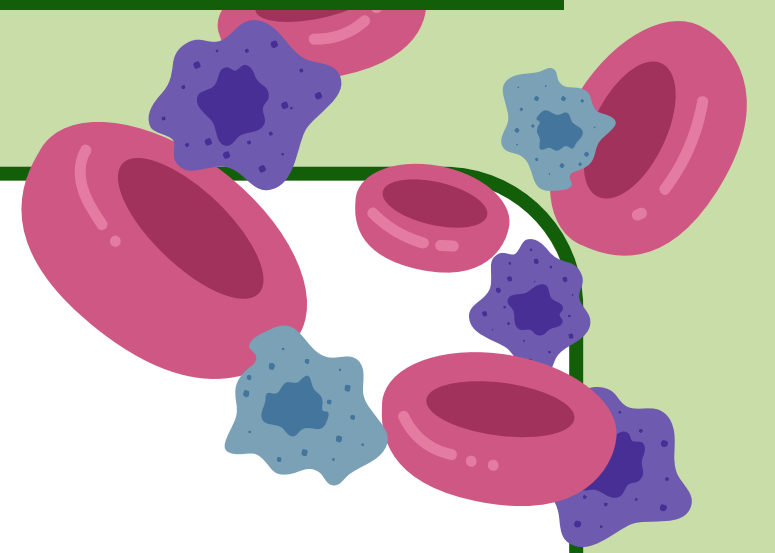# Biomarkers of Cancer

What Are Biomarkers of Cancer?

- Biomarkers are like small clues in our bodies.
- Some biomarkers can be used to measure exposure to chemicals from the environment.
- Some biomarkers can show early changes in our cells and tissues that may be linked to cancer in the future.

How are Cancer Biomarkers Used?

- Biomarkers are measured in blood, urine, stool, and other bodily fluids. [1,7]
- New biomarkers are discovered every day. CEECR is researching how the different measures can detect early cancer or cancer that is already there.
- It is still important to use standard methods of finding and monitoring cancer, like scans or tissue biopsies. [5]

Cancer Biomarkers Can Help With...

Screening

Identify new cancer or returning cancer in routine tests. [7]

Diagnosis

Help determine if a tumor is cancerous and how advanced it may be. [7]

Care

Predict how cancer behaves based on patient factors. [6]

Monitoring

Monitor cancer growth and spread before, during, and after treatment. [2]
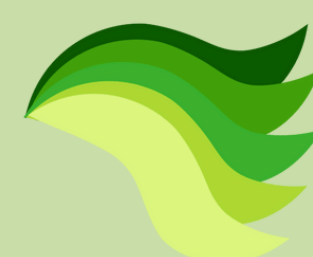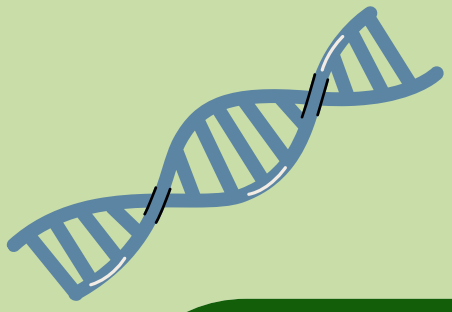
Treatment

Track how the cancer responds to treatment, and make changes as needed. [4,6]
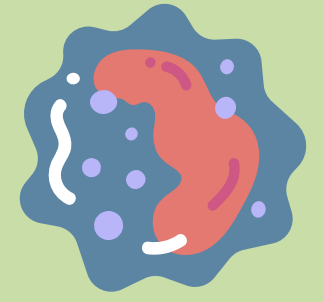
And More

Guide future research to better predict risks and outcomes. [6]

Please Note: Not all biomarkers are effective in all of these areas, and may only be effective for certain cancers.

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Types of Biomarkers

Genetic Biomarkers	Changes in someone's DNA that can show if they have cancer or risk of developing cancer.
Protein Biomarkers	Compounds that cancer cells make, or compounds that our healthy cells make in response to cancer.
Epigenetic Biomarkers	Changes in whether genes are turned on or off when there is cancer present.
Metabolic Biomarkers	Small molecules produced by the body when cancer is present.[1,7]
Environmental Biomarkers	Changes in the body that are caused by exposure to chemicals from the environment.
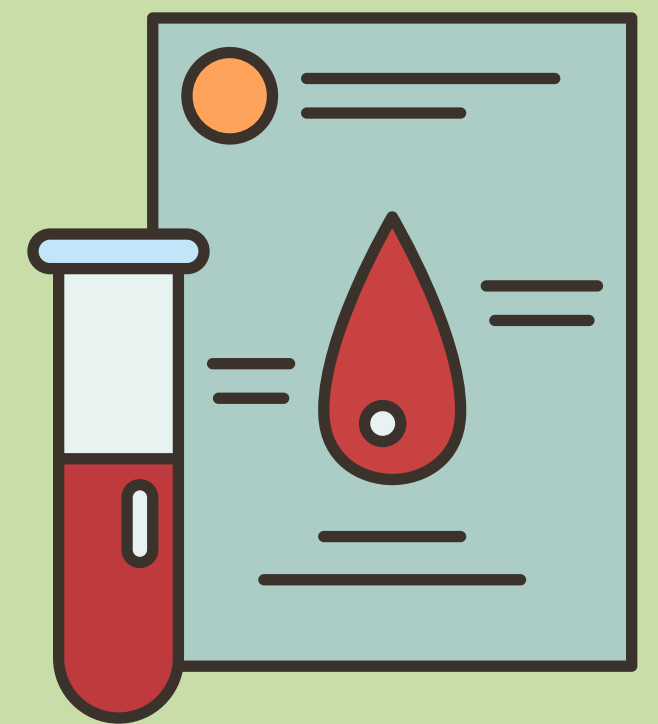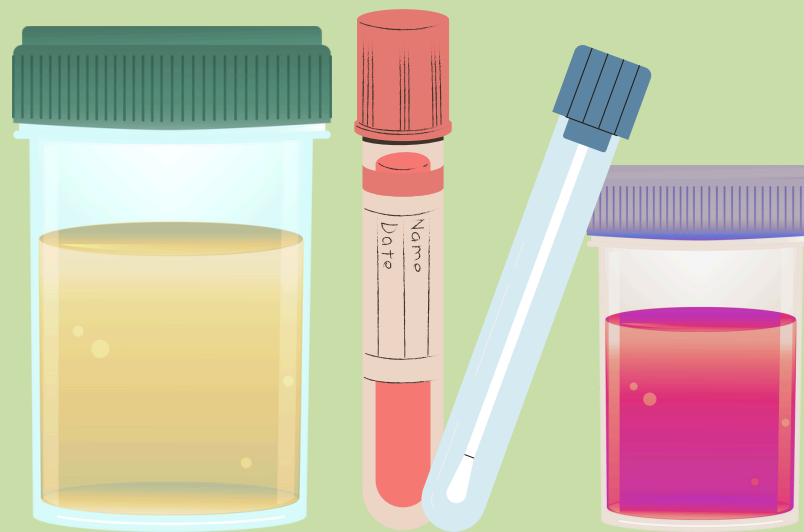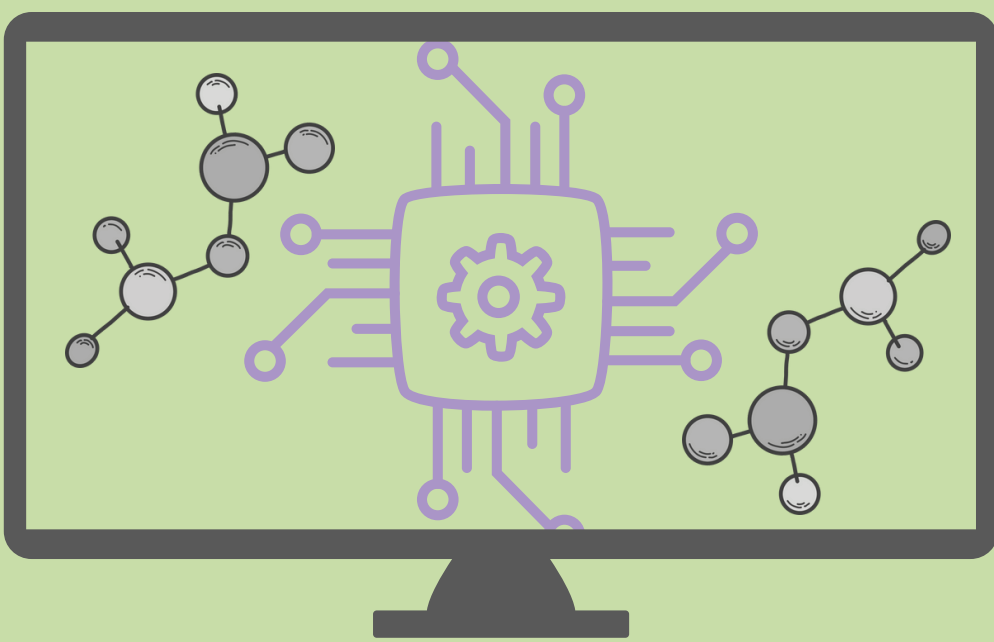
The Future of Biomarkers

- More research helps us detect new markers that will help to prevent, find and treat cancer sooner.
- New biomarkers provide clues for cancer risk.
- More research on biomarker response to treatment can improve care.[5]
- New tools for predicting cancer risk and diagnosis are developed every day.[3]
- Environmental biomarkers are being studied to detect how dangerous doses of chemicals from the environment may increase cancer risk.

References

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