

# ***KRAS* mutation testing of tumours in adults with metastatic colorectal cancer: a systematic review and cost-effectiveness analysis**

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## **Plain English summary**

### ***KRAS* mutation testing of tumours**

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## Plain English summary

**B**owel cancer is the third most common cancer in the UK, accounting for 13% of new cancer cases and around 10% of all cancer deaths. Around three-quarters of bowel cancers are initially treated with surgery, but around one in six will go on to spread to the liver. When this happens the cancer in the liver can sometimes be treated by further surgery, or, when surgery is not initially possible, chemotherapy may be used with the aim of shrinking the tumour to make surgery possible.

Tumours with mutations in a growth factor [Kirsten rat sarcoma viral oncogene (*KRAS*)] are less responsive to treatment with biological therapies, such as cetuximab. Before deciding on treatment options, patients are tested to see if their tumour has a mutation in the *KRAS* gene. There are a variety of tests available and different tests vary in the specific mutations that they attempt to detect, the amount of mutation they are able to detect, the amount of tumour cells needed for the test to work, the time that it takes to give a result, the error rate of the test and the cost of the test.

This project aimed to evaluate *KRAS* mutation tests to determine which should be recommended for use in the NHS in England and Wales. A survey of UK laboratories undertaking *KRAS* mutation testing, a systematic review of the literature and economic modelling found that there was no strong evidence that any one *KRAS* mutation test had greater accuracy, or was more cost-effective, than any other test.

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