

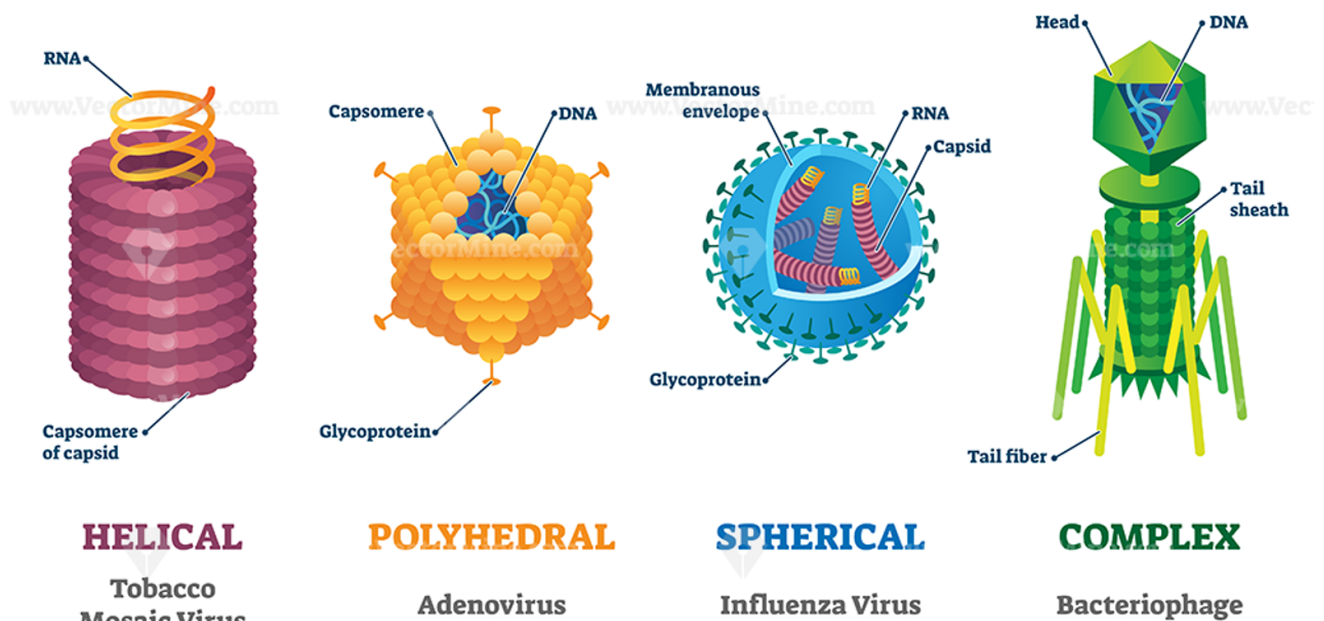
Viruses

Definition

Virus: Nonliving strand of genetic material within a protein coat

- Viruses don't have all the characteristics of human life
- They are very small (5-300nm)
- Unknown origins
- Cause disease in humans

TYPES OF VIRUSES



- The capsid is defined as the outer layer that holds the genetic material
- The genetic material can be DNA or RNA

Viral Infection

Lytic Cycle

1. A cell is infected
(for a phage, it injects DNA)

Lysogenic Cycle

1. A cell is infected
(for a phage, it injects DNA)

2. DNA circularizes
3. Enters the **Lytic Cycle**
4. New DNA is manufactured as well as proteins
5. Virions are assembled from the DNA and proteins
6. The Cell lyses (explodes) releasing the new Virions

2. DNA circularizes
3. Enters the **Lysogenic Cycle**
4. DNA integrates with the chromosomal DNA
5. When cell division occurs, the modified DNA gets replicated as well
6. After some time, the infected DNA will separate again and enact its function later (could be months to decades)

Retroviruses (HIV)

- Have RNA instead of DNA
- Quite complex

Infection

1. Viral cell sticks to the cell surface
2. Merges with cell wall in order to enter
3. RNA gets transcribed into DNA
4. DNA gets integrated into the chromosomal DNA
5. New viral RNA is produced
6. Viral RNA produces proteins
7. New RNA and proteins move to the edge of the cell and exits
8. Viron matures

Prions

Prions

Prions: Proteins that cause diseases