

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. There are two mechanisms by which happens — (#ASK) the **crossing-over mechanism** and **genome segment reassortment**

1.1.1 | Crossing-over

Self-mixing of ozaki fragments during viral recombination in the [KBhBIO101DNAReplication](#) process cause sudden mutations

1.1.2 | Genome Segment Reassortment

Two viruses coinfect the same cell, causing cross-talk in swapping segments

1.2 | Genetic Drift

This usually occurs due an error in a polymerase-driven process, where single/groups of nucleotides flip slowly over time due to mistakes in [KBhBIO101RNAReplication](#).

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

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

Viral genome size vs. mutation rate

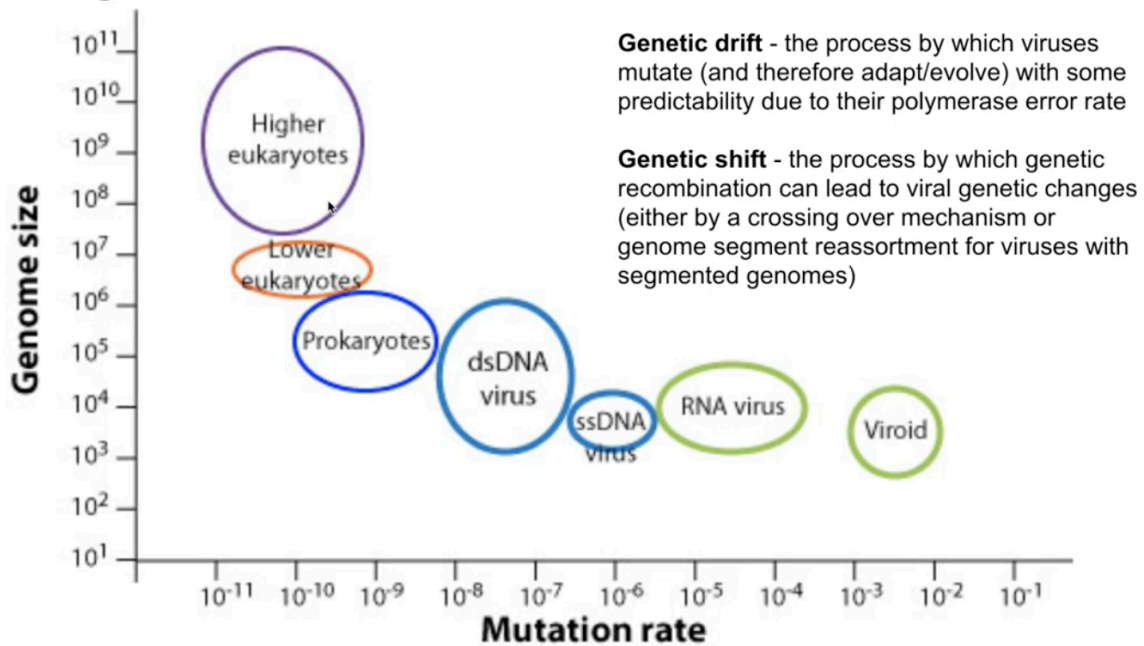


Figure 1: Screen Shot 2020-10-12 at 11.24.39 PM.png

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