

Microplastics found in human heart for first time

14th August 2023



While many of us are aware of the environmental damage done by plastic, fewer people know about the threat from the ubiquity of microplastics. Scientists first found them in our bodies more than a decade ago. Worryingly, researchers have now

found them in the human heart. Scientists at the Beijing Anzhen Hospital in China collected cardiac tissue samples from 15 patients undergoing heart surgery. After analyzing the samples, they discovered tiny pieces of plastic, from a multitude of sources. They included a plastic commonly used as a shatter-proof alternative to glass, a polythene widely used in clothing and food containers, and a polyvinyl chloride used in construction.

The scientists reported finding, "tens to thousands of individual microplastic pieces in most tissue samples". Chemicals from microplastics are released into the body, potentially leading to allergic reactions, cancer, cell death, and chronic inflammation, among other complications. Scientists reckon the average person consumes around five grams of microplastics a week, or 52,000 particles a year. Microplastics are so prevalent that they make up 39 per cent of dust particles in our homes. Scientists say these tiny shards are near-impossible to remove from the body. They say it is becoming critical to limit the amount of plastic we breathe in, ingest, swallow or absorb.

Sources: dailymail.co.uk / people.com / iflscience.com

Writing

We need to stop using plastic immediately. Discuss.

Chat

Talk about these words from the article.

aware / environmental damage / threat / ubiquity / heart / tissue / plastic / clothing / scientist / allergic reaction / cancer / complication / dust / critical / breathe / swallow

True / False

- 1) The article says most of us know about the harm microplastics do. T / F
- 2) Microplastics were first found in our bodies in the 1970s. T / F
- 3) Scientists found microplastics in the hearts of heart surgery patients. T / F
- 4) Scientists found plastics from construction materials in a human heart. T / F
- 5) There were tens of thousands of microplastics in the heart tissue. T / F
- 6) Microplastics can cause allergic reactions. T / F
- 7) An average person gets 52,000 bits of microplastic a year in their body. T / F
- 8) It is relatively easy to remove microplastics from our bodies. T / F

Synonym Match

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

- | | |
|-------------------------|-------------------|
| 1. aware | a. eats or drinks |
| 2. ubiquity | b. heart |
| 3. cardiac | c. building |
| 4. alternative | d. problems |
| 5. construction | e. omnipresence |
| 6. individual | f. commonplace |
| 7. complications | g. substitute |
| 8. consumes | h. vital |
| 9. prevalent | i. single |
| 10. critical | j. conscious |

Discussion – Student A

- a) What damage do microplastics do?
- b) How can we reduce the amount of microplastics?
- c) What damage could microplastics do to our body?
- d) How can we live without plastic?
- e) How much plastic pollution do you see every day?
- f) Would you switch to alternatives to plastic?
- g) How do you feel about microplastics being in your body?
- h) What should governments do about microplastics?

Phrase Match

1. the environmental damage
 2. the threat from the ubiquity
 3. cardiac tissue
 4. a shatter-proof alternative
 5. polyvinyl chloride used
 6. allergic
 7. average person consumes
 8. dust
 9. these tiny shards are near-
 10. the amount of plastic we breathe in,
- a. impossible to remove
 - b. samples
 - c. in construction
 - d. reactions
 - e. ingest, swallow or absorb
 - f. done by plastic
 - g. particles
 - h. to glass
 - i. around five grams
 - j. of microplastics

Discussion – Student B

- a) What do you think about what you read?
- b) Would you move house to live somewhere with fewer microplastics?
- c) Do you suffer from any allergies?
- d) What do you think of your body consuming 52,000 bits of microplastic?
- e) Should we dust our homes more to remove microplastics?
- f) What will things be like in the future?
- g) What do you think of microplastics?
- h) What questions would you like to ask the scientists?

Spelling

1. the uqbtiyui of microplastics
2. aardcci tissue samples
3. from a eulttmudi of sources
4. a shatter-proof irnatlvetea to glass
5. widely used in clothing and food saronnteci
6. polyvinyl chloride used in coontuncstri
7. ellgrcia reactions
8. iccrnoh inflammation
9. Microplastics are so lepaventr
10. dust scletpair
11. becoming lirticca to limit the amount
12. plastic we breathe in, ingest, swallow or barobs

Answers – Synonym Match

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

Role Play

Role A – Plastic Bottles

You think plastic bottles are the most important things to recycle. Tell the others three reasons why. Tell them what problems there are with recycling their things. Also, tell the others which of these is the least important to recycle (and why): computers, clothes or cars.

Role B – Computers

You think computers are the most important things to recycle. Tell the others three reasons why. Tell them what problems there are with recycling their things. Also, tell the others which of these is the least important to recycle (and why): plastic bottles, clothes or cars.

Role C – Clothes

You think clothes are the most important things to recycle. Tell the others three reasons why. Tell them what problems there are with recycling their things. Also, tell the others which of these is the least important to recycle (and why): computers, plastic bottles or cars.

Role D – Cars

You think cars are the most important things to recycle. Tell the others three reasons why. Tell them what problems there are with recycling their things. Also, tell the others which of these is the least important to recycle (and why): computers, clothes or plastic bottles.

Speaking – Recycle

Rank these with your partner. Put the most important things to recycle at the top. Change partners often and share your rankings.

- cars
- clothes
- mobile phones
- cups and plates
- plastic bottles
- books
- computers
- furniture

Answers – True False

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