 16:352, 100
- 13 Giovannucci EL, Liu Y, Leitzmann MF, et al. A prospective study of physical activity and incident and fatal prostate cancer. Arch Intern Med 2005; 165:1005. 101