

Vaccines & Human Health

Vaccines

- = a weakened, diluted or dead form of the virus that is injected (because saliva & stomach enzymes would destroy it) into the body to produce immunity.
- The body reacts to the shape of the virus and produces antibodies – so immune system can fight off the disease (produce immunity).
 - Vaccines can prevent outbreaks, infection and death.
 - However, vaccines can also weaken your immune system – you cannot fight off other diseases because your immune system is busy.

Effects of viruses on human health

| Harmful | Beneficial |
|---|--|
| <ul style="list-style-type: none">•Causes disease, cancer | <ul style="list-style-type: none">•Vector for gene splicing (to “replace” bad gene) |
| <ul style="list-style-type: none">•Causes brain damage (ex. Measles) | <ul style="list-style-type: none">•Biological control (control or eliminate other organisms) |
| <ul style="list-style-type: none">•Destroys organs ex. Hepatitis – liver, heart | <ul style="list-style-type: none">•Make vaccines |
| <ul style="list-style-type: none">•Can be fatal | |

Avoiding Viruses

- Vaccinations
- Good hygiene – wash hands, bedding, clothing...
- Abstinence
- Boil water where cleanliness is in question
- Eat healthy

Retroviruses

- Have RNA = when a retrovirus infects a cell, they make a DNA copy of the RNA genes
- Follows the lysogenic pathway
- Usually infects animal cells

Ex. HIV, influenza, some cancer causing viruses

Hard to create vaccines for these viruses

