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The Relationship Between Cancer and Obesity

1. Strength of the Relationship

Epidemiological evidence: Obesity is linked to an increased risk of at least 13 types of cancer, including breast (postmenopausal), colorectal, endometrial, pancreatic, kidney, liver, gallbladder, and esophageal cancers.

Magnitude of risk: For some cancers, obesity can raise risk by 20–50% or more. For example:

- Endometrial cancer risk is 200 to 400 percent higher in obese women.
- Postmenopausal breast cancer risk increases by about 20–40%.
- Colorectal cancer risk rises by around 30%.

Global burden: The International Agency for Research on Cancer (IARC) estimates that excess body weight accounts for about 3–8% of all cancers worldwide, but in countries with higher obesity rates (like the U.S.), the percentage can be over 15%.

2. Biological Mechanisms

Obesity promotes cancer through several pathways:

- Hormonal changes: Higher levels of estrogen, insulin, and insulin-like growth factors can stimulate cancer cell growth.
- Chronic inflammation: Excess fat tissue creates a pro-inflammatory environment that damages DNA and promotes tumor growth.
- Immune function impairment: Obesity may reduce the body's ability to detect and destroy abnormal cells. Adipokines and growth factors: Fat cells produce hormones and signaling molecules that can fuel tumor development.

3. Prognosis and Outcomes

Obesity doesn't just raise cancer risk—it also worsens outcomes:

- Obese cancer patients often have poorer survival rates.
- Obesity can complicate treatment responses, increase surgical risk, and alter drug metabolism.
- Weight gain during or after treatment can further impact recurrence risk, especially for breast and colon cancers.

4. Prevention and Public Health Impact

Maintaining a healthy body composition significantly reduces cancer risk. Obesity prevention is seen as a major strategy for reducing future cancer incidence worldwide.

Summary

The link between obesity and cancer is strong and multifaceted. It increases the risk of multiple cancers, worsens prognosis, and is driven by hormonal, metabolic, and inflammatory mechanisms. Maintaining an optimal body composition is one of the most impactful ways to lower cancer risk.