

Scientists discover why shaving blunts razors

9th August, 2020



Scientists from MIT have discovered why razor blades become blunt after repeated use. They did research into why razor blades lose their sharpness. Razor blades are 50 times harder than the hairs they cut. Even though human hair

is 50 times softer than the metal of a razor blade, the hair damages the edge of the blade. Razor blades are made from stainless steel. They are usually coated with tougher materials like hardened carbon. The MIT scientists said that each time a blade cuts a hair, the hair causes tiny amounts of damage. A blade usually cuts thousands of hairs in one shaving session. This means the life of a razor blade is limited and will need to be replaced regularly.

The researchers used powerful microscopes to find out how hair damages a razor blade. They got a close-up view of what happens during a shave when the blade cuts a hair. The blade gets damaged in a variety of ways. One way is that a single hair creates a tiny chip on the edge of a blade. This chip becomes bigger as it cuts more hair. After more shaving, the blade loses its ability to cut cleanly and becomes blunt. A researcher said: "We are metallurgists and want to...make better metals. In this case, it was intriguing that if you cut something very soft, like human hair, with something very hard, like steel, the hard material would fail." He said his team is "aiming to solve an important engineering problem".

Sources: mit.edu / sciencemag.org / newscientist.com

Writing

Shaving is a total waste of time. Discuss.

Chat

Talk about these words from the article.

scientists / razor blades / research / human / hair / steel / carbon / shaving / damage / microscopes / close-up / variety / chip / edge / metallurgists / intriguing / engineering

True / False

- a) The scientists who did this research are from a school called TIM. T / F
- b) Razor blades are 500 times harder than human hair. T / F
- c) Stainless steel razor blades are toughened with carbon. T / F
- d) The article said a razor blade can cut thousands of hairs when shaving. T / F
- e) Scientists used a microscope to look at hairs being cut. T / F
- f) Human hairs cause tiny chips on the edge of razor blades. T / F
- g) A scientist said he wanted to make softer metals. T / F
- h) The scientist said blunt razor blades were an engineering problem. T / F

Synonym Match

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

- | | |
|----------------------|----------------|
| 1. discovered | a. harms |
| 2. repeated | b. work out |
| 3. damages | c. changed |
| 4. tiny | d. continual |
| 5. replaced | e. interesting |
| 6. happens | f. puzzle |
| 7. single | g. found out |
| 8. intriguing | h. solitary |
| 9. solve | i. very small |
| 10. problem | j. occurs |

Discussion – Student A

- a) What do you think about what you read?
- b) Is it better to shave with soap, gel or foam?
- c) What would the scientists see through their powerful microscopes?
- d) What would you like a close-up view of?
- e) Should we be able to sharpen razor blades and reuse them?
- f) What problems are there with shaving?
- g) What is a close shave?
- h) What questions would you like to ask the researchers?

Phrase Match

1. discovered why razor blades become blunt
 2. research into why razor blades lose their
 3. Razor blades are made from
 4. coated with tougher materials
 5. This means the life of a razor blade
 6. The researchers used powerful
 7. They got a close-up
 8. the blade loses its ability
 9. if you cut something
 10. solve an important
- a. like hardened carbon
 - b. stainless steel
 - c. very soft
 - d. view of what happens
 - e. to cut cleanly
 - f. after repeated use
 - g. microscopes
 - h. engineering problem
 - i. is limited
 - j. sharpness

Discussion – Student B

- a) What do you think of shaving?
- b) What do you think of razors?
- c) Would it be better if we all stopped shaving?
- d) Why do people shave?
- e) Why do razor blades become blunt?
- f) Should scientists make better razor blades?
- g) What do you think of hair?
- h) How important is research into razor-blade sharpness?

Spelling

1. razor blades lose their ehpasrsns
2. blades are made from aiesnlst steel
3. coated with tougher msiartale like hardened carbon
4. in one shaving ssoiens
5. the life of a razor blade is itmidle
6. need to be replaced ryeurglal
7. The researchers used powerful scocmpoersi
8. damaged in a erivtya of ways
9. a tiny chip on the geed of a blade
10. it was tgigiunrin
11. very soft, like mhanu hair
12. lsoev an important engineering problem

Answers – Synonym Match

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

Role Play

Role A – Shaving

You think shaving is the most enjoyable activity. Tell the others three reasons why. Tell them what is wrong with their activities. Also, tell the others which is the worst of these (and why): brushing your teeth, cutting your nails or washing your hair.

Role B – Brushing Your Teeth

You think brushing your teeth is the most enjoyable activity. Tell the others three reasons why. Tell them what is wrong with their activities. Also, tell the others which is the worst of these (and why): shaving, cutting your nails or washing your hair.

Role C – Cutting Your Nails

You think cutting your nails is the most enjoyable activity. Tell the others three reasons why. Tell them what is wrong with their activities. Also, tell the others which is the worst of these (and why): brushing your teeth, shaving or washing your hair.

Role D – Washing Your Hair

You think washing your hair is the most enjoyable activity. Tell the others three reasons why. Tell them what is wrong with their activities. Also, tell the others which is the worst of these (and why): brushing your teeth, cutting your nails or shaving.

Speaking – Daily Hygiene

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

- Shaving
- Bathing
- Washing your hair
- Brushing your teeth
- Brushing your hair
- Cutting your nails
- Cutting your hair
- Washing your face

Answers – True False

a	F	b	F	c	T	d	T	e	T	f	T	g	F	h	T
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Answers to Phrase Match and Spelling are in the text.