



Molecule Discovery May Aid Safer Weight Loss

Description

Scientists in the US have found a compound that helps with weight loss without harming bones, which is a common problem with strict diets.

Research shows that lowering certain amino acids, which are building blocks of proteins, can help animals lose fat quickly and live longer. However, this often results in weaker bones. A recent study suggests this might not always happen.

The study, published in the journal *Aging*, was led by Naidu B. Ommi. It looks at whether weight loss and bone damage can be separate. The team studied cysteine, an amino acid that contains sulfur, and glutathione, a molecule important for cell protection and metabolism.

A special diet called SAAR (Sulfur Amino Acid Restriction) reduces amino acids like methionine and cysteine. This diet makes mice lose fat even when eating high-fat food and is linked to a longer life. However, it also weakens bones, reducing their density and increasing fat in the bone marrow.

The researchers tested if the problem was due to cysteine. They used different diets on obese mice, including some with supplements like NAC that increase cysteine and glutathione levels or BSO, which lowers glutathione.

They found that while mice on the SAAR diet lost fat, they also suffered bone damage. Adding NAC helped, which showed that cysteine and glutathione loss caused the damage. BSO helped mice lose weight without affecting bones, suggesting it could be a safer option.

These findings open the possibility of losing weight without damaging bones. However, more research is needed to see how BSO works and if it's safe for long-term use.

Vocabulary List:

1. **compound** //ˈkɑmpaʊnd// (noun): a substance made of two or more parts
2. **metabolism** //məˈtæbəlɪzəm// (noun): the chemical processes in the body
3. **density** //ˈdensɪti// (noun): how much matter is in something
4. **supplement** //ˈsʌplɪmənt// (noun): something added to improve health or diet
5. **obese** //oʊˈbiːs// (adjective): very overweight in a way that is unhealthy
6. **restriction** //rɪˈstrɪkʃən// (noun): a rule or limit on what is allowed



Comprehension Questions

Multiple Choice

1. What compound helps with weight loss without harming bones?

- Option: Methionine
- Option: Cysteine
- Option: Glutathione
- Option: BSO

2. Who led the recent study published in the journal Aging?

- Option: Naidu B. Ommi
- Option: Research Team A
- Option: Dr. Smith
- Option: John Doe

3. What does the SAAR diet restrict?

- Option: Carbohydrates
- Option: Sulfur Amino Acids
- Option: Fats
- Option: Proteins

4. Which amino acid is mentioned as containing sulfur?

- Option: Arginine
- Option: Cysteine
- Option: Tryptophan
- Option: Tyrosine

5. What was a major result of the SAAR diet on mice?

- Option: Increased fat in the body
- Option: Weight loss with bone damage
- Option: Increased longevity
- Option: Enhanced muscle density

6. What did the researchers find about BSO?

- Option: It harms bones



- Option: It helps lose weight safely
- Option: It increases fat
- Option: It is ineffective

True-False

- 7. The SAAR diet only makes mice lose fat without any side effects.
- 8. Cysteine is linked to bone damage when amino acids are lowered.
- 9. BSO increases glutathione levels in the body.
- 10. The study suggests weight loss and bone damage can be separate.
- 11. Glutathione is a molecule important for cell protection.
- 12. The research indicates that lower amino acids always result in stronger bones.

Gap-Fill

- 13. A special diet called SAAR reduces amino acids like methionine and _____.
- 14. The journal where the study was published is named _____.
- 15. The researchers tested diets on _____ mice to examine the effects.
- 16. Adding NAC helped because it showed cysteine and _____ loss caused the damage.
- 17. The findings suggest the possibility of losing weight without damaging _____.
- 18. More research is needed to determine how _____ works for weight loss.

Answer

- Multiple Choice:** 1. BSO 2. Naidu B. Omni 3. Sulfur Amino Acids 4. Cysteine 5. Weight loss with bone damage
6. It helps lose weight safely
- True-False:** 7. False 8. True 9. False 10. True 11. True 12. False
- Gap-Fill:** 13. cysteine 14. Aging 15. obese 16. glutathione 17. bones 18. BSO



Vocabulary quizzes

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

1. What does the term 'metabolism' refer to?
Option: The process of food ingestion
Option: The chemical reactions that occur within a living organism
Option: The physical structure of a cell
Option: The movement of nutrients within the body
2. What classification is given to an individual with a body mass index (BMI) of 30 or higher?
Option: Overweight
Option: Obese
Option: Normal weight
Option: Underweight
3. What hormone is often referred to as the 'stress hormone'?
Option: Insulin
Option: Cortisol
Option: Adrenaline
Option: Thyroxine
4. Which process involves killing germs and bacteria on surfaces?
Option: Sanitize
Option: Disinfect
Option: Sterilize
Option: Clean
5. What is the most serious type of skin cancer?
Option: Basal cell carcinoma
Option: Squamous cell carcinoma
Option: Melanoma
Option: Carcinoma in situ
6. What term describes the condition of being subjected to something harmful?
Option: Isolation
Option: Exposure
Option: Seclusion
Option: Protection
7. Which type of agent is used to inhibit the growth of microbes?



- Option: Antiseptic
- Option: Antimicrobial
- Option: Antibiotic
- Option: Antiviral

8. What term is used for something that has been made impure or unclean by contact with a harmful substance?

- Option: Pure
- Option: Contaminated
- Option: Filtered
- Option: Sterilized

9. What is the ability of an organism to continue living called?

- Option: Reproduction
- Option: Survival
- Option: Metabolism
- Option: Adaptation

10. What do we call the act of taking in food and drink?

- Option: Digestion
- Option: Consume
- Option: Ingestion
- Option: Absorption

ESL-NEWS.COM

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

- 11. The _____ of an object is its mass per unit volume.
- 12. Dietary _____ can help in weight management.
- 13. Prolonged _____ to UV radiation can increase the risk of skin cancer.
- 14. Vaccination can help prevent the _____ of infectious diseases.
- 15. Regular check-ups can help _____ potential health issues.
- 16. He felt _____ after listening to the constant noise.
- 17. Meeting client _____ is crucial for business success.
- 18. Poor communication can _____ team effectiveness.



19. A nutrient _____ can lead to various health problems.
20. Some materials can _____ the properties of natural substances.

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

21. Antimicrobial agents are used to combat infections by inhibiting the growth of bacteria.
22. Carcinoma is a type of cancer that originates in epithelial tissue.
23. Cortisol helps to regulate metabolism and the body's response to stress.
24. Infrasound refers to sound waves that are below the frequency range of human hearing.
25. Contaminated water can pose serious health risks to those who consume it.
26. The density of a substance determines whether it will float or sink in water.
27. Obese individuals are at a higher risk for developing chronic health conditions.
28. The lack of information during the crisis was unsettling for the public.
29. The survival of endangered species relies heavily on conservation efforts.
30. Many people fail to properly consume the recommended daily intake of fruits and vegetables.

Answer

Multiple Choice: 1. The chemical reactions that occur within a living organism 2. Obese 3. Cortisol 4. Disinfect 5. Melanoma 6. Exposure 7. Antimicrobial 8. Contaminated 9. Survival 10. Consume

Gap-Fill: 11. density 12. restriction 13. exposure 14. spread 15. prevent 16. irritated 17. expectations 18. hinder 19. deficit 20. mimic

Matching sentence: 1. antimicrobial 2. carcinoma 3. cortisol 4. infrasound 5. contaminated 6. density 7. obese 8. unsettling 9. survival 10. consume

CATEGORY

1. Health - LEVEL3

POST TAG

1. B1



2. ESL learning
3. esl news
4. L3
5. Level 3
6. simple molecule
7. weight loss

Tags

1. B1
2. ESL learning
3. esl news
4. L3
5. Level 3
6. simple molecule
7. weight loss

Date Created

2026/05/05

Author

aimeeyoung99

ESL-NEWS.COM