

Title: Lynch Syndrome *GeneReview*: Immunohistochemistry (IHC) Testing
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Date: February 2018

Immunohistochemistry (IHC) Testing

Advantages of IHC testing:

- IHC testing is effective for detecting tumors resulting from MMR deficiency. Antibodies for MSH2, MLH1, MSH6, and PMS2 have demonstrated 92% sensitivity for identifying tumors that arise in individuals with a germline pathogenic variant [Shia 2008].
- IHC testing is readily available at most centers and is technically easy to perform.

Limitations of IHC testing:

- Variation in tissue fixation and other technical issues can result in weak or equivocal staining patterns [Shia 2008].
- It is possible that some missense germline pathogenic variants will not result in the absence of a detectable protein product [Wahlberg et al 2002, Bellizzi & Frankel 2009].
- It may be less reliable when performed on small tissue samples [Zhang 2008].
- Although testing of tissue from colorectal carcinoma is clearly preferable, testing can be considered on an adenomatous polyp if cancer tissue is not available. However, abnormal IHC may be less reliably identified in Lynch syndrome-related polyps. Evaluation of 109 polyps from 69 individuals with a pathogenic variant found that only 79% of the adenomas demonstrated loss of MMR expression. Polyps with high-grade dysplasia are more likely to be concordant with pathogenic variant status than polyps with low-grade dysplasia [Walsh et al 2012].

Literature Cited

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