Viruses definition medical

URL: The virus very small microbes. They are made of genetic material inside a protein coating. Viruses cause familiar infectious diseases such as common colds, flu and hesk. They also cause severe diseases such as HIV/AIDS, Ebola, and COVID-19. Viruses are like hijackers. They attack living, natural, and use those cells to replicate and produce other viruses like their own. It can kill, damage, or change cells and make you sick. Different viruses attack certain cells in your body, such as your liver, respiratory system, or blood. When you have a virus, you may not always be sick of it. Your immune system may be able to fight it for most viral infections, treatment can only help with symptoms while you wait for your immune system to fight the virus. Antibiotics do not work for viral infections. There are antiviral drugs to treat some viral infections. Vaccines can help prevent you from getting many of your viral diseases. How infection spreads (Centers for Disease Control and Prevention) Molluscum Contagiosum (Logical Images) Exanthem Viral (Logical Images) Viruses: Small living particles that can infect cells and change how cells function. Infection with a virus can cause symptoms of the disease. The disease and the symptoms that are caused depend on the type of virus and the type of cells that are infected. Viruses are microscopic parasites that are generally much smaller than bacteria. They lack the capacity to grow and reproductive outside of a host body. Viruses are mainly known for their communicable cause. Widespread incidents of illness and death have undoubtedly strengthened such a reputation. The Ebola outbreak in West Africa in 2014, and the H1N1/2009 swine flu pandemic (widespread global outbreak) are likely to come to mind. While such viruses are certainly wily enemies for scientists and medical professionals, others of their ilk have been effective as research tools; Most understand basic cellular processes such as protein synthesis mechanics, and viruses themselves. DiscoveryHow are much smaller than most viruses compared to bacteria? A little. With a diameter of 220 nm, the measles virus is about 8 times smaller than E.coli bacteria. At 45 nm, the hepatitis virus is about 40 times smaller than E.coli. To sense how small this is, David R. Wozner, a biology professor at Davidson College, presents an analogy in a 2010 article published in the journal Nature Education: The polio virus, 30 nm across, is about 10,0 times smaller than a grain of salt. Such differences in size between viruses and bacteria provided the first critical clue to the former existence. Towards the end of the 19th century, the idea that microorganisms, especially bacteria, can cause disease, is well established. However, researchers were somewhat uneadded following a worrying disease in tobacco - tobacco mosaic disease Because of it. German chemist and agricultural researcher Adolf Meyer published the results of his extensive experiments in 1886 titled On Tobacco Mosaic Disease. In particular, Meyer found that when he crushed the infected leaves and injected worrying water into the veins of healthy tobacco leaves, it led to a yellow particle and a discoloration feature of the disease. Meyer rightly thought that everything that causes tobacco mosaic disease is in leafy water. However, more tangible results missed him. Meyer felt certain that everything that causes the disease had a bacterial origin, but failed to isolate the causing factor or identify it under a microscope. Nor could it recreate the disease by injecting healthy plants with a range of known bacteria. In 1892, a Russian student, Dmitry Ivanovsky, basically repeated Myer's juicy experiments but with a little twist. According to a 1972 paper published in the journal Bacteriological Surveys, Ivanovsky passed juice through contaminated leaves from a Chamberland filter where the filter fine was enough to catch known bacteria and other microorganisms. Despite sifting, the liquid purification remained infectious, suggesting a new piece into the puzzle; anything that caused the disease was small enough to pass through the filter. However, Ivanovsky also concluded that the cause of mosaic disease was bacterial tobacco, suggesting that the purifier contained a bacteria or a soluble toxin until 1898 when the presence of viruses was acknowledged. While confirming Ivanovsky's results, Dutch scientist Martinos Bijrink suggested that the cause of mosaic disease was not bacterial tobacco but a living liquid virus referred to as a filterable virus with a now-obsolete term. Tests by Ivanovsky, Bijrink and others that then only pointed to the existence of viruses. It takes a few more decades for anyone to actually see a virus. When the electron microscope was developed in 1931 by German scientists Arnst Roska and Max Noll, the first virus could be visualized with new high-resolution technology, according to a 2009 paper published in the journal Clinical Microbiology Reviews. It was the first images taken by Roska and her colleagues in 1939 of the tobacco mosaic virus. In this way, the discovery of viruses was complete. This digitally colored image shows the H1N1 influenza virus under a transitional electron microscope. In 2009, the virus (then called swine flu) caused an epidemic, and is thought to have killed 200,000 people worldwide. (Image credit: National Institute of Allergy and Infectious Diseases (NIAID)) StructureViruses teeter on the boundaries of what is considered life. On the one hand, they contain key elements that make up all living organisms: nuclear acids, DNA or RNA (any given virus can only have one or the other). On the other hand, viruses lack the capacity to Read and act on the information contained inside these nuclear acids. A minimal virus is a parasitic minimal that requires replication (making more copies of itself) in a host cell, says Jaclin Dodley, a professor of molecular life sciences at the University of Texas at Austin. The virus cannot reproductive itself outside the host because it lacks the sophisticated machines that a [host] cell has at its disposal. Host cellular machines allow viruses to produce RNA from their DNA (a process called transcript) and build proteins according to the instructions encoded in their RNA (a process called translation). When a virus is fully assembled and capable of infection, it is known as a virion. According to the authors of Medical Microbiology 4 Ed. (Medical Branch of the University of Texas at Galveston, 1996), the structure of a simple virion consists of an internal nuclear nuclear acid nucleus surrounded by a coating outside proteins known as capoids. Capsids protect viral nucleus acids from chewing and removing by special host cell enzymes called nuclei. Some viruses have a second protective layer, known as envelopes. This layer is usually obtained from the cell membrane of a host; Little bits have been stolen that have been modified and re-targeted for the virus to use. DNA or RNA found in the virus nucleus can be single-stranded or double-stranded. The genome or sum of genetic information is a virus. Viral genomes are generally small in size, encoded only for essential proteins such as capsid proteins, enzymes, and proteins necessary to replicate inside a host cell. According to Medical Microbiology, the primary role of the virus or virion is to deliver its DNA or RNA genome to the host cell so that the genome is expressed (transcribed and translated) by the host cell. Respiratory passages and open wounds can act as a gateway for viruses. Sometimes insects provide entry mode. Certain viruses will mount on the saliva of an insect and enter the host body after the insect bites. According to the authors of Cell Molecular Biology, 4th Ed (Garland Sciences, 2002) Such viruses can proliferate inside both insect and host cells and ensure smooth transmission from one to the other. Among its examples are viruses that cause yellow fever and dengue fever. The viruses will then connect themselves to the host cell surfaces. They do this by recognizing and binding to cell surface receptors, such as two pieces of interconnected puzzles. Many different viruses can bind to a receptor, and a single virus can bind different receptors to the surface of the cell. While viruses use them to their advantage, cell-level receptors are actually designed to serve cells. After connecting a virus to the surface of the host cell, it can start moving across the host cell casing or membrane. There are many different entry modes. HIV, an envelope virus, fuses with membranes Pushed through. Another packed virus called the influenza virus has been sunk by cells. Some non-packed viruses, such as polio viruses, create porous channels of entry and bough through the membrane. Once inside, viruses release their genomes as well as disrupt or hijack different parts of cellular machinery. Viral genomes direct host cells to eventually produce viral proteins (many times stop the synthesis of any RNA and protein that the host cell can use). Finally, viruses stack the deck to their advantage, both inside the host cell and inside their host by creating conditions that allow them to spread. For example, when suffering from a common cold, according to Cell Molecular Biology, a sneeze eats 20,000 drops containing rhino particles or coronavirus. Touching or breathing those drops in is the only thing that takes for the cold to spread. Microscopic view of the Ebola virus. (Image credit: CDC/Cynthia Goldsmith/Public Health Image Library) New discoveries that began to understand the relationships between viruses began, cited similarities in size and shape, whether viruses contain DNA or RNA, and in which form. With better methods for sequencing and comparing viral genomes, and with the steady influx of new scientific data, what we know about viruses and their histories is constantly being fine-tuned. By 1992, the idea that viruses were much smaller than bacteria was taken with small genomes for granted. That year, scientists discovered a bacterial-like structure inside some amoebias in a water cooling tower, Wesner reported. As it turns out, what they discovered was not a bacterial species, but a very large virus, dubbed the Mimi Virus. The size of the virus is about 750 nm and may also have coloring properties similar to gram-positive bacteria. This followed the discovery of other major viruses such as mammovirus and megavirus. It's unclear how these big viruses evolved, Dodley said, referring to them as the elephant of the virus world, adding, They may become mangen cells, which have become parasites of other cells (mimi infects amoeb viruses), or they may be more conventional viruses that constantly obtain additional host genes. However, their genome still contains many remnants of genes associated with the translation process. It is likely that mimi viruses may have once been independent cells. Or they could simply obtain and accumulate some host genes, Wozner wrote. Such discoveries raise new questions and open up new ways of research. In the future, these studies may provide answers to fundamental questions about the origin of viruses, how they reach their current parasitic state, and whether viruses should be included in the tree of life. Additional Resources

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