Speaker’s manuscript, slide show

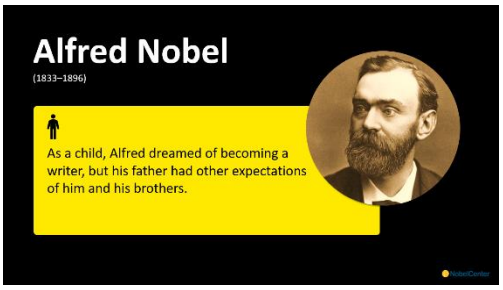
The 2017 Nobel Prize in Physiology or Medicine

Title slide

Now the world has found out who will receive the 2017 Nobel Prize in Physiology or Medicine.

Today you will learn more about the background of the Nobel Prize and about this year’s Prize.

Alfred Nobel



Alfred Nobel was born in Stockholm, Sweden on October 23, 1833.

As a nine-year-old, he moved together with his older brothers and his mother to Saint Petersburg, the capital of Russia at that time. There his father Immanuel had started a factory.

In St. Petersburg, Alfred received a good education and dreamed of becoming a writer. Alfred’s father made him study natural sciences and technology instead, since he and his brothers were expected to take over the family’s factory.

Dynamite

Alfred Nobel, his father and his brother Emil tried to invent an explosive that was safer than pure nitroglycerine. It was very dangerous to use nitroglycerine as an explosive – so dangerous that Alfred’s brother Emil died in an explosives accident in 1864.

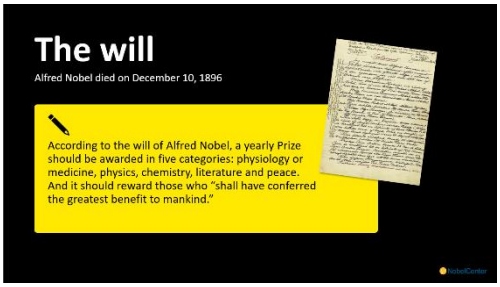
But Alfred finally succeeded in developing a method for producing nitroglycerine and a way to use it as an explosive.

He named his invention “Dynamite” in 1867. Dynamite was a comparatively safe explosive. It was in huge demand during the period of industrialisation, since there was so much construction work. By taking out patents on many of his ideas, Alfred earned a lot of money and started many factories around the world.

The will

Alfred Nobel died of a stroke on December 10, 1896. He had no children, so in his will he wrote that a large part of his fortune should be placed in a fund. The yearly interest on this fund would pay for a prize given to “those who, during the preceding year, shall have conferred the greatest benefit to mankind.”

The interest would be divided into five equal parts, with one part awarded to “the person who shall have made the most important discovery within the domain of physiology or medicine.” The first Nobel Prize was awarded in 1901. Since then, more than 900 Prizes have been awarded to different people and organisations.



The Nobel Prize Award Ceremony

On December 10 each year, the Nobel Prize is presented. This year the Prize in each category consists of a medal, a diploma and nine million Swedish kronor – or over a million US dollars.

The Prize Award Ceremony is held at Stockholm Concert Hall for all categories except the Peace Prize, which is awarded in Oslo, Norway. After the actual Award Ceremony, there is an elegant Banquet in each city to honour the new Nobel Laureates.

The Nobel Prize in Physiology or Medicine

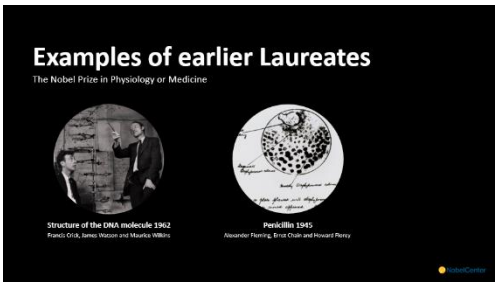
“…the person who shall have made the most important discovery within the domain of physiology or medicine.”

The Nobel Prize in Physiology or Medicine is thus awarded to people who have either made a discovery about how organisms work or have helped find a cure for a disease.

Examples of earlier Laureates

Francis Crick, James Watson and Maurice Wilkins received the 1962 Prize for their discoveries and descriptions about the structure of DNA molecules.

Alexander Fleming, Ernst Chain and Howard Florey received the 1945 Prize for the discovery of penicillin and its curative effects on bacterial diseases.



The 2017 Laureates

Jeffrey C. Hall, Michael Rosbash and Michael W. Young

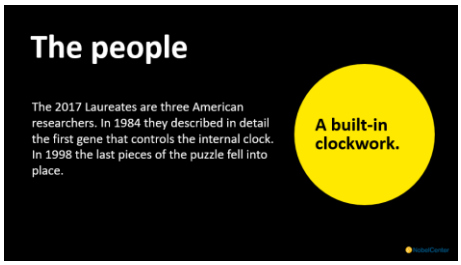
For their discoveries of molecular mechanisms controlling the circadian rythm

All life on earth is adapted to the rotation of our planet around its axle, since this gives rise to day and night. For many years we have known that living organisms adapt to the regular rhythm of the day. But how does this biological clock work? What actually controls the clockwork inside every cell of organisms?

The people

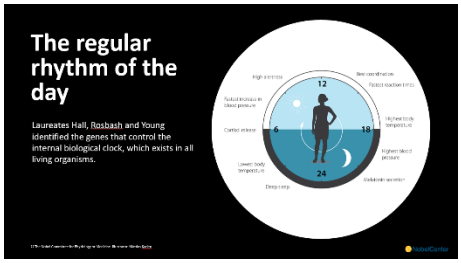
There have been many different theories about how the internal clock functions. This year's Nobel Prize is being awarded for discoveries that showed that specific genes in each cell control this clock.

The 2017 Laureates in Physiology or Medicine are three American researchers, aged around 70. In 1984 they described the first gene in detail, but it took until 1998 before the final pieces of the puzzle fell into place.



The regular rhythm of the day

Laureates Hall, Rosbash and Young studied the genes that control our internal clock and explained how the clock works. Meanwhile they also identified what proteins these genes encode. All organisms thus have a kind of internal clock, which adapts and prepares all our biological functions to what is happening at different times of day and night. For example, this clock affects sleep, hormone levels, body temperature and metabolism.



The discoveries

To understand how our internal clock operates, the three researchers used fruit flies as an experimental tool in order to search for new genes.

Thanks to the discoveries made by the Laureates, today we know in great detail how the internal clock functions.

The benefits

These discoveries are part of physiology, which is the study of how living organisms function.

The discoveries behind the 2017 Nobel Prize in Physiology or Medicine create new potential to influence the biological clock. This is medically important, since an imbalance in our internal clock may increase the risk of various diseases. Both our physical and mental health are affected by this internal clock.

The knowledge provided by this discovery is beneficial in itself. Knowledge leads to advances in our society. This knowledge creates opportunities and is essential to the development of new medicines, for example.