



NEWS

THE NOBEL PRIZE IN PHYSIOLOGY OR MEDICINE 2019



William G. Kaelin Jr
(Born: 1957, New York, NY, USA)
Affiliation at the time of the award: Harvard Medical School, Boston, MA, USA, Howard Hughes Medical Institute, Chevy Chase, MD, USA



Sir Peter J. Ratcliffe
(Born: 1954, Lancashire, United Kingdom)
Affiliation at the time of the award: University of Oxford, Oxford, United Kingdom, Francis Crick Institute, London, United Kingdom



Gregg L. Semenza
(Born: 1956, New York, NY, USA)
Affiliation at the time of the award: Johns Hopkins University, Baltimore, MD, USA

The Nobel Prize in Physiology or Medicine 2019 was awarded jointly to **William G. Kaelin Jr, Sir Peter J. Ratcliffe and Gregg L. Semenza** “for their discoveries of how cells sense and adapt to oxygen availability”.

Animals need oxygen for the conversion of food into useful energy. The fundamental importance of oxygen has been understood for centuries, but how cells adapt to changes in levels of oxygen has long been unknown.

William G. Kaelin Jr., Sir Peter J. Ratcliffe and Gregg L. Semenza discovered how cells can sense

and adapt to changing oxygen availability. They identified molecular machinery that regulates the activity of genes in response to varying levels of oxygen.

The seminal discoveries by this year’s Nobel Laureates revealed the mechanism for one of life’s most essential adaptive processes. They established the basis for our understanding of how oxygen levels affect cellular metabolism and physiological function. Their discoveries have also paved the way for promising new strategies to fight anemia, cancer and many other diseases.

https://www.nobelprize.org/nobel_prizes/medicine/laureates/2019/