cancer cells that may have spread outside of the breast and to prevent these from forming new tumors, called metastases, in the future. Adjuvant therapy is usually given after the surgery, but in some cases, it is given before the surgery to help shrink the tumor and make it easier to remove (called neoadjuvant therapy).

A number of factors determine if a male breast cancer patient needs adjuvant therapy and, if so, which type of therapy will be most effective for his particular cancer. These factors include the presence or absence of cancer cells in his lymph nodes, the size of the tumor, and whether his tumor contains hormone receptors or overproduces certain proteins, such as HER2/neu. Clinical trials of new treatments for breast cancer are also available.

Systemic Therapy for Treatment of Metastatic Disease

Systemic therapy is also given to patients whose disease has spread from the breast to other organs (metastatic, or stage IV, disease). For the treatment of metastatic breast cancer, the choice of systemic treatment is made based on each patient's individual disease and takes into account such factors as the tumor's characteristics and location.

Patients with metastatic disease can ask their doctor to find out if there is an appropriate clinical trial available to them.

Chemotherapy

Chemotherapy drugs work by interrupting the cell's growth. In treating breast cancer, doctors often use a combination of two or three drugs at one time. Common chemotherapy drugs for breast cancer include:

- albumin-bound paclitaxel (Abraxane®)
- capecitabine (Xeloda®)
- carboplatin (Paraplatin®)
- cyclophosphamide (Cytoxan®)
- docetaxel (Taxotere®)
- doxorubicin (Adriamycin®)
- eribulin (Halaven®)
- etoposide (VP16)
- fluorouracil
- gemcitabine (Gemzar®)
- irinotecan (Camptosar®)

- liposomal doxorubicin (Lipodox®)
- methotrexate
- paclitaxel (Taxol®)
- vinorelbine (Navelbine®)

Hormonal Therapy

Hormones are made by glands in the body and then released into the bloodstream. Hormonal therapies take advantage of the fact that some cancers need certain hormones, such as estrogen, to grow.

About nine in ten men with breast cancer have tumors that are estrogen receptor–positive (ER positive), which means that the tumors grow in response to estrogen. These men can be treated with tamoxifen, a drug that targets the estrogen receptor and is also common for treatment of female breast cancer.

Other drugs that block the estrogen receptor, including fulvestrant (Faslodex®) and a group of drugs called aromatase inhibitors, have been shown to be effective in treating postmenopausal women. (See information about aromatase inhibitors under Breast Cancer.) Some reports suggest that these drugs may also work in men with breast cancer. However, more studies are needed to establish their efficacy in men.

HER2-Targeted Agents

Researchers are developing drugs that work by targeting specific molecules involved in breast cancer development. For example, some breast cancer cells overproduce the protein HER2/neu, leading to more-aggressive tumors. Trastuzumab (Herceptin®), lapatinib (Tykerb®), pertuzumab (Perjeta®), and ado-trastuzumab emtansine (Kadcyla®) are drugs that target and inactivate the HER2/neu protein. They are usually given in combination with other systemic therapies.

Targeted Therapies

A current focus of breast cancer research is finding other drugs that work by targeting specific molecules involved in breast cancer development, growth, and spread. These drugs include everolimus (Afinitor®) and palbociclib (Ibrance®), both of which are being evaluated in conjunction with hormonal therapy.

Many targeted therapies are currently only available within formal clinical trials.