



Fiber May Boost Weight Loss Like Ozempic, Study Finds

Description

The burgeoning research surrounding the gut microbiome has instigated a 'revolution' in nutritional science, leading to the contemporary perception of dietary fiber as the "new protein." In recent years, fiber supplementation has proliferated in food products, purportedly to nourish our gastrointestinal flora and enhance overall health.

Contrary to this trend, a novel study utilizing murine subjects indicates that not all fiber supplements confer equal benefits. A particular soluble fiber, [beta-glucan](#), predominantly sourced from oats and barley, has demonstrated efficacy in regulating blood glucose levels and promoting weight loss in mice subjected to a high-fat diet.

Investigators from the University of Arizona and the University of Vienna posited that beta-glucan was the sole fiber they examined that significantly reduced adiposity and body weight within an 18-week timeframe. The other fiber types tested—including wheat dextrin, pectin, resistant starch, and cellulose—failed to yield similar outcomes, despite notable alterations in the microbiome composition of the experimental group compared to their fiber-free counterparts.

"Fiber is undeniably vital and advantageous; however, its variety presents a challenge," articulated biomedical scientist Frank Duca from UA. He emphasized the need to delineate which fiber forms are optimally beneficial for weight management and glycemic control, aiming to provide insights for consumers and the agricultural sector alike.

Fiber serves as the principal energy source for intestinal bacteria. Alarming, fewer than 5 percent of individuals in the United States adhere to the recommended 25-30 grams (0.9-1 ounce) of daily fiber intake. This discrepancy has catalyzed a rise in the market for fiber supplementation, including 'invisible fibers' integrated into various food products.

The complexities and variabilities inherent in fiber types necessitate prudent selection. While some fibers, such as oat beta-glucans, are readily soluble and easily fermented by gut microbiota, others, like cellulose and resistant starch, exhibit lesser solubility and serve primarily to enhance stool formation.

Overall, while the implications of this research warrant further exploration before extrapolating to human subjects, the findings advocate for a nuanced understanding of dietary fibers, suggesting that certain forms may be more advantageous for weight management and metabolic regulation than their counterparts. The study was published in the [Journal of Nutrition](#).

An earlier version of this article was published in July 2024.



Vocabulary List:

1. **Burgeoning** /'bɜːrdʒənɪŋ/ (adjective): Beginning to grow or increase rapidly; flourishing.
2. **Instigated** /'ɪnstɪɡeɪtɪd/ (verb): Brought about or initiated an event or action.
3. **Adiposity** /,æd.ɪ'pɒs.ɪ.ti/ (noun): The condition of being severely overweight or obese.
4. **Efficacy** /'efɪkəsi/ (noun): The ability to produce a desired or intended result.
5. **Glycemic** /glai'si:mɪk/ (adjective): Relating to the concentration of glucose in the blood.
6. **Nuanced** /'njuːɑːnst/ (adjective): Characterized by subtle differences or distinctions.

Comprehension Questions

Multiple Choice

1. What term refers to the contemporary perception of dietary fiber as the "new protein"?
Option: A. Macronutrient shift
Option: B. Fiber revolution
Option: C. Nutritional evolution
Option: D. Gut microbiome boom
2. Which soluble fiber, predominantly sourced from oats and barley, showed efficacy in regulating blood glucose levels and promoting weight loss in murine subjects?
Option: A. Wheat dextrin
Option: B. Resistant starch
Option: C. Beta-glucan
Option: D. Pectin
3. What percentage of individuals in the United States adhere to the recommended daily fiber intake of 25-30 grams?
Option: A. Less than 10%
Option: B. Around 20%
Option: C. Approximately 40%
Option: D. Fewer than 5%
4. Which fiber type serves primarily to enhance stool formation?
Option: A. Beta-glucan



- Option: B. Resistant starch
- Option: C. Pectin
- Option: D. Cellulose

5. Where was the study regarding the benefits of beta-glucan and other fiber types conducted?

- Option: A. University of California
- Option: B. University of Arizona and University of Vienna
- Option: C. Harvard University
- Option: D. Oxford University

6. Which type of fiber was found to significantly reduce adiposity and body weight in the study?

- Option: A. Pectin
- Option: B. Wheat dextrin
- Option: C. Resistant starch
- Option: D. Beta-glucan

True-False

- 7. Dietary fiber is considered the "new protein" in nutritional science.
- 8. The study confirmed that all fiber supplements tested conferred equal benefits.
- 9. Frank Duca emphasized the need to identify which fiber forms are optimally beneficial.
- 10. Cellulose and resistant starch are readily soluble and easily fermented by gut microbiota.
- 11. Less than 10% of individuals in the United States meet the recommended daily fiber intake.
- 12. Certain forms of dietary fibers may be more advantageous for weight management than their counterparts.

Gap-Fill

- 13. According to the text, fewer than _____ percent of individuals in the United States adhere to the recommended daily fiber intake of 25-30 grams.
- 14. The study examined the effects of different fiber types on weight management and metabolic regulation over an 18-week timeframe, with beta-glucan being the sole fiber that significantly reduced



- adiposity and body weight from the University of Arizona and University of _____ .
15. Biomedical scientist Frank Duca from UA underscored the need to determine which fiber forms are optimally beneficial for weight management and _____ control.
16. The complexities and variabilities inherent in fiber types necessitate prudent _____ for consumers.
17. The study findings suggest that certain forms of dietary fibers may be more advantageous for weight management and metabolic regulation than _____ counterparts.
18. The aim is to provide insights for consumers and the agricultural sector to better understand the benefits of dietary _____ .

Answer

Multiple Choice: 1. B. Fiber revolution 2. C. Beta-glucan 3. D. Fewer than 5% 4. D. Cellulose 5. B. University of Arizona and University of Vienna 6. D. Beta-glucan

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

Gap-Fill: 13. 5 14. Vienna 15. glycemic 16. selection 17. their 18. fibers

Vocabulary quizzes

Multiple Choice (Select the Correct answer for each question.)

1. What is the meaning of "elucidated"?
- Option: a. Explained or clarified
 - Option: b. Accelerated or enlarged
 - Option: c. Discarded or removed
 - Option: d. Composed or created
2. Which term refers to the likelihood of something happening?
- Option: a. Probabilities
 - Option: b. Speculative
 - Option: c. Correlations



Option: d. Aptitude

3. What does the term "impractical" mean?

Option: a. Very practical

Option: b. Not feasible or sensible

Option: c. Extremely useful

Option: d. Unintended outcome

4. Which term is related to the mental processes of perception and understanding?

Option: a. Cognitive

Option: b. Aptitude

Option: c. Engagements

Option: d. Genesis

5. What does "colossal" mean?

Option: a. Tiny

Option: b. Magnificent

Option: c. Gigantic

Option: d. Delicate

6. Which word means remarkably or impressively great in extent size or degree?

Option: a. Impractical

Option: b. Prodigious

Option: c. Parallel

Option: d. Nuanced

7. What does "efficacy" mean?

Option: a. Strength

Option: b. Joy

Option: c. Effectiveness

Option: d. Depletion

8. Which term is related to the measurement of the amount of sugar in blood?

Option: a. Glycemic

Option: b. Aptitude

Option: c. Erosion

Option: d. Instigated

9. What does "burgeoning" mean?



- Option: a. Shrinking
- Option: b. Expanding or growing rapidly
- Option: c. Limited
- Option: d. Outgoing or friendly

10. What are "obstructions"?

- Option: a. Unpredictable
- Option: b. Barriers or obstacles
- Option: c. Innovations
- Option: d. Adaptations

Gap-Fill (Fill in the blanks with the correct word from the vocabulary list.)

11. Good leaders are not only assertive but also _____ ensuring effective information flow within the team.

12. Over time the continuous water flow caused _____ of the ancient stone carvings.

13. The scientist discussed the _____ of the universe in his groundbreaking research.

14. Volcanic eruptions can release ash lava and other volcanic _____ into the atmosphere.

15. The new regulations have significant _____ for small businesses in the region.

16. The controversial decision _____ a heated debate among the board members.

17. A sedentary lifestyle and excessive calorie intake can lead to increased _____ or fat accumulation.

18. The laboratory studies focus on the _____ effects of various environmental pollutants.

19. The doctor specializes in treating disorders of the brain and nerves known as _____ conditions.



20. The aroma of fresh coffee began to _____ the entire house.

Matching Sentences (Match each definition to the correct word from the vocabulary list.)

21. In the artwork the artist used of light and dark colors to create a sense of balance.
22. Investing in cryptocurrencies is considered a venture due to the high volatility in the market.
23. The professor drew a between the human brain and a computer to explain complex cognitive processes.
24. The old mansion was eerie and of any signs of life or habitation.
25. The company announced new business with international partners to expand its market presence.
26. The exhibition explored the of modern art movements in the context of historical events.
27. Studies have shown that marine life ingests leading to ecological concerns about ocean pollution.
28. The researchers studied the development of infants to understand early learning processes.
29. The tech industry in the region is experiencing a growth attracting new talent and investments.
30. The political unrest was by economic disparities and social inequality.

Answer

Multiple Choice: 1. a. Explained or clarified 2. a. Probabilities 3. b. Not feasible or sensible 4. a. Cognitive 5. c. Gigantic 6. b. Prodigious 7. c. Effectiveness 8. a. Glycemic 9. b. Expanding or growing rapidly 10. b. Barriers or obstacles

Gap-Fill: 11. communicative 12. erosion 13. genesis 14. ejecta 15. implications 16. instigated 17. adiposity 18. toxicological 19. neurological 20. permeate

Matching sentence: 1. juxtaposition 2. speculative 3. parallel 4. devoid 5. engagements 6. genesis 7. microplastics 8. cognitive 9. burgeoning 10. instigated

CATEGORY

- 1. Health - LEVEL6

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