



RAF	CEA	ctDNA	DPYD	FAP	HER2	KRAS	Lyr
MSS: Microsatellite Stability						NRAS	NTRI
K3CA	TMB	Tumor Location/Sidedness				UGT1A1	F

If you have the MSI-High biomarker, please refer to the Microsatellite Instability (MSI) Fact Sheet.

Who should have MSS/MSI biomarker testing?

All colorectal cancer (bowel cancer) patients should be tested for MSS / MSI, no matter what stage they have at diagnosis. If your result is MSI-High, you should also be tested for Lynch Syndrome.

What is MSS/MSI?

The MSS/MSI biomarker gives information about how your cells handle errors that happen during cell processes. During growth, or healing of organ and tissue damage, your cells divide to make more cells. As each cell splits, the DNA divides and makes a copy of itself for the new cells. Mistakes in the copying process are called DNA mismatch, and the MSS / MSI biomarker specifically shows whether your cells can fix these mistakes. This is called DNA mismatch repair (MMR).

Microsatellites are small repetitive segments of DNA. When these DNA segments are unchanged, the tumor cells are considered microsatellite stable, meaning the cells are able correct DNA mismatch repair errors. When the microsatellite segments show changes, this indicates that the tumor cells are deficient in the repair of mismatch errors, and have microsatellite instability.



Biomarker testing can give you and your medical team valuable knowledge about your cancer and help guide your treatment choices. For more information about colorectal cancer biomarkers, please visit knowyourbiomarker.org and talk to your medical team.

How is MSS/MSI tested? How are the results reported?

The MSS / MSI biomarker is measured in a biopsy of your tumor (tumour). Your test results will be reported as either MSS (also known as pMMR, proficient mismatch repair) or MSI-High (also known as dMMR, deficient mismatch repair).

What do my MSS/MSI results mean for me? How do they impact my treatment?

If you have the MSS biomarker, this means that your cells can correct the errors that occur in DNA (DNA mismatch repair), and that there are no mutations in your mismatch repair (MMR) genes.

- MSS occurs in 85% of all colorectal cancers. It is more common in earlier stages of cancer.
- Immunotherapy is not effective in colorectal cancers with MSS and is not recommended unless tumor mutational burden (TMB) is high. If you have MSS, talk to your medical team about TMB testing.
- Immunotherapy can be effective in MSS tumors with TMB-High.
- MSS patients are treated with fluorouracil-based chemo- therapy (for example, 5-FU, FOLFOX, FOLFIRI), or with other conventional chemotherapy (capecitabine, CAPOX).
- Patients with the MSS biomarker have a higher risk of cancer recurrence. Talk to your medical team about how you will be checked for recurrence during follow-up care.