



CANCERcare®

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fact sheet

## Metastatic Colorectal Cancer and KRAS Gene Testing

Colorectal cancer is one of the most commonly diagnosed cancers in the United States. Fortunately, advances in the treatment of colorectal cancer have dramatically improved survival rates. And now, thanks to a better understanding of a gene called KRAS, researchers have developed a way to personalize treatment for some patients with metastatic colorectal cancer.

**Here are some questions and answers about personalized medicine and the role of the KRAS gene in colorectal cancer:**

### **What is personalized medicine?**

Personalized medicine is the opposite of a “one size fits all” approach. In the past, all patients with the same type and stage of colorectal cancer got the same treatment.

But today, researchers know that no two patients’ tumors are exactly alike. In the case of metastatic colorectal cancer, doctors can use information about your tumor to help them decide whether one treatment is more likely to work than another. Knowing that a treatment is not effective for you spares you the side effects related to that particular treatment.

### **What are biomarkers?**

Personalized medicine is made possible by the discovery of biomarkers. Biomarkers are molecular characteristics of a tumor that can be used to help make decisions about your treatment. The biomarker that is helping doctors personalize treatment for metastatic colorectal cancer is the KRAS gene.

### **What is the KRAS gene?**

KRAS (pronounced kay-razz) is a gene that is found to be mutated, or changed, in about 40% of people with colorectal cancer. The other 60% of people have a non-mutated (sometimes called “wild type”) KRAS gene. Research shows that the two drugs cetuximab (Erbix) and panitumumab (Vectibix), often used with chemotherapy, are not effective in tumors that carry the KRAS mutation. A test known as KRAS mutation analysis, or simply “KRAS testing,” can tell whether your tumor carries this mutation.

### **Should I be tested for the KRAS gene mutation?**

According to the National Comprehensive Cancer Network (NCCN) clinical practice guidelines for colon cancer, all patients with metastatic colorectal cancer should be tested for the KRAS mutation.



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If you are found to have the KRAS mutation, you should not receive treatment with cetuximab or panitumumab. Your doctor should recommend treatments other than these two drugs.

### **Can KRAS testing tell me for sure what treatment is best?**

KRAS testing reveals which patients have a KRAS mutation and will thus not benefit from treatment with cetuximab or panitumumab. If your test shows that you have the non-mutated KRAS gene, then these drugs are an option for you. However, even though most people with the non-mutated gene respond well to treatment with cetuximab or panitumumab, not everyone does. There may be other tumor markers than can give clues as to what treatments will work best for these patients, so research in this area continues.



### **How is KRAS testing performed?**

KRAS mutation analysis is done on sample tissue from tumors removed during surgery. The tumor samples are sent by your doctor to a lab that performs the test, and the results can be ready in a few days or weeks.

### **Are these tests covered by insurance?**

Most insurance companies cover KRAS testing for people with metastatic colorectal cancer who are being considered for treatment with cetuximab or panitumumab. Check with your insurer to see if your policy covers it and whether pre-authorization is required. They may also be able to offer assistance with sorting through paperwork related to the test if your doctor does not submit your claims for you.

### **What if I have other questions or concerns?**

Your health care team can answer any questions you have about KRAS testing and what the results would mean for you. If your test shows you have the non-mutated KRAS gene, for example, your doctor can explain how cetuximab or panitumumab may benefit you. If you are found to have the KRAS mutation, he or she can describe your full range of treatment options, including clinical trials.

### **CancerCare Can Help**

If you or a loved one has been diagnosed with colorectal cancer, contact CancerCare. We are a national nonprofit organization that provides free, professional support services for anyone affected by cancer. We offer individual counseling, support groups, educational workshops, informative fact sheets and booklets, financial help, and referrals. To learn more, call us at **1-800-813-HOPE (4673)** or visit [www.cancer.org](http://www.cancer.org).

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