Immunotherapy is a relatively new and promising area of breast cancer treatment that boosts the body's own immune system to recognize and fight cancer cells. It can be used alone for breast cancer treatment, or given along with other treatments like chemotherapy, radiation or surgery. Many types of immunotherapy drugs are used to fight breast cancer, including monoclonal antibodies and vaccines.

Monoclonal antibodies are one type of immunotherapy that help the immune system target and kill cancer cells. They attach to specific proteins on cancer cells, tagging them for the immune system to find and destroy. Monoclonal antibodies also work by “releasing the brakes” on the body’s immune system so it can destroy cancer cells. Some cancer cells disguise themselves as normal cells and hijack immune system pathways called “immune checkpoints.” Monoclonal antibodies called checkpoint inhibitors can block this “identity theft,” and help the immune system find and kill these cells.

Breast cancer vaccines are another type of immunotherapy that work like traditional vaccines, exposing the immune system to a cancer protein called an antigen. This exposure triggers the immune system to build up antibodies against the antigen, and then attack and destroy the cancer cells. Two types of cancer vaccines include treatment vaccines, which are designed to treat cancers that have already developed or that could recur; and preventive vaccines, which are intended to prevent the development of cancer.

Immunotherapy is rapidly emerging as one of the most promising cancer treatments, as ongoing research shows improved outcomes for several types of breast cancer in response to immunotherapy agents. These targeted and more personalized treatments are urgently needed to increase survival and are currently being evaluated in clinical trials for people with nearly all types of breast cancer.

More than $57 million in more than 140 research grants and 15 clinical trials focused on vaccines and immunotherapy

What We’re Investigating

- Testing whether the body’s own immune cells can be targeted to prevent or treat metastatic breast (MBC) cancer in the brain or lungs.
- Developing biomarkers that can predict who will respond to different immunotherapies and how to make immunotherapies more effective and longer-lasting.

Read how Komen Scholar Dr. Alana Welm is investigating the potential of inhibiting new drug target, sfRon, which may enable the body’s immune system to block metastatic spread of breast cancer to other parts of the body on the Komen blog.

Learn more about emerging areas in breast cancer therapy here. Learn more about participating in a breast cancer immunotherapy trial here.