



# Scientists Uncover a New Purpose of Blinking Previously Unknown

## Description

Researchers from the University of Rochester have uncovered an **intriguing** new role for our involuntary blinking. Beyond keeping the eyes lubricated, blinking also helps our brains process visual information more effectively, according to the study published in the Proceedings of the National Academy of Sciences.

Blinking briefly obscures our vision yet it occurs frequently - humans spend 3 to 8 percent of their waking hours with their eyes closed due to blinking. Researchers Bin Yang, Janis Intoy, and Michele Rucci **hypothesized** that blinking might influence visual processing in the brain and undertook a study to explore this **phenomenon**.

Using advanced eye-tracking technology in a controlled laboratory environment, their study involved twelve participants viewing grating patterns on a high-resolution monitor. Their task was to identify whether these patterns were tilted clockwise or counterclockwise. Blinking times were controlled and precisely monitored during the experiment.

Blinking during the presentation of these patterns led to significant improvements in the participants' ability to correctly identify the grating's orientation when compared to blinking before their appearance. This enhancement was due to the abrupt changes in light intensity or **luminance** caused by blinking, which may help reset the visual information entering the eye.

This revelation that **luminance** changes, rather than the physical act of blinking itself, enhance visual processing suggests that our eyes use these brief interruptions to improve visual **acuity**. Bin Yang affirms, "Blinks improve — rather than disrupt — visual processing, amply compensating for the loss in stimulus exposure."

This study shines a new light on the important role blinks play in our visual perception beyond mere lubrication of the eyes.

## Vocabulary List:

1. **Intriguing** /?n?tri????/ (adjective): Arousing one's interest or curiosity.
2. **Phenomenon** /f??n?m?n?n/ (noun): A fact or situation that is observed to exist or happen.
3. **Hypothesized** /ha??p????sa?zd/ (verb): Formed a theory or supposition about something.
4. **Luminance** /?lu?m?n?ns/ (noun): The intensity of light emitted from a surface per unit area.
5. **Acuity** /??kju??ti/ (noun): Sharpness or keenness of thought, vision, or hearing.

## Vocabulary List:

1. **Intriguing** /ɪn'trɪgʊɪŋ/ (adjective): Arousing one's interest or curiosity.
2. **Phenomenon** /fə'nomɪnən/ (noun): A fact or situation that is observed to exist or happen.
3. **Hypothesized** /haɪ'pɒθɪsaɪzd/ (verb): Formed a theory or supposition about something.
4. **Luminance** /'lu:mɪnəns/ (noun): The intensity of light emitted from a surface per unit area.
5. **Acuity** /ə'kjy:ti/ (noun): Sharpness or keenness of thought vision or hearing.
6. **Compensating** /'kɒmpənseɪtɪŋ/ (verb): Making up for loss or deficiency.

## Comprehension Questions

### Multiple Choice

1. What is the primary function of blinking according to the study?  
Option: To lubricate the eyes  
Option: To enhance visual processing  
Option: To provide rest for the eyes  
Option: To protect the eyes from light intensity
2. How many participants were involved in the study conducted by Bin Yang Janis Intoy and Michele Rucci?  
Option: 10  
Option: 12  
Option: 15  
Option: 20
3. What did the study participants view on the high-resolution monitor?  
Option: Images of animals  
Option: Grating patterns  
Option: Colorful shapes  
Option: Animated videos
4. According to the study how much time do humans spend with their eyes closed due to blinking?  
Option: 1-3%  
Option: 3-5%  
Option: 5-8%

Option: 8-10%

5. What conclusion can be drawn about the impact of blinking on visual processing from the study?

Option: Blinking disrupts visual processing

Option: Blinking improves visual acuity

Option: Blinking has no effect on visual processing

Option: Blinking delays visual perception

6. How does blinking lead to enhanced visual processing according to the study?

Option: By increasing eye fatigue

Option: By resetting visual information

Option: By causing blurred vision

Option: By reducing luminance changes

## Answer

**Multiple Choice:** 1. To enhance visual processing 2. 12 3. Grating patterns 4. 3-8% 5. Blinking improves visual acuity 6. By resetting visual information

## Vocabulary quizzes

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

1. What word best describes a mystery novel with a plot full of twists and turns?

Option: Intriguing

Option: Exacerbate

Option: Compensating

Option: Luminance

2. What can exacerbate the effects of strenuous exercise?

Option: Dehydration

Option: False positives

Option: Electrolyte

Option: Anticipating

3. What skin condition can be soothed by certain treatments?

Option: Eczema

Option: Fermentation

Option: Acetic Acid

Option: Pungent

4. What type of measures aim to stop something from happening?

Option: Preventative

Option: Colorectal

Option: Surge

Option: Public engagement

5. What is assessed when determining the success of a treatment?

Option: Effectiveness

Option: Acuity

Option: Notable

Option: Soothing

6. What is done when a researcher makes an educated guess to explain a phenomenon?

Option: Hypothesized

Option: Strenuous

Option: Public engagement

Option: Acetic Acid

7. What involves involving the community or society in a particular activity or cause?

Option: Public engagement

Option: Acuity

Option: Notable

Option: Exertion

8. What may lead to incorrect results in medical testing?

Option: False positives

Option: Surge

Option: Fermentation

Option: Pungent

9. What refers to the intensity of light emitted from a surface?

Option: Luminance

Option: Compensating

Option: Exacerbate

Option: Anticipating

10. What term describes making up for a deficiency or loss?



- Option: Compensating
- Option: Electrolyte
- Option: Anticipating
- Option: Preventative

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

11. \_\_\_\_\_ can lead to dehydration if not enough fluids are consumed.

12. There was a sudden \_\_\_\_\_ in interest after the announcement.

13. Fermentation often produces \_\_\_\_\_ as a byproduct.

14. \_\_\_\_\_ exercise can greatly impact one's physical health.

15. Effective planning involves \_\_\_\_\_ possible challenges.

16. Regular screenings can help detect early signs of \_\_\_\_\_ cancer.

17. The author received a \_\_\_\_\_ award for their contributions to literature.

18. The dish had a \_\_\_\_\_ aroma that filled the room.

19. \_\_\_\_\_ can occur if the body loses more fluids than it takes in.

20. Yogurt is made through the process of \_\_\_\_\_.

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

21. A warm bath can be very after a long day.
22. Sports drinks can help replenish lost during intense exercise.
23. The success of the campaign relied on strong to raise awareness.
24. The mystery novel had a plot full of twists and turns that kept readers engaged.
25. Regular exercise and a balanced diet are important measures for maintaining good health.
26. The study aimed to measure the of the new treatment method.



27. Individuals with sensitive skin may be prone to developing flare-ups.
28. Lack of sleep can feelings of stress and anxiety.
29. Adjusting the screen can reduce eye strain during prolonged computer use.
30. Scientists have various explanations for the unusual phenomenon.

## Answer

**Multiple Choice:** 1. Intriguing 2. Dehydration 3. Eczema 4. Preventative 5. Effectiveness 6. Hypothesized 7. Public engagement 8. False positives 9. Luminance 10. Compensating

**Gap-Fill:** 11. Exertion 12. Surge 13. Acetic Acid 14. Strenuous 15. Anticipating 16. Colorectal 17. Notable 18. Pungent 19. Dehydration 20. Fermentation

**Matching sentence:** 1. Soothing 2. Electrolyte 3. Public engagement 4. Intriguing 5. Preventative 6. Effectiveness 7. Eczema 8. Exacerbate 9. Luminance 10. Hypothesized

## CATEGORY

1. Health - LEVEL5

### Date Created

2024/06/24

### Author

aimeeyoung99