

# Fasting and Cancer treatment

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Dr. Nasha Winters wrote about the benefits of fasting in her book, *Metabolic Approach To Cancer™*. Since her book was published, fasting has become increasingly popular as a therapeutic intervention.

A search on the PubMed database shows that there are currently over 5,000 scientific articles published on fasting and its effects on health. These studies cover a wide range of topics and most have reported positive outcomes including.

Fasting is a practice that involves refraining from consuming food and sometimes beverages for a specific duration. There are different types of fasts, each with its distinct approach and purpose. Some of the more common types include:

1. **Water Fasting:** This involves consuming only water for a specified period, usually lasting one to three days.
2. **Intermittent Fasting:** Intermittent fasting restricts food intake to a specific daily time window, typically involving 16-20 hours of fasting and 4-8 hours of eating.
3. **Alternate Day Fasting:** In this approach, fasting occurs every other day, with some variations allowing limited calorie intake on fasting days.
4. **Religious Fasting:** Fasting is observed as a spiritual discipline in some religions, such as during Ramadan.
5. **Partial Fasting:** Certain foods are restricted during partial fasting.

Studies that investigated the impact of fasting prior to or during chemotherapy treatments was shown to reduce side effects of and

improve the effectiveness of cancer treatments. Here are some summaries of the current research:

1. **Short-term fasting and fasting mimicking diets combined with chemotherapy: a narrative review.**  
In a study published in the journal *Cancer Research*, researchers found that fasting for 48-72 hours prior to chemotherapy treatment significantly reduced the side effects of the treatment while simultaneously increasing the effectiveness of the treatment against cancer cells.
2. **The effects of short-term fasting on quality of life and tolerance to chemotherapy in patients with breast and ovarian cancer: a randomized cross-over pilot study.**  
A clinical trial conducted on gynecological cancer patients showed that fasting for 36 hours prior to, during and 24 hours post chemotherapy reported better tolerance to chemotherapy, better quality of life and reduce fatigue in the fasted group.
3. **Fasting mimicking diet as an adjunct to neoadjuvant chemotherapy for breast cancer in the multicentre randomized phase 2 DIRECT trial.**  
A clinical trial with breast cancer patients were randomly selected to receive either a fasting mimicking diet (FMD) or their regular diet for 3 days prior to and during neoadjuvant chemotherapy. Study findings indicated that there was no difference in toxicity between the two groups and that

complete or partial responses occurred more often in the group receiving FMD. FMD was also found to reduce DNA damage in immune cells.

4. **Fasting and differential chemotherapy protection in patients.**  
A study conducted on patients with various types of cancer found that fasting for three days prior to chemotherapy treatment improved their overall quality of life and reduced the severity of common side effects such as nausea, vomiting, and diarrhea.
5. **Fasting and cancer treatment in humans: A case series report.**  
A clinical trial conducted on breast cancer patients showed that fasting for 24 hours prior to chemotherapy reduced the side effects of the treatment, such as fatigue, weakness, and gastrointestinal problems, without affecting the effectiveness of the treatment against cancer cells. And fasting may also help reduce cancer cell growth and play a role in cancer treatment.

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6. **Effect of fasting on cancer: A narrative review of scientific evidence.**  
This narrative review of scientific evidence discusses the potential for fasting to limit cancer cell adaptability, survival, and growth. The authors suggest that prolonged periodic fasting could be combined with conventional cancer treatments to promote cancer-

free survival and reduce side effects in cancer patients.

7. **Fasting and cancer: molecular mechanisms and clinical application**  
A second review article discusses the molecular mechanisms behind the potential benefits of fasting for cancer treatment. Cancer cells have distinct vulnerabilities when it comes to their nutritional needs and reliance on specific metabolites. Recent research has identified these vulnerabilities as emerging characteristics of cancer. Fasting, or adopting fasting-mimicking diets (FMDs), can trigger significant changes in the levels of growth factors and metabolites within the body. These changes create an environment that can undermine the ability of cancer cells to adapt and survive, thus enhancing the effectiveness of cancer treatments. Additionally, fasting or FMDs can bolster the resilience of normal cells to chemotherapy while not providing the same benefits to cancer cells. Furthermore, they promote the regeneration of normal tissues, potentially mitigating the harmful and potentially life-threatening side effects associated with cancer treatments. Although fasting is often challenging for patients, both animal and clinical studies have demonstrated that cycles of low-calorie FMDs are feasible and generally safe. Several ongoing clinical trials are investigating the impact of fasting or FMDs on the occurrence of treatment-related adverse events and treatment efficacy outcomes. In this context, we propose that combining FMDs with chemotherapy, immunotherapy, or other treatment modalities holds promise as a strategy to enhance treatment effectiveness, prevent the development of treatment resistance, and reduce side

effects.

8. **Fasting-mimicking diet and hormone therapy induce breast cancer regression.**

While this study reports on the fasting-mimicking diet and hormone therapy induce breast cancer regression. This preclinical study in mice investigated the effects of a fasting-mimicking diet combined with hormone therapy on breast cancer. The study found that the combination treatment induced cancer regression and reduced cancer cell growth compared to hormone therapy alone demonstrating that further investigation into this combination is warranted.

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