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that a type of white blood cell called the neutrophil has the ability to kill breast cancer cells that have spread to the lung, a common site of metastasis for breast cancer.

“When we did the initial experiment we didn’t believe it was possible that the neutrophils were killing the cancer cells,” says [Zvika Granot](#), the study’s first author and a postdoctoral fellow in the laboratory of [Sloan Kettering Institute](#) cancer biologist [Robert Benezra](#). The finding was surprising because earlier studies had shown that in primary tumors neutrophils make it easier for tumors to grow, in part by promoting blood vessel growth and suppressing immune responses.

“We found that tumors secrete factors that entrain neutrophils to kill tumor cells at distant sites prone to metastatic progression. The ability of these neutrophils to kill tumor cells at the primary tumor site is blocked by other factors secreted by the tumor that have not yet accumulated at the distant sites,” explains Dr. Benezra. “In addition, since we know what is preventing the killing capacity at the primary site, we are working on blocking the ability of tumor cells to inactivate neutrophils, creating a neutrophil therapy that is even more effective.”

The next step for the research is to test the neutrophils in combination with chemotherapy as an adjuvant (additional) treatment in mice after surgery to remove their primary tumors. “We expect the treatment to be nontoxic and that we’ll be able to delay or prevent metastatic progression in the most aggressive forms of breast cancer,” Dr. Benezra adds. “If these animal models are predictive, eventually a large number of patients could benefit.”

The research was published in *Cancer Cell* in September. [PubMed Abstract](#)

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