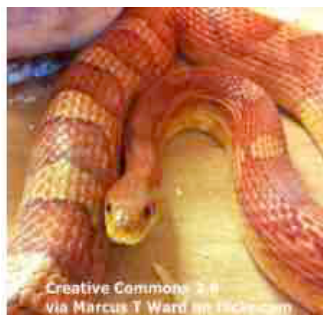


Snake 'pee crystals' could help treat kidney stones

27th October 2025



The natural world contains a yet-to-be-discovered, untapped bounty of remedies to help doctors. The latest discovery comes from researchers from Georgetown University and other research institutions in the USA. They believe their

exploration of how reptiles excrete waste could help treat human ailments. The scientists analysed the tiny "pee crystals" that reptiles use in place of urine to excrete waste. The crystals are a solid form of uric acid, which is a potentially harmful by-product created when the body breaks down nitrogen in food. Too much nitrogen in our bodies can lead to health problems like gout and kidney stones. Our bodies flush most of the uric acid waste away when we pass water.

The study is published in the Journal of the American Chemical Society. A team of organic chemists and herpetologists (scientists who study reptiles and amphibians) examined the excreta and waste elimination processes of more than 20 reptile species. They focused their attention on the excess nitrogen that crystallised into tiny microcrystals. Researcher Dr Jennifer Swift believes the team's findings could help us better understand and treat uric acid-related problems like gout and kidney stones. She said: "This research was really inspired by a desire to understand the ways reptiles are able to excrete this material safely, in the hope it might inspire new approaches to disease prevention and treatment."

Sources: gizmodo.com / popsci.com / iflscience.com

Writing

Governments need to spend money of disease prevention and not weapons. Discuss.

Chat

Talk about these words from the article.

the natural world / bounty / remedies / reptiles / by-product / nitrogen / acid / water / study / chemists / amphibians / microcrystals / kidney / desire / disease prevention

True / False

- 1) The article says most natural medicinal remedies have been discovered. T / F
- 2) Reptiles largely excrete crystals rather than liquid urine. T / F
- 3) The "pee crystals" largely consist of amino and citric acids. T / F
- 4) Doctors use nitrogen injections to treat problems like kidney stones. T / F
- 5) A herpetologist is someone who studies excreta. T / F
- 6) Scientists looked at the excretion processes of over 20 reptile species. T / F
- 7) A researcher said her research could treat a problem called gout. T / F
- 8) The researcher said she wants humans to excrete waste safely. T / F

Synonym Match

(The words in **bold** are from the news article.)

- | | |
|-----------------------|-----------------|
| 1. untapped | a. investigated |
| 2. remedies | b. illnesses |
| 3. ailments | c. motivated |
| 4. excrete | d. removal |
| 5. flush | e. treatments |
| 6. examined | f. belief |
| 7. elimination | g. wash out |
| 8. excess | h. untouched |
| 9. inspired | i. surplus |
| 10. hope | j. pass |

Discussion – Student A

- a) What do you know about snakes?
- b) Are natural remedies better than those from drug companies?
- c) What can we learn from snakes?
- d) What animals provide us with treatments and medicines?
- e) How interesting would it be to study snake 'pee crystals'?
- f) How many of our health problems are because of poor diet?
- g) What do you know about gout?
- h) What are your favourite reptiles and amphibians?

Phrase Match

1. a yet-to-be-discovered, untapped
 2. help treat human
 3. The crystals are a solid
 4. a potentially harmful by-
 5. when we pass
 6. A team of organic chemists
 7. scientists who study reptiles and
 8. examined the excreta and waste elimination
 9. They focused their attention
 10. new approaches to disease prevention
- a. product
 - b. water
 - c. processes
 - d. and treatment
 - e. amphibians
 - f. bounty of remedies
 - g. form of uric acid
 - h. on the excess nitrogen
 - i. ailments
 - j. and herpetologists

Discussion – Student B

- a) What do you think about what you read?
- b) What do you think of snakes?
- c) Would you like to read the research in the journal?
- d) What do you know about amphibians?
- e) What would you like to do research on?
- f) What do you know about kidney stones?
- g) Why are people afraid of snakes?
- h) What questions would you like to ask the researchers?

Spelling

1. untapped ynoutb
2. sreedime to help doctors
3. how reptiles reeexct waste
4. help treat human aeislntm
5. when the body breaks down ntogeri
6. problems like gout and knydie stones
7. A team of organic smctihse
8. scientists who study reptiles and saihpamibn
9. waste animientiol
10. more than 20 reptile iecpsse
11. This research was really snerdpii
12. disease tpreveinnoe and treatment

Answers – Synonym Match

1. h	2. e	3. b	4. j	5. g
6. a	7. d	8. i	9. c	10. f

Comprehension Questions

Listen to / read the news article. Answer these questions.
(Answers are on p. 27 of the 27-page PDF.)

1.	What contains a bounty of untapped remedies?
2.	Which research institution was mentioned in the article?
3.	What do the "pee crystals" replace in snakes' waste elimination process?
4.	What does the article say about uric acid?
5.	What health problem can too much uric acid lead to besides gout?
6.	What do herpetologists study?
7.	How many different reptile species did the researchers look at?
8.	What does excess nitrogen turn into?
9.	What did a researcher say the findings could help us treat?
10.	What might the study inspire new approaches to?

Speaking – Reptiles

Rank these with your partner. Put the most interesting reptiles at the top. Change partners often and share your rankings.

- Komodo dragon
- Iguana
- Chameleon
- Python
- Cobra
- Crocodile
- Tortoise
- Sea turtle

Answers – True False

1	F	2	T	3	F	4	F	5	F	6	T	7	T	8	F
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Answers to Phrase Match and Spelling are in the text.