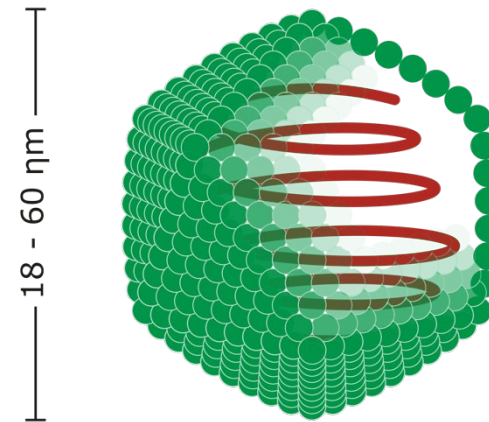


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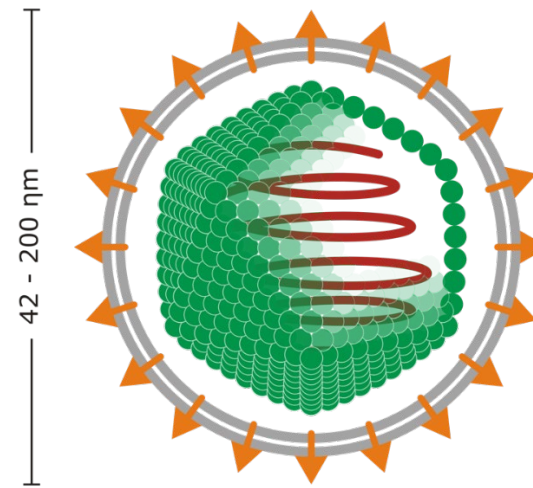
Icosahedral

- Spherical in shape, but a closer look reveals they are icosahedral.
- The genetic material is enclosed inside of the capsid.
- Viruses with icosahedral structures are released into the environment when the cell dies, breaks down, and lyses, thus releasing the virions.
- Examples: poliovirus, rhinovirus, and adenovirus



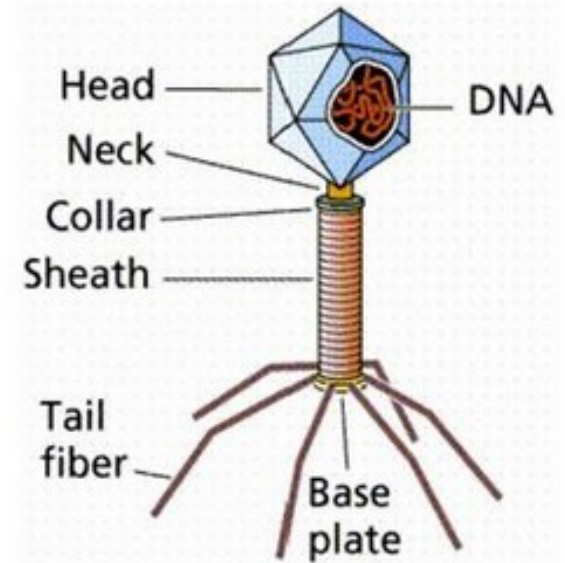
Envelope

- Its structure is a conventional icosahedral or helical structure
- Its structure is surrounded/enclosed by a lipid bilayer membrane
- The envelope of the virus forms when the virus exits the cell via budding mechanism
- Examples: influenza, hepatitis C, HIV



Complex

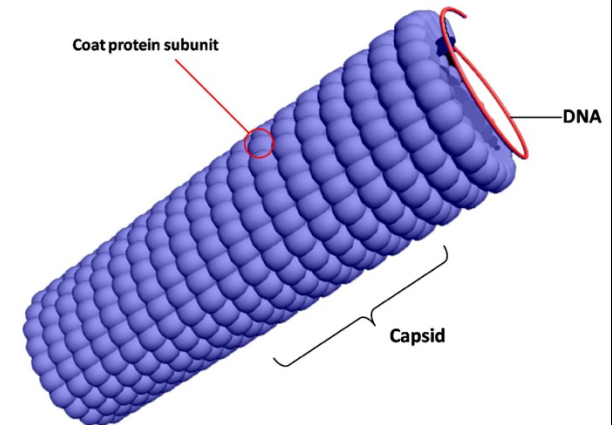
- Its structure is a combination of icosahedral and helical shape
- May have a complex outer wall or head-tail structure
- The head-tail structure is unique of bacteriophages (viruses that only infect bacteria)
- The head of the virus possesses an icosahedral shape with a helical shaped tail
- The tail in a bacteriophage is used to attach to the bacterium. It creates a hole in the cell wall, and it inserts its DNA into the cell.
- Examples: variola virus (smallpox)



<http://www.fabpretty.com/science/microbiology/transmission-and-symptoms-of-virus/>

Helical

- Its structure is composed of a capsid with a central cavity (hollow tube).
- The central cavity is made of proteins arranged in a circular form.
- The circular morphology of creates a disk like shape that attaches helically simulating a toy slinky.
- The hollow tube shape allows for the nucleic acid to be stored in the middle.
- Helical viruses are usually around 15-19 nm wide and 300-500nm.
- Example: Tobacco Mosaic Virus



https://commons.wikimedia.org/wiki/File:Helical_capsid.jpg