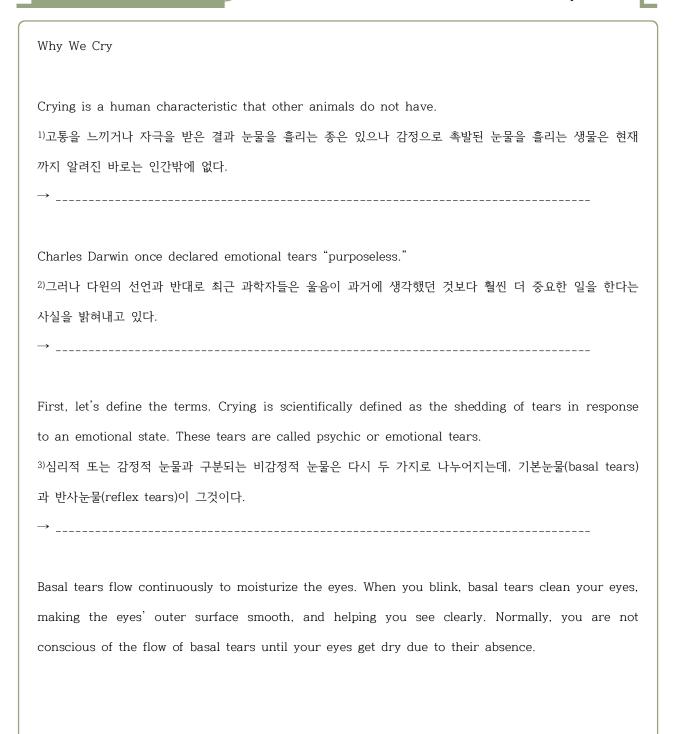


고등

YBM(박준언)

3.Fun Science about the Human Body



Reflex tears are the tears you shed in spite of yourself when, for instance, you slice a raw onion or encounter a cloud of dust. These tears help clear the eyes of such irritants as the gas from the onion or dust particles. When a tear is produced from the lacrimal gland, you blink in spite of yourself, spreading the tear as a film across your eye.

Your tear then has two fates. First, it can drain down the tiny hole in the corner of the eye, like the sink plug in your kitchen, and then flow through your nose.

4)울 때 코가 흐르는 이유가 여기에 있다.

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Second, when you are in a state of extreme sadness or pain, you have a really good cry, and your drainage system simply cannot deal with the volume of tears. The excess fluid now flows over your eyelids and down your cheeks.

There have been many theories about the origin and function of emotional tears.

5)1600년대에 풍미했던 이론에 따르면 감정(특히 사랑)이 심장을 데우면 심장은 열을 식히기 위해 수증기를 발생시킨다고 생각되었다.

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This theory was rejected when Niels Stensen, a scientist in Denmark, discovered in 1662 that not emotions but the lacrimal gland, the tiny structure on the inside corner of the eye, is the proper origin of tears. Stensen's theory was that tears were simply a way to keep the eye moist.

⁶⁾과학적으로 입증되지는 못했지만, 스트레스로 인해 몸에 쌓인 독소를 눈물이 배출한다는 이론이 20세기에 한 때 인기를 얻었다,

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In recent years, evidence is mounting in support of new theories. One of them is that emotional tears trigger social bonding and human connection.

7)인간은 아주 어린 시절부터 타인과 관계를 맺기 위해 운다. 왜냐하면 인간은 태어날 때 육체적으로나 정서적으로 스스로 아무 것도 할 수 없는 무방비 상태이기 때문이다.

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Even though we become more capable as we grow, we never quite grow out of occasional attacks of helplessness.

Crying signals to other people that we are experiencing some important problem that is beyond our ability to cope with. In a 2016 study, test subjects were shown a photograph of someone visibly crying, and then shown the same photo with the tears removed.

8)그 결과 실험 참가자들은 첫 번째 사진에 있는 사람을 훨씬 더 많이 도와주려고 했다.

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All types of tears have three layers: a thin mucus layer that sits directly on the eye, a watery layer in the middle, and a thin oily layer on top that prevents the tear from evaporating. Interestingly enough, scientists have found that the types of tears are chemically different from each other. Compared to basal tears, the watery portion of reflex tears is larger and has higher levels of antibodies that can stop harmful microorganisms. On the other hand, emotional tears contain more protein.

One interpretation is that this higher protein content makes emotional tears stickier, so they stick to the skin more strongly and run down the face more slowly, making them more likely to be seen by others.

⁹⁾이 해석에 따르면, 눈물이 눈에 더 잘 띌수록 보는 사람의 동정심을 유발할 가능성이 높아진다.

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"There must have been some point in time, evolutionarily, when tears became something that automatically set off empathy and compassion in another," says Michael Trimble, a doctor at University College London.

A less touching theory about emotional tears focuses on crying's ability to manipulate others.

10)연구자들은 아기뿐만 아니라 어른도, 그들이 의식하건 하지 않건 간에, 원하는 것을 얻기 위한 수단으로 눈물을 이용한다고 생각한다.

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Jonathan Rottenberg, an emotion researcher and professor of psychology at the University of South Florida, says that we learn early on that crying can greatly reduce anger from other people.

11)연인들이 다툴 때 눈물을 흔히 볼 수 있는 이유가 여기에 있다고 그는 생각한다.

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When someone feels guilty, they have a greater chance of being forgiven as long as tears are running down their face, says Rottenberg. Some researchers are even looking into the molecules in tears to see if there is one that is responsible for reducing aggression.

Then, a question arises: if tears are so important for human bonding, bringing out compassion, and reducing aggression, do people who do not cry have problems making social connections? The answer is, yes, mostly. Psychologists have discovered that such people have a tendency to withdraw and describe their relationship experiences as less connected. 12)흥미로운 또 하나의 사실은, 감정적 상태가 눈물의 생성에 영향을 미치기도 하지만, 그 반대도 사실이라는 것이다. 13)예를 들어, 병이 있어 눈물을 생성하는 데 어려움을 겪는 환자들은 자신의 감정이 무엇인지 파악하는 데도 어려움을 겪는다. As a result, their social relationships tend to become troubled. Despite its benefits, crying is not always followed by immediate relief. 14)한 실험에서 참가자들에게 슬픈 영화를 보여 주고, 영화가 끝나자마자 기분을 측정하게 했더니, 영화를 보고 운 사람은 울지 않은 사람보다 실제로 더 우울한 기분에 빠져 있었다. However, after some time, the criers reported being in a better mood than they had been before watching the movie. 15)울음의 이점이 효과를 발휘할 충분한 시간이 주어진다면 울음은 실제로 기분을 나아지게 했다.

Modern research into crying is still young, but evidence is mounting that crying demonstrates our deep connections with our world. So go on and wear your tears with pride.

정답



◇「콘텐츠산업 진흥법 시행령」제33조에 의한 ㅠ시

1) 제작연월일 : 2019년 07월 15일

2) 제작자 : 교육지대㈜

3) 이 콘텐츠는 「콘텐츠산업 진흥법」에 따라 최초 제작일부터 5년간 보호됩니다.

◇「콘텐츠산업 진흥법」외에도「저작권법」에 의하여 보호되는 콘텐츠의 경우, 그 콘텐츠의 전부 또는 일부를 무단으로 복제하거나 전송하는 것은 콘텐츠산업 진흥법 외에도 저작권법에 의한법적 책임을 질 수 있습니다.

- 1) [정답] Though some species shed tears as a result of pain or irritation, humans are currently known as the only creatures whose tears can be triggered by their feelings.
- 2) [정답] Contrary to Darwin's declaration, however, scientists have recently found that crying plays a far more important role than was once believed.
- 3) [정답] Differentiated from psychic or emotional tears, non-emotional tears are divided into two types: basal tears and reflex tears.
- 4) [정답] That is why your nose runs when you cry.
- 5) [정답] A prevailing theory in the 1600s held that emotions especially love heated the heart, which generated water vapor in order to cool itself down.
- 6) [정답] A theory that crying removes toxic substances from the body that build up during times of stress gained some popularity in the 20th century, although not scientifically proven.
- 7) [정답] We cry from a very early age to bring about a connection with others, for we come into the world physically and emotionally unequipped to deal with anything on our own.
- 8) [정답] The result: they were much more likely

to reach out to the person in the first photo.

- 9) [정답] According to that interpretation, the more visible tears are, the more likely they are to bring out compassion from observers.
- 10) [정답] Researchers believe that not only babies but also adults use tears as a tool for getting what they need, whether they're aware of it or not.
- 11) [정답] That is why he thinks tears are common in fights between lovers.
- 12) [정답] Another interesting fact is that while emotional states affect the production of tears, the contrary is also true.
- 13) [정답] For example, patients who have great difficulty producing tears, due to some diseases, also have difficulty identifying their own feelings.
- 14) [정답] In an experiment in which participants were shown a sad movie and had their mood measured right after watching it, those who had cried were actually in a worse mood than those who had not
- 15) [정답] Crying did relieve their mood, provided that they were given enough time for the benefits of crying to set in.