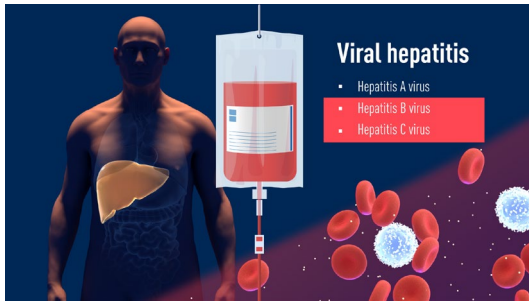


Student Worksheet – Medicine Prize 2020

The fight against one of our greatest global health problems – blood-borne hepatitis



What is hepatitis? Hepatitis is an inflammation of the liver. This year's three Nobel Laureates – **Harvey J. Alter**, **Michael Houghton** and **Charles M. Rice** – made pioneering discoveries in the fight against blood-borne hepatitis, which is one of our greatest health problems worldwide. Their work made it possible to identify a whole new virus called the hepatitis C virus.

The hepatitis C virus leads to chronic liver damage and cancer in people. The disease causes about 400,000 deaths every year around the world.

As early as the 1940s, it became clear that there were two main kinds of hepatitis infections. One is transmitted through polluted water and food and is caused by the hepatitis A virus. Another is transmitted through the blood, such as when one person donates blood to another, and it is caused by an infectious agent that the researchers were later able to identify as the hepatitis B virus. With the discovery of the hepatitis B virus, it became possible to test blood before giving people transfusions. Nevertheless, some people still contracted hepatitis after receiving a blood transfusion. Why did that happen?

All of this year's laureates have contributed in different ways to solving that mystery. It turned out that there is yet another infectious agent – a virus that also spreads infection through the blood. It took several decades to come to that conclusion, and the three researchers all contributed pivotal discoveries. Alter demonstrated that the new infectious agent was a virus. Houghton identified the virus, which was given the name hepatitis C. Finally, Rice proved that the virus alone is enough to cause chronic hepatitis.

The laureates' discoveries made it possible to develop blood tests and new medications that have saved millions of people's lives.

Vocabulary

HEPATITIS is an inflammation of the liver.

BLOOD TRANSFUSION is when a patient is given blood that has been donated by another person.

CHRONIC DISEASE means a recurring, long-lasting or lifelong illness.

What do you think?

What is the most interesting part of the laureates' work?

Alfred Nobel wanted the Nobel Prizes to be awarded to people who worked for the greatest benefit to humankind. What is the greatest benefit of the laureates' contributions?
