

# Heat-Treated Tumors Respond Better to Chemotherapy

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By Kate Kelland

Cancer patients whose tumors are targeted with heat treatment as well as chemotherapy are more likely to stay alive and cancer-free for longer than those who receive only chemotherapy, researchers said on Tuesday.

The finding suggests it may be possible to cut the dose of chemotherapy drugs by using heat, although more research is needed to establish this, they said.

German researchers looking at cancers in soft tissues such as muscle, fat, and tissue around the joints found that heat treatment more than doubled the proportion of patients whose tumors responded to chemotherapy.

Importantly, the process did not increase the harmful effects of chemotherapy treatment.

"We expect our findings will encourage other researchers to test the approach in other locally advanced cancers," said Rolf Issels, a medical oncology professor at the University of Munich in Germany.

"Targeted heat therapy has already shown promise in recurrent breast and locally advanced cervical cancer in combination with radiation, and studies combining it with chemotherapy in other localized tumors such as those in the pancreas and rectum are ongoing."

Heat therapy for cancer involves a technique known as regional hyperthermia, which uses focused electromagnetic energy to warm the tissue in and around the tumor to between 104 and 109.4 degrees.

The heat not only kills cancer cells but also seems to make chemotherapy work better by making cancer cells more sensitive, Issels said. It also improves blood flow, allowing chemotherapy to be more effective.

Issels said his findings, presented at the ECCO-ESMO European cancer congress in Berlin, showed that soft-tissue sarcoma patients receiving the targeted heat therapy plus chemotherapy "fared better on all outcome measurements."

"Almost three years after starting treatment, they were 42 percent less likely to experience a recurrence of their cancer at the same site or to die than those who were getting chemotherapy alone," he said.

"The clear results of this trial show that the field has now matured to the point where we must step up efforts to explore its potential to offer an entirely new way of treating locally advanced disease in several major cancers," he said