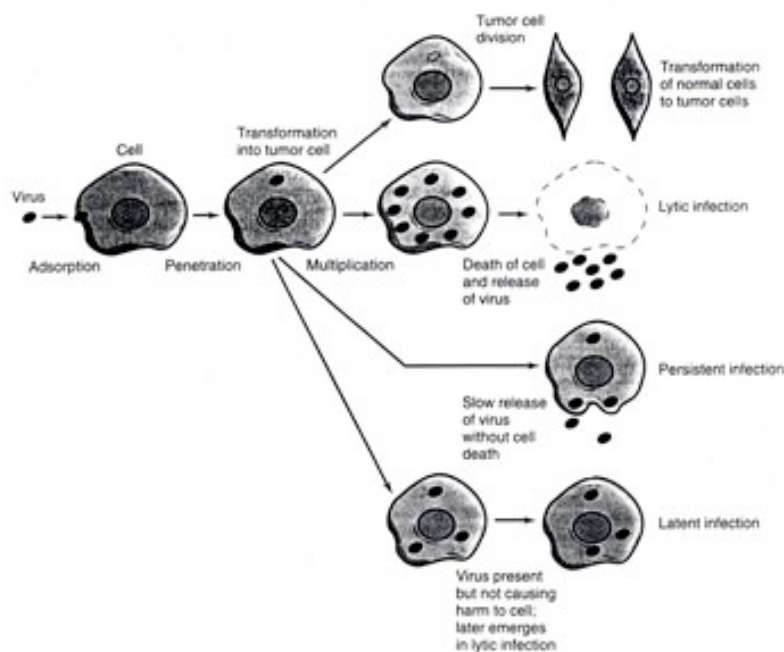


## Differences between bacteriophages and viruses that infect eukaryotic cells

An important difference between bacterial and animal cells is the presence of rigid cell walls in bacteria and their absence in animal cells. This difference is important, because it influences the way viruses enter and leave the cell. In bacterial viruses, the protein coat remains outside the cell and only the viral genome is injected into the cell. In animal viruses, the virus attaches to specific receptors on the plasma membrane and the *whole virus is taken in by endocytosis* (pinocytosis or phagocytosis). The viral envelope (if present) is stripped off inside the cell, and the separation of the viral genome from the protein coat then takes place. Not all infections of animal host cells result in lysis of the cell (as in the lytic cycle of bacteriophages). In the case of enveloped animal viruses, the viruses are released by a **budding process**. The process is slow and the host cell may remain alive and continue to release viruses over a long period of time. In some cases the virus may become dormant (though remaining infectious) inside the host cell, appearing spontaneously at a later time. (Unlike temperate bacteriophages that integrate their DNA into the genome of the host cell as provirus, animal viruses do not usually integrate into the animal genome during the latent stage.) Finally, some animal viruses may cause transformation of host cells to the cancerous state.



Possible effects that animal viruses may have on cells they infect.

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