

**WHO SHOULD BE TESTED FOR CEA?**

CEA should be tested in all colorectal cancer patients before treatment begins. This allows a comparison of CEA level before, during, and after treatment.

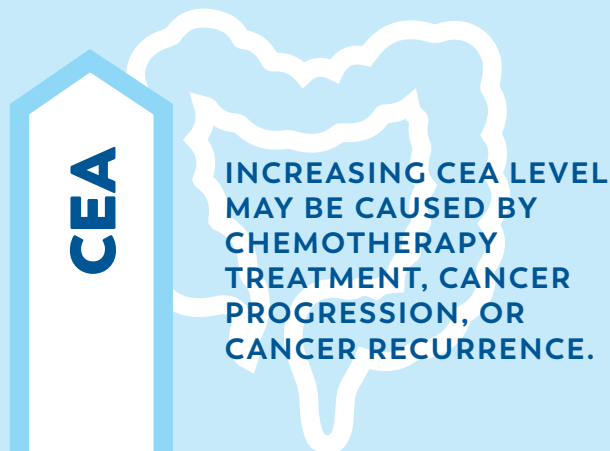
**WHAT IS CEA?**

CEA is a protein made by gastrointestinal cells. It is mostly made during fetal development, and healthy adult levels are very low. CEA level is often increased in colorectal cancer. It may also be increased in patients with some benign digestive system diseases and in patients with some other cancers. Heavy smokers may also have increased CEA. CEA is not always increased in colorectal cancer.

**HOW IS CEA TESTED? HOW ARE THE RESULTS REPORTED?**

CEA is measured in a blood sample. CEA is usually tested at multiple timepoints before, during, and after treatment, to look for increases or decreases in CEA level over time.

CEA is reported as a number, representing the amount of CEA found in a specific amount of blood. Normal levels are usually less than 3 ng/ml (nanograms per milliliter). Smokers may have levels as high as 5 ng/ml.

**WHAT DO MY CEA RESULTS MEAN FOR ME?  
HOW DO THEY IMPACT MY TREATMENT?****If your CEA is high**

- Increased CEA may help confirm the presence of cancer during diagnosis.
- Increased CEA alone, without cancer symptoms or findings, is not enough to diagnose cancer.
- Higher CEA level is associated with poorer overall survival rate in colorectal cancer patients.

**If your CEA increases over time**

- Increasing CEA level during treatment may be caused by cancer progression. If your cancer is progressing, your medical team will adjust your treatment plan.
- CEA level may increase after starting chemotherapy, and then decrease as treatment continues. This is called a “CEA flare”. Patients who experience a CEA flare have a better prognosis.
- Increasing CEA level after treatment may be caused by cancer recurrence. Your medical team will do more testing (such as colonoscopy, biopsy, or PET/CT scan) to confirm or rule out a recurrence.
- Treatment options for colorectal cancer recurrence are based on your response to previous treatments and results of other biomarker testing.

**If your CEA decreases over time**

- Decreasing CEA is a sign that your colorectal cancer treatment is working.
- CEA levels usually decrease after successful colorectal cancer surgery.

**If your CEA is normal**

- Normal CEA level does not rule out the possibility of cancer because some colorectal cancers do not cause increased CEA.
- Normal CEA is associated with a better overall survival rate in colorectal cancer.

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](https://knowyourbiomarker.org) and talk to your medical team.