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# Vitamin B3 Supplements May Aid Cancer Cell Survival, Warn Scientists

## Description

A recent study has raised significant concerns regarding the use of widely consumed NAD+ supplements in the United States, suggesting that these compounds, often taken to enhance energy levels and promote healthy aging, may adversely affect cancer treatment outcomes. Millions of Americans routinely use supplements such as nicotinamide mononucleotide (NMN) and nicotinamide riboside (NR) in the hope of increasing NAD+ levels, a molecule vital for metabolism and cellular repair.

Interestingly, some cancer patients have started using these supplements to mitigate the harsh effects of chemotherapy. However, emerging evidence indicates this approach might prove counterproductive. Research from Case Western Reserve University's School of Medicine, published in *Cancer Letters*, found that vitamin B3 derivatives could actually aid pancreatic cancer cells in surviving treatment. This is alarming, as pancreatic cancer has a five-year survival rate of just 13%, making any factor influencing treatment crucial.

NAD+ is essential for the function of both healthy and cancerous cells. While boosting NAD+ levels may benefit healthy individuals, the study demonstrates that cancer cells could exploit this increased supply to enhance their own energy production and resist treatment-induced cell death. In laboratory and mouse studies, particularly NMN demonstrated the capacity to protect pancreatic cancer cells against three common chemotherapy drugs.

The researchers outlined three primary mechanisms by which these supplements could impede treatment: they enhance cancer cell energy, reduce oxidative stress, and limit both DNA damage and cell death, all of which are vital for chemotherapy efficacy.

Jordan Winter, the study's lead researcher, highlighted the need for caution regarding NAD+-boosting supplements in cancer patients undergoing chemotherapy. While the study does not suggest these supplements are harmful to healthy individuals, their potential dangers for active cancer patients may be considerable. Consequently, the team advocates for routine assessments of supplement usage in this demographic and recommends further clinical studies to investigate the interactions between NAD+ supplements and cancer therapies. In the meantime, Winter advises patients to consult their oncologists about any supplements they are consuming.

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## Vocabulary List:

1. **supplements** //ˈsʌpləmənts// (noun): extra vitamins or nutrients people often take
2. **chemotherapy** //,ki:məʊˈθerəpi// (noun): treatment using strong drugs to kill cancer
3. **mitigate** //ˈmɪtɪgeɪt// (verb): make something less bad or severe
4. **counterproductive** //,kaʊntəprəˈdʌktɪv// (adjective): causing the opposite of the intended result



5. **metabolism** //mə'tæbəlɪzəm// (noun): how the body uses food for energy
6. **efficacy** //ˈɛfɪkəsi// (noun): how well something works to produce results

## Comprehension Questions

### Multiple Choice

1. What is the main concern raised by the recent study regarding NAD+ supplements?  
Option: They enhance energy levels.  
Option: They may adversely affect cancer treatment outcomes.  
Option: They are completely safe for cancer patients.  
Option: They promote healthy aging.
2. Which two NAD+ supplements are commonly used by Americans?  
Option: Nicotinamide adenine dinucleotide and vitamin B3  
Option: Nicotinamide mononucleotide and nicotinamide riboside  
Option: Nicotinamide and riboflavin  
Option: Nicotinamide mononucleotide and vitamin C
3. What journal published the research from Case Western Reserve University?  
Option: Journal of Oncology  
Option: Cancer Research  
Option: Cancer Letters  
Option: Medical News Today
4. What is the five-year survival rate of pancreatic cancer?  
Option: 40%  
Option: 25%  
Option: 13%  
Option: 50%
5. According to the study, boosting NAD+ levels may benefit which group of people?  
Option: Only cancer patients  
Option: Only healthy individuals  
Option: Both healthy individuals and cancer patients  
Option: Neither healthy individuals nor cancer patients



6. Which chemotherapy drugs were mentioned in the laboratory studies regarding NMN?

Option: Three common chemotherapy drugs

Option: Herceptin

Option: Imatinib

Option: Doxorubicin

### True-False

7. The study suggests that NAD+ supplements are beneficial for cancer patients undergoing chemotherapy.

8. NAD+ is vital for metabolism and cellular repair.

9. Jordan Winter is the study's lead researcher.

10. Pancreatic cancer has a high five-year survival rate of 50%.

11. The study recommends further clinical studies to investigate the interactions between NAD+ supplements and cancer therapies.

12. NAD+ supplements are considered completely safe for patients with active cancer according to this study.

### Gap-Fill

13. NAD+ is essential for the function of both healthy and \_\_\_\_\_ cells.

14. The study found that NAD+ supplements could help cancer cells resist \_\_\_\_\_ induced cell death.

15. Research indicated that vitamin B3 derivatives may aid pancreatic cancer cells in \_\_\_\_\_ treatment.

16. Jordan Winter highlighted the need for caution regarding NAD+-boosting supplements in cancer patients during \_\_\_\_\_.



17. Researchers outlined three primary mechanisms by which these supplements could impede

\_\_\_\_\_.

18. The study advocates for routine assessments of supplement usage in cancer patients and recommends

further \_\_\_\_\_ studies.

## Answer

**Multiple Choice:** 1. They may adversely affect cancer treatment outcomes. 2. Nicotinamide mononucleotide and nicotinamide riboside 3. Cancer Letters 4. 13% 5. Only healthy individuals 6. Three common chemotherapy drugs

**True-False:** 7. False 8. True 9. True 10. False 11. True 12. False

**Gap-Fill:** 13. cancerous 14. treatment 15. surviving 16. chemotherapy 18. clinical

## CATEGORY

1. Health - LEVEL6

## POST TAG

1. cancer research
2. ESL learning
3. esl news
4. Level 6
5. popular supplements
6. vitamin B3

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