

# CANCER DIAGNOSIS & TREATMENT: A Glossary of Terms

## Testing



### Biopsy

The removal of a tissue sample from a patient to look at the presence, cause or extent of a disease.<sup>2</sup>



### Companion Diagnostic

A test or measurement for a biomarker to help doctors predict whether a patient is likely to benefit from a particular type of medicine.<sup>3</sup>



### Histology

The study of tissues and cells under a microscope.<sup>5</sup>



### Molecular Testing (Biomarker Testing, Tumor Marker Testing, Molecular Profiling or Mutation Profiling)

A process that allows doctors to look inside tumor cells for gene mutations or changes that may have caused them to be cancerous. This type of test helps a doctor develop a treatment plan for a patient.<sup>9</sup>

## Diagnosis



### Biomarker (Molecular Marker)

A biological molecule found in blood, other body fluids or tissues, which is a sign of a normal or abnormal process, or of a condition or disease. A biomarker may be used to see how well the body responds to a treatment for a disease or condition.<sup>1</sup>



### Genetic Mutations

Genetic mutations are changes in a gene's DNA that cause genes to function abnormally.<sup>4</sup>



### Progression

When the cancer grows larger or spreads to other parts of the body.<sup>4</sup>



### Receptor

A receptor is a protein inside or on the surface of a cell that binds to a specific substance that appears on the outside the cell.<sup>4</sup>



### Tumor Markers

Substances, sometimes made by cancer cells, normally present in small amounts in the blood or other tissues. When the amount rises above normal, cancer might be present in the body.<sup>4</sup>

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## Types of Cancer



### Local Cancer

An invasive, malignant cancer confined entirely to the organ where the cancer began.<sup>6</sup>



### Regional Cancer

Cancer that has grown beyond the original (primary) tumor to nearby lymph nodes or organs and tissues.<sup>7</sup>



### Metastatic Cancer (Stage IV Cancer)

The spread of cancer from the primary site to other places in the body.<sup>8</sup>

## Treatment



### Biomarker-Driven Therapy (Targeted Therapy)

A type of treatment that is designed to block the action of cancer-causing genes or proteins.<sup>10</sup>



### Chemotherapy

A cancer treatment that works by stopping or slowing the growth of dividing cancer cells.<sup>11</sup>



### Complete Response

When signs of cancer cannot be detected by your doctor, based on your symptoms, physical exam, as well as radiology and lab tests. This does not always mean the cancer has been cured.<sup>4</sup>



### First-Line Treatment (Initial Treatment)

The first treatment that a doctor prescribes to a patient for a disease.<sup>12</sup>



### Immunotherapy (I/O, Immuno-Oncology, Biologic Therapy or Biotherapy)

A treatment that uses a patient's own immune system to help fight cancer. Some immunotherapy treatments boost the body's immune system, while others help train the immune system to attack cancer cells specifically.<sup>13</sup>



### Monoclonal Antibodies (mAbs)

Laboratory-developed proteins that can bind to substances in the body and are used to help treat cancer, or carry drugs, toxins or radioactive substances directly to cancer cells. There are many different types of mAbs, and each is made to bind to only one substance or antigen.<sup>14</sup>



### Oncolytic Virus

A virus that is bioengineered to selectively infect and kill cancer cells, leaving healthy cells intact. The virus can enter normal cells and cancer cells alike, but normal cells have mechanisms to kill the virus, while cancer cells do not. As the virus replicates, it causes cancer cells to burst and die. The dying cells release new viruses, called GM-CSF and tumor-specific antigens to stimulate an immune response.<sup>15</sup> Oncolytic viruses may help make it easier to kill tumor cells with radiation or chemotherapy.<sup>16</sup>

## Treatment (Cont'd)



### Palliative Therapy

Treatment (systemic, surgery, radiation) to relieve symptoms caused by advanced cancer, and to improve the quality of life and sometimes extend life, but it is not intended to cure the cancer.<sup>4</sup>



### Partial Response (Partial Remission)

A decrease in the size of a cancer, or in the range of cancer in the body, in response to treatment.<sup>4</sup>



### Personalized Medicine (Precision Medicine)

Personalized or precision medicine is the process of finding which treatment approaches may work better for certain patients based on genetic, environmental and lifestyle factors.<sup>17</sup>



### Radiation Therapy

Radiation therapy is the use of high-energy radiation from x-rays, gamma rays, neutrons and other sources to kill cancer cells and shrink tumors.<sup>4</sup>



### Second-Line Treatment

Treatment that is usually started after the first treatment or set of treatments doesn't work, has stopped working or has caused side effects that cannot be tolerated.<sup>18</sup>



### Systemic Therapy

Treatment that treats the cancer but also affects the whole body (your whole system).<sup>4</sup>



### Tyrosine-Kinase Inhibitor (TKI) Therapies

A type of medication that prevents cells from growing and dividing by blocking and stopping cancer-specific molecules and certain cell processes.<sup>19</sup>



### Vaccine-Based Immunotherapy Regimens (VBIIRs)

Cancer vaccines activate cell-killing T-cells and direct them to recognize and act against specific types of cancer. To accomplish this, vaccines introduce one or more cancer-specific antigens into the body, where they induce an immune response that results in T-cell activation or antibody production.<sup>20</sup>

**References:** 1. National Cancer Institute. NCI dictionary of cancer terms: biomarker. Available at: <http://www.cancer.gov/publications/dictionaries/cancer-terms/CdrID=45618>. Accessed May 2018. 2. National Cancer Institute. NCI dictionary of cancer terms: biopsy. Available at: <http://www.cancer.gov/publications/dictionaries/cancer-terms/?print=1&searchTxt=biopsy>. Accessed May 2018. 3. Olsen D, Jørgensen J. Companion diagnostics for targeted cancer drugs – clinical and regulatory aspects. *Front Oncol*. 2014; 4: 105. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4032883>. Accessed May 2018. 4. BreastCancer.org. Metastatic breast cancer dictionary. Available at: [http://www.breastcancer.org/symptoms/types/recur\\_metast/slideshows/mbc-dictionary?slide=1](http://www.breastcancer.org/symptoms/types/recur_metast/slideshows/mbc-dictionary?slide=1). Accessed May 2018. 5. National Cancer Institute. Non-small cell lung cancer treatment –for health professionals (PDQ®). Available at: [http://www.cancer.gov/types/lung/hp/non-small-cell-lung-treatment-pdq#section/\\_4](http://www.cancer.gov/types/lung/hp/non-small-cell-lung-treatment-pdq#section/_4). Accessed May 2018. 6. National Cancer Institute. NCI dictionary of cancer terms: local cancer. Available at: <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/local-cancer>. Accessed May 2018. 7. National Cancer Institute. NCI dictionary of cancer terms: regional cancer. Available at: <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/regional-cancer>. Accessed May 2018. 8. National Cancer Institute. NCI dictionary of cancer terms: metastatic. Available at: <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/metastatic>. Accessed May 2018. 9. National Cancer Institute. Molecular test. Available at: <http://www.cancer.gov/publications/dictionaries/cancer-terms/CdrID=766166>. Accessed May 2018. 10. Bailey A, Mao Y, Zeng J, et al. Implementation of biomarker-driven cancer therapy: existing tools and remaining gaps. *Discov Med*. 2014; 17(92): 101–114. 11. American Cancer Society. Chemotherapy what is it, how it helps. Available at: <http://www.cancer.org/acs/groups/cid/documents/webcontent/003321-pdf.pdf>. May 2018. 12. National Cancer Institute. NCI dictionary of cancer terms: first-line therapy. Available at: <http://www.cancer.gov/publications/dictionaries/cancer-terms/CdrID=346494>. Accessed May 2018. 13. American Cancer Society. Cancer immunotherapy. Available at: <http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/immunotherapy/immunotherapy-toc>. Accessed May 2018. 14. National Cancer Institute. NCI dictionary of cancer terms: monoclonal antibody. Available at: <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/monoclonal-antibody>. Accessed May 2018. 15. National Cancer Institute. Oncolytic virus therapy shows benefit in patients with melanoma. Cancer Currents Blog. July 21, 2015. Available at: <https://www.cancer.gov/news-events/cancer-currents-blog/2015/oncolyticvirus-melanoma>. Accessed May 2018. 16. National Cancer Institute. NCI dictionary of cancer terms: oncolytic virus. Available at: <https://www.cancer.gov/publications/dictionaries/cancer-terms/search?contains=false&q=Oncolytic+Virus>. Accessed May 2018. 17. Genetics Home Reference. What is the difference between precision medicine and personalized medicine? What about pharmacogenomics? Available at: <http://ghr.nlm.nih.gov/handbook/precisionmedicine/precisionpersonalized>. Accessed May 2018. 18. National Cancer Institute. NCI dictionary of cancer terms: second-line therapy. Available at: <http://www.cancer.gov/publications/dictionaries/cancer-terms/CdrID=346513>. Accessed May 2018. 19. Arora A, Scholar M. Role of tyrosine kinase inhibitors in cancer therapy. *The Journal of Pharmacology and Experimental Therapeutics*. 2005; 10:1124. 20. National Cancer Institute. Cancer vaccines. Available at: <https://www.cancer.gov/about-cancer/causes-prevention/vaccines-fact-sheet#q4>. Accessed May 2018.