

Selection of Germline Genetic Testing Panels in Patients with Cancer: ASCO Guideline			
Clinical Question	Recommendation	Evidence Quality	Strength
Q1 – Family history collection	1.1. All patients should have a family history taken and recorded.	NR	S
	<p>1.2. Patients should be asked to provide the following information as part of this family history. Patients may not have complete information, but that should not be considered an impediment to asking these questions. Only information about biologic relatives is pertinent.</p> <ul style="list-style-type: none"> <li>Does the patient know of any cancers in any first-degree biological relatives: siblings, parents, children?</li> <li>Does the patient know of any cancers in any second-degree biological relatives (on both maternal and paternal sides): grandparents, aunts, uncles, grandchildren, nieces, nephews, half siblings?</li> <li>For each cancer in the family, ask for the following details: Type of primary cancer(s); age at cancer diagnosis for each primary cancer; were multiple cancers of one type involved (e.g., bilateral breast cancer or multiple colon cancer primaries)?</li> <li>Does the patient know of any relative who has had germline genetic testing for cancer predisposition, and if so, what were the results?</li> <li>What is the patient’s ethnicity?</li> </ul> <p><i>Qualifying Statements:</i></p> <ul style="list-style-type: none"> <li>The gender assigned at birth of biological relatives is important to the family history.</li> <li>Where it is possible and time permits, information on third-degree relatives (e.g., cousins), consanguinity, and personal and family history of colon polyps can help inform genetic testing and counseling, especially with interpretation of results.</li> </ul>	NR	S
	2.1. When germline genetic testing is indicated for a patient with cancer, multi-gene panel testing should be offered if more than one gene is relevant. (See Table 2 in the guideline for details.)	NR	S

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Q2 – Germline multi-gene panel testing	<p><b>2.2.</b> When considering what to order for multi-gene panel testing, clinicians should apply the following principles:</p> <ol style="list-style-type: none"> <li>1. The minimal panel should include at least the more strongly recommended genes for that patient based on the patient’s personal and family history of cancer from Table 2 of this guideline and may include the less strongly recommended genes.</li> <li>2. A broader panel may be ordered when the potential benefits of such a panel can be clearly identified.</li> <li>3. When ordering a panel (especially a broader panel), the clinician should ensure that potential harms are mitigated. See Clinical Interpretation (in the guideline) for further clarification.</li> </ol> <p>A smaller panel of genes may be tested initially when results are needed quickly for treatment decision making with subsequent expansion to a larger panel of genes.</p>	NR	NR <small>see Clinical Interpretation in the guideline</small>
Q3 – Genes to be included in multi-gene panels	<p><b>3.</b> If germline multi-gene panel testing is offered, testing for pathogenic variants in the genes in Table 2 (in the guideline) is recommended for the indicated populations of patients with cancer. Testing the genes in the left-hand column is more strongly recommended based on the higher relative risk for that cancer and/or higher actionability than those on the right but testing all genes relevant to the patient personal and family cancer history is reasonable. See text in the guideline for criteria for the column assignments.</p>	NR	S
Q4 – Germline testing in association with somatic genetic tumor testing	<p><b>4.1.</b> Patients who meet criteria for germline genetic testing should be offered that testing regardless of results from tumor testing (<i>i.e.</i>, genomic profiling from tumor biopsy or circulating tumor DNA testing).</p>	L	S
	<p><b>4.2.</b> Regardless of germline genetic testing criteria, when a pathogenic variant is identified with tumor testing in a gene listed in Table 3 (in the guideline) germline genetic testing should be offered according to the criteria in Table 3 and Table 4 in the guideline.</p>	M	S

**Note.** The strength of the recommendation is defined as follows, Strong: In recommendations for an intervention, the desirable effects of an intervention outweigh its undesirable effects. In recommendations against an intervention, the undesirable effects of an intervention outweigh its desirable effects. All or almost all informed people would make the recommended choice for or against an intervention.; Conditional/Weak: In recommendations for an intervention, the desirable effects probably outweigh the undesirable effects, but appreciable uncertainty exists. In recommendations against an intervention, the undesirable effects probably outweigh the desirable effects, but appreciable uncertainty exists. Most informed people would choose the recommended course of action, but a substantial number would not.

**Abbreviations.** L, low; M, moderate; NR, not rated; S, strong