

## NOBEL PRIZE Unlocking mysteries of senses

U.S. scientists **David Julius** and **Ardem Patapoutian** win Nobel Prize for medicine for discoveries on receptors in the skin that respond to heat and pressure



■ Their discoveries have unlocked one of the secrets of nature by explaining the molecular basis for sensing heat, cold and mechanical force, which is fundamental to our ability to feel, interpret and interact with our internal and external environment

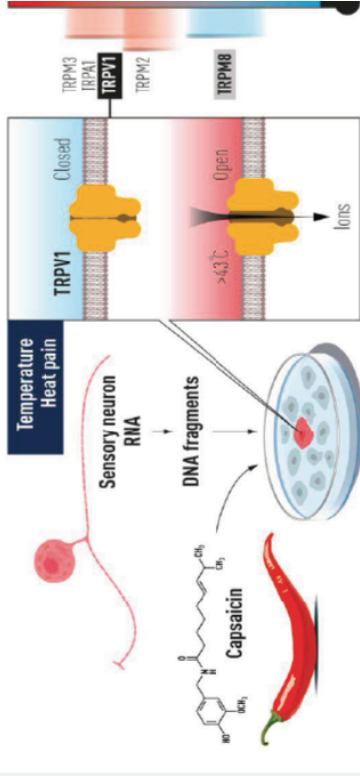


■ **David Julius, 65,** was recognised for his research using capsaicin — a compound from chilli peppers that induces a burning sensation — to identify which nerve sensors in the skin respond to heat

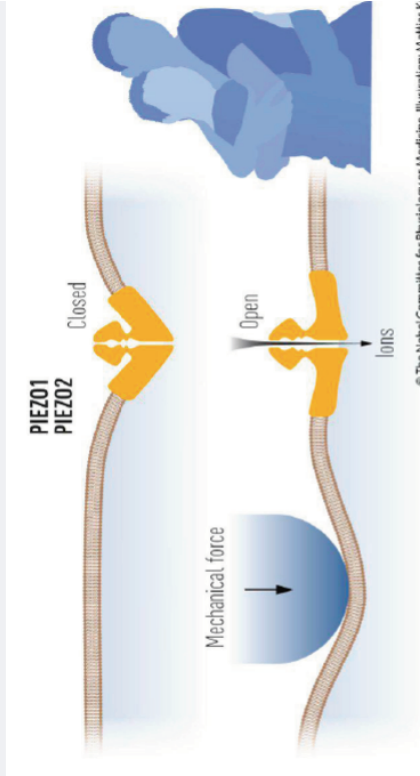


■ **Ardem Patapoutian, 54,** is credited for finding the cellular mechanism and the underlying gene that translates a mechanical force on our skin into an electric nerve signal

**In our daily lives we take these sensations for granted, but how are nerve impulses initiated so that temperature and pressure can be perceived?... This question has been solved by this year's Nobel winners | NOBEL COMMITTEE**



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The prestigious award comes with a gold medal and 10 million Swedish kronor (over \$1.14 million). The prize money comes from a bequest left by the prize's creator, Swedish inventor Alfred Nobel, who died in 1895.

Last year's prize went to three scientists who discovered the liver-ravaging hepatitis C virus, a breakthrough that led to cures for the deadly disease and tests to keep the scourge from spreading through blood banks.

The Nobel Prize for Physiology or Medicine is awarded for discovery of major importance in life science or medicine. Discoveries that have changed the scientific paradigm and are of great benefit for humankind are awarded the prize.

Life time achievements or scientific leadership cannot be considered for the prize.

Karolinska Institutet (now The Nobel Assembly at Karolinska Institutet) selects the winner.

No one can nominate herself or himself.

The 2021 Nobel for Medicine this year was awarded jointly to and David Julius and Ardem Patapoutian, both of the United States, "for their discoveries of receptors for temperature and touch."

Intensive ongoing research originating from this year's Nobel Prize awarded discoveries focuses on elucidating their functions in a variety of physiological processes. This knowledge is being used to develop treatments for a range of disease conditions, including chronic pain

Ardem Patapoutian used pressure-sensitive cells to discover a novel class of sensors that respond to mechanical stimuli in the skin and internal organs.

David Julius utilised capsaicin, a pungent compound from chilli peppers that induces a burning sensation, to identify a sensor in the nerve endings of the skin that responds to heat.

Context

Details

## NOBEL PRIZE ON MEDICINE

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