

Personalized Medicine: Promises and Challenges
American Association for the Advancement of Science (AAAS)
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GLOSSARY

Hormonal treatment adds, blocks, or removes hormones. Synthetic hormones or other drugs may be given to slow or stop the growth of certain cancers (such as prostate and breast cancers). This treatment functions by blocking the body's natural hormones.

Chemotherapy is the use of chemical agents in the treatment of cancer. These drugs may be given prior to surgery or radiation to make those treatments more effective, following surgery or radiation treatment, or as the sole cancer treatment.

Histological analyses use a microscope to examine the minute structure of animal or plant tissues. In medicine, diagnoses are often arrived at by histological examination.

A **Lumpectomy** is a surgical procedure in which only the cancerous tumor and some surrounding tissue in the breast are removed. This type of surgery can often replace a mastectomy, which surgically removes the entire breast.

In medicine, a **Biomarker** is a substance (often a gene or an antibody) or other indicator (a finding from an imaging procedure) that may be important in the diagnosis, treatment or prevention of disease. Biomarkers may identify subgroups of diseases (for example, different types of breast or lung cancer), may correlate with the progression of a disease, may identify which individuals will respond to particular drugs or to different doses of those drugs or which patients might have an adverse reaction to a medicine, or may indicate susceptibility to a disease in the future. Often biomarkers are used by physicians as a surrogate endpoint for evaluating clinical status, for example, cholesterol levels as a surrogate for coronary artery disease.

An **Oncologist** is a physician who studies cancer or who treats patients who have cancer.

Genetically predisposed individuals possess a genetic factor that increases the risk of getting a particular disease. Predisposing genes do not always mean that the person will actually get the disease, because other factors – for example, environmental conditions – can affect the action of the gene.