

Source: [\[KBhBIO101Viruses\]](#)

# 1 | Viral Genetic Mutations

## 1.1 | Genetic Shift

Whole segments of genome exchange abruptly as two flu viruses infect the same cell to create a new strand. This usually occurs due an error in a polymerase-driven process.

## 1.2 | Genetic Drift

Single/groups of nucleotides flip slowly over time due to mistakes in [\[KBhBIO101RNAReplication\]](#). Viruses recombine without or genome segment reassortment by crossing-over mechanism (two viruses cross-talk by infecting the same host cell) or genome segment reassortment (remember how [\[KBhBIO101Retroviruses\]](#) HIV need protease to cut pa. Think! the flu

The former is an environment-dependent process, where the latter is able to be modeled as it is due to transcription mistake.

## 1.3 | Mutation w.r.t. [\[KBhBIO101TypesOfViruses\]](#)

### Viral genome size vs. mutation rate

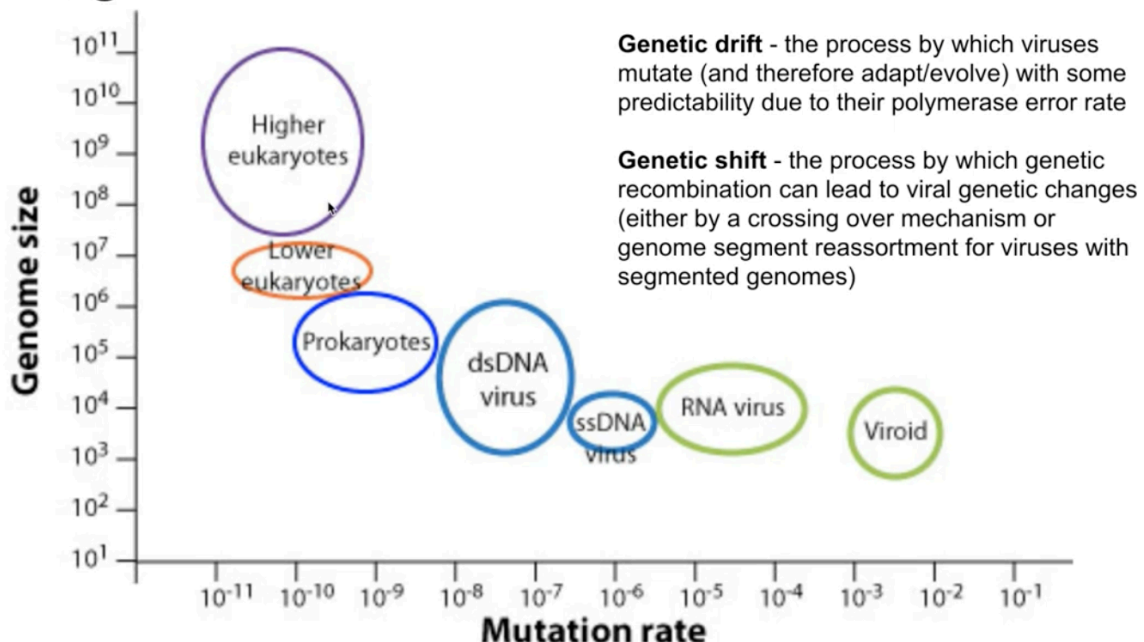


Figure 1: Screen Shot 2020-10-12 at 11.24.39 PM.png

- **RNA viruses** could mutate more because it does not have checks
- **More complex+largest viruses** (DNA viruses) harder to mutate