Precision medicine: When to order somatic cancer panel testing

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Somatic cancer panel testing, also called cancer genomic panels or tumor molecular panels, can simultaneously look for dozens or even hundreds of genetic variants driving cancer growth and expand patients’ treatment options by identifying targeted therapies. They represent a major advance in cancer care, but the circumstances under which such tests should be used vary depending on several factors. Discover more about this fast-developing area of precision medicine and test yourself with interactive case studies.

Somatic cancer panels are most often used when a patient’s cancer is advanced or has metastasized, when first-line treatment options have failed or when treatment options are limited, according to a new educational module developed by the AMA in partnership with the Scripps Translational Science Institute and The Jackson Laboratory.

In such cases, patients may need additional treatment options and these tests can identify targeted therapies and clinical trials that might be effective. Panels that test for many genetic variants can offer an advantage over tests that assess only one or a few variants, since they may identify more variants and more potential therapies at once. Some oncologists have even advocated that all patient tumors undergo somatic cancer panel testing, though others argue that the evidence to support such a universal testing approach is not yet available.

Not every patient will benefit from somatic cancer panel testing, though. For example, a patient with a cancer that can be effectively treated without a targeted therapy usually will not need testing. Additionally, a patient in very poor health with several comorbidities may not be a suitable candidate for testing. Other drawbacks of the tests include:

- Variants may be identified whose significance is uncertain, or for which treatments have not been developed or are not yet being tested in clinical trials
- Even if an actionable variant is identified, the patient may lack the resources to obtain the


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associated treatment, either because it is too expensive or because it is only available through a clinical trial. Some health plans still balk at paying for these tests, so ordering them may require advocacy with payers or additional administrative work to secure insurance authorization.

The educational module on somatic cancer panel testing offers a wealth of information on these and many other aspects of this emerging, vital clinical tool, such as key questions to ask laboratories, patient-oriented educational material and a table of biomarkers in drug labeling. Case studies demonstrate the benefits and limitations of testing, and offer physicians the opportunity to practice identifying which patients are the best candidates for testing. *AMA PRA Category 1 Credit™* is available.

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