

# BRCA1 Germline Pathogenic Variant Carriers Management Guidelines for Healthcare Professionals

Female BRCA1 Germline Pathogenic Variant (GPV) carrier age-dependent cumulative cancer risks (95% confidence interval)		
Age (years)	Breast cancer (Note population risk to age 80 approx 10%*)	Tubo-ovarian cancer (Note population risk to age 80 approx 1.5%*)
21-30	4% (2-7%)	-
31-40	24% (21-29%)	2% (1-3%)
41-50	43% (39-48%)	8% (6-12%)
51-60	56% (51-61%)	20% (16-26%)
61-70	66% (61-72%)	41% (33-50%)
71-80	72% (65-79%)	44% (36-53%)

Cumulative risk for contralateral breast cancer by time since first breast cancer	
≤5 years	13% (10-16%)
>5-10 years	23% (20-27%)
>10-15 years	32% (28-36%)
>15-20 years	40% (35-45%)
>20-45 years	53% (44-62%)

Other cancers	BRCA1 GPV carrier risk (95% confidence interval)	Population risk*
Male breast cancer	0.4% (0.1-1.5%) by age 80	Rare
Prostate cancer <sup>1</sup> Adjusted risk for screening effect, please see FAQ for unadjusted figures	17% (8-26%) by age 85 <sup>1</sup> (Nyberg et al, 2020)	Approx 12% by age 80
	No significant association (Li et al, 2022)	
Pancreatic cancer*	Male: Approx 3% by age 80	Approx 1% by age 80
	Female: Similar to population risk	Up to 1% by age 80
No significant association consistently found for other cancers.		

Patient resources
<ul style="list-style-type: none"> <li>➤ A Beginner's Guide to BRCA1 and BRCA2 (patientinfibrary.royalmarsden.nhs.uk)</li> <li>➤ breastcancer.org "Someone like me" <a href="https://breastcancer.org/information-support/support-you/someone-me-telephone-support">https://breastcancer.org/information-support/support-you/someone-me-telephone-support</a></li> <li>➤ coppafeel.org</li> <li>➤ <a href="https://www.macmillan.org.uk/cancer-information-and-support/worried-about-cancer/causes-and-risk-factors/brca-gene">https://www.macmillan.org.uk/cancer-information-and-support/worried-about-cancer/causes-and-risk-factors/brca-gene</a></li> </ul>

Notes
<p><b>It is important to manage patients in the context of their family history of cancer. Individualised risk estimates available from <a href="https://canrisk.org/">https://canrisk.org/</a> should be used instead of the general risk estimates wherever possible.*See FAQ document for further information and references.</b></p>

## Management recommendations

<b>Screening</b>	<p><b>Breast:</b> Annual MRI Breast from 30 years. Annual mammography from 40 years. Earlier commencement of annual MRI breast from age 25 may be considered for women with an individualised 10 year breast cancer risk of ≥ 8%*. For women with previous breast cancer, as above if residual breast tissue.</p>
	<p><b>Tubo-ovarian:</b> Not currently recommended. No evidence based screening programme.</p>
	<p><b>Prostate:</b> No national screening programme. Men can discuss pros and cons of PSA screening with their GP. Consider family history.</p>
	<p><b>Pancreatic:</b> Not currently recommended outside of research. Consider EUROPAC study if family history.</p>
<b>Risk-reducing surgery</b>	<p><b>Breast:</b> Discuss risk-reducing bilateral mastectomy. Individualised* risk assessment recommended.</p>
	<p><b>Tubo-ovarian:</b> Discuss risk-reducing bilateral salpingo-oophorectomy (RRBSO), offer when childbearing is complete and no earlier than age 35 – 40. Due to continued risk of ovarian cancer at older ages, RRBSO should be discussed with all women, with consideration of general fitness/co-morbidities.</p>
<b>Hormone replacement</b>	<p>Women undergoing RRBSO with no previous history of breast cancer, should consider taking HRT until 50 years. For women with previous breast cancer, individualised discussion with Oncologist is advised.</p>
<b>Chemoprevention</b>	<p>Not recommended because of high risk of triple negative breast cancer.</p>
<b>Cancer management</b>	<p>BRCA1 GPV carrier status may influence management of current cancers – ensure oncologist aware of carrier status and manage as part of a multidisciplinary team. Consider long term prognosis / competing risks prior to considering risk-reducing surgery.</p>
<b>Lifestyle information</b>	<p>-Provide information about regular self-breast examination and ovarian cancer symptom awareness.          -Provide information on the benefits of smoking cessation, minimising alcohol intake and maintaining a healthy weight to lower the chance of getting cancer.          -Contraception: use of oral contraceptive pill (OCP) is not contraindicated, but requires informed discussion and consideration of alternative forms of contraception*</p>
<b>Family matters</b>	<p>-Refer to clinical genetics to facilitate genetic testing in at-risk family members.          -Refer to clinical genetics for discussions on reproductive options.</p>
<b>Psychological</b>	<p>Consider referral for clinical psychology support if appropriate.</p>