Immunotherapies are a relatively new and promising area of breast cancer treatments that use the body’s own immune system to fight cancer. There are many types of immunotherapies, including the use of vaccines.

Like traditional vaccines used to fight infections such as polio, mumps and measles, breast cancer vaccines activate the body’s own immune system to kill cells that are considered foreign—in this case—breast cancer cells. The vaccines usually contain tumor antigens, which trigger your immune system to make antibodies that attack and destroy the cancer cells. Your immune system also develops a “memory” of those tumor antigens, so that later, if any new cancer cells appear, the antibodies produced from the initial vaccine would also destroy the new cancer cells.

There are two broad types of cancer vaccines: treatment, which are designed to treat cancers that have already developed or that could recur; and preventive, which are intended to prevent cancer from developing.

Researchers have made great progress in the development of breast cancer vaccines, but none have yet been approved by the FDA. One problem is that the tumor antigens in the vaccine often do not elicit a strong enough response to make the vaccine effective. This is why Komen-funded researchers have been working for nearly 20 years on the development, improvement and clinical testing of vaccines and other immunotherapies that will both treat and prevent breast cancer.

Learn more about emerging areas in breast cancer therapy
http://sgk.mn/ZqBVGB

What We’re Investigating

- Using cutting-edge techniques to identify unique tumor antigens that can be used to develop personalized breast cancer vaccines
- Creating new immunotherapies that can prevent breast cancer from developing, recurring or becoming resistance to therapy
- Developing and testing vaccines and other immunotherapies that specifically target metastatic breast cancer

What We’ve Learned from Komen-funded research

- A vaccine that targets a tumor antigen called MUC1 may be effective in treating breast cancer, and when combined with radiation may prevent tumors from recurring.
- A combination of uric acid—a compound that can activate the immune system—and a vaccine that targets HER2 may be effective in preventing the development of cancer.
- Human endogenous retroviruses (HERVs)—inactive pieces of DNA—may act as a novel tumor antigen for both preventive and treatment vaccines, particularly for ductal carcinoma in situ (DCIS).