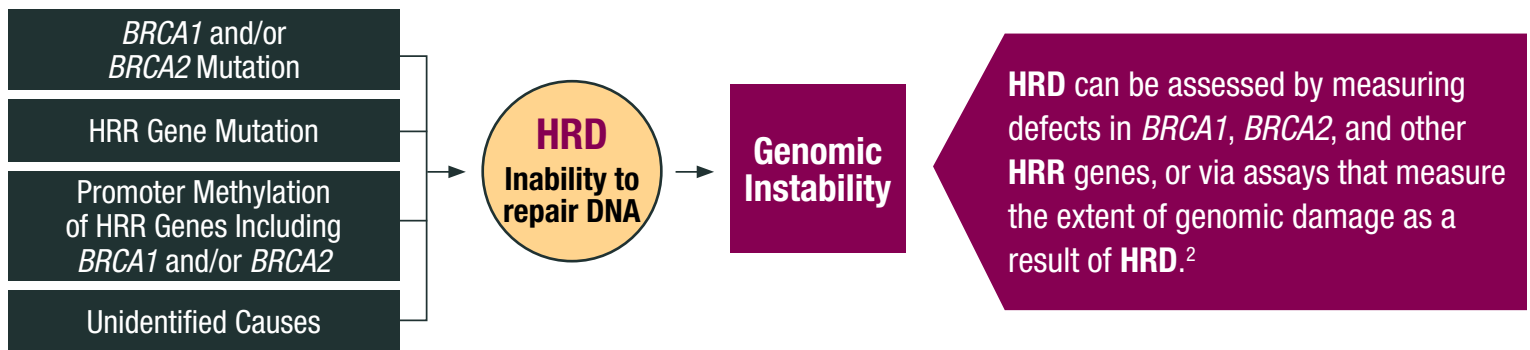


Homologous Recombination Deficiency (HRD): An Actionable Biomarker in Ovarian Cancer

HRD describes a tumor that has an impaired ability to repair DNA double-strand breaks through homologous recombination repair (**HRR**).¹

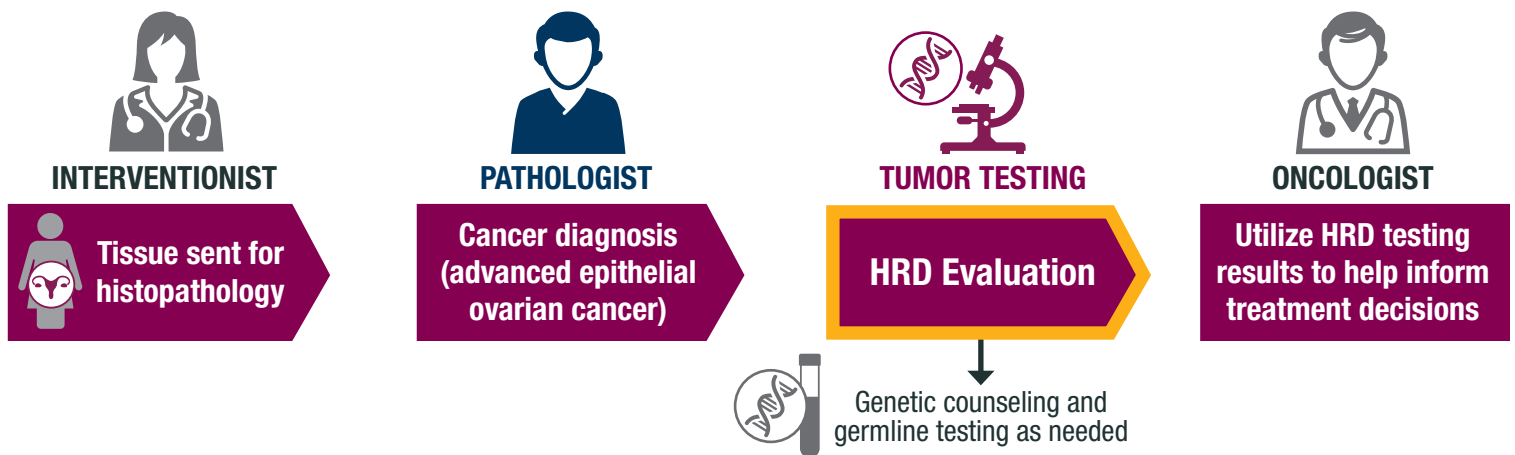


HRD testing can help identify patients most likely to benefit from certain therapies.²

Ensuring patients are tested in accordance with guidelines may lead to optimal patient management.³

Pathologist-Initiated Testing Can Improve Patient Identification

Example: Pathologist-Initiated Testing Protocol³⁻⁵







Testing initiated from the pathologist helps ensure all patients with ovarian cancer undergo tumor testing.

Pathologists are uniquely situated to develop and lead a precision medicine protocol for testing.⁶

Pathologist-Initiated Testing Empowers Physicians to Make Informed Treatment Decisions⁴

PARP plays an important role in DNA repair

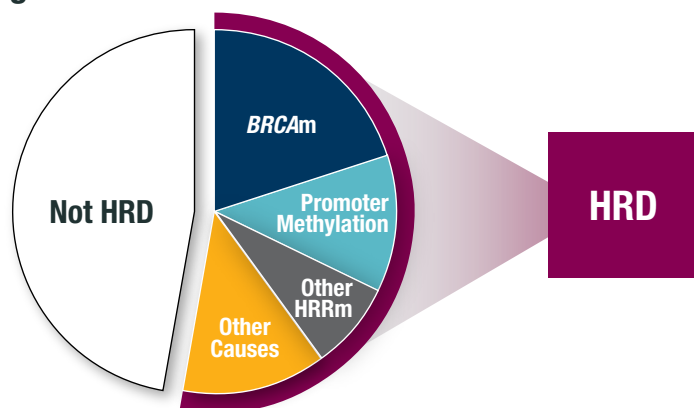
- The effects of **HRD** lead to the accumulation of DNA damage^{2,7}
- Ovarian cancer tumors with **HRD** have demonstrated increased sensitivity to platinum-based chemotherapies and to **PARP inhibition**^{2,7}


	Normal Cell	HRD Cell	PARP-Inhibited Cell	HRD and PARP-Inhibited Cell
DNA repair mechanism	DNA DAMAGE			
Base excision repair	✓	✓	X	X
Homologous recombination	✓	X	✓	X
	CELL SURVIVAL 	CELL SURVIVAL 	CELL SURVIVAL 	CELL DEATH^a 

^aSynthetic lethality occurs when the combination of 2 separate nonlethal defects becomes lethal to a cell.^{8,9}

With pathologist-initiated testing, the process for ordering specific biomarker tests can be standardized at the point of initial diagnosis.⁴

High-Grade Serous Ovarian Cancer Cases^b



 **≈1 in 4 women** with advanced ovarian cancer has a **BRCA mutation**^{11,12}

 **≈1 in 2 women** with advanced ovarian cancer has **HRD**⁷

Women without a **BRCA** mutation may still have tumors with **HRD**^{12,13}

^bApproximately 70% of patients with epithelial ovarian cancer have high-grade serous histology.¹⁰

Discuss establishing a testing protocol with the multidisciplinary team at your institution.⁶

Abbreviations: *BRCA*, breast cancer susceptibility gene; *BRCA1*, breast cancer susceptibility gene 1; *BRCA2*, breast cancer susceptibility gene 2; *BRCAm*, *BRCA* mutation; *HRRm*, homologous recombination repair mutation.

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