

NAME _____

DISEASE

BACKGROUND INFORMATION: A disease that is spread from one organism to another is a communicable disease. Communicable diseases are caused by agents such as viruses, bacteria, protists and fungi. They are spread through water and air, on food, by contact with contaminated objects, and animals like fleas, rats and mosquitoes. Some of the most dangerous diseases are spread through sexual contact.

Your immune system is a group of defenses that your body has to fight disease. It is made up of cells, tissues, organs and body systems that fight bacteria, viruses, harmful chemicals and cancer cells.

When your body fights disease, it is really battling chemicals or proteins that do not belong in the body. These chemicals or proteins are called antigens. An antibody is a substance made by the body to fight the antigen. Antibodies bind up with specific antigens, making them harmless. Antibodies help your body build immunity two ways: actively and passively. Active immunity happens when you get sick and your body has to make antibodies in response to the disease causing antigens. The antibodies stay in your blood and keep out the same antigens if you are every exposed to them again. This is why you usually can not get some diseases twice.

Another way to get active immunity to a specific disease is to have a vaccination. A vaccine gives you active immunity against a disease with out having actually get sick first.

Passive immunity occurs when antibodies, which have been produced elsewhere, are put into your body. It does not last as long as active immunity. Newborn babies have passive immunity. The mother's antibodies were passed to the baby through the blood. The babies lose these antibodies in a few months. Vaccinations that require booster shots are examples of passive immunity.

Noncommunicable diseases are those that are not spread from one person to another. You can't catch allergies, genetic disorders, cancer, life-style diseases or chemical imbalances such as diabetes, from another person.

Chronic diseases are those that last a long time. Some can be cured, some can't. Chronic diseases may result from organs that do not function correctly, contact with harmful chemicals, or an unhealthy lifestyle.

QUESTION: Can what we eat cause disease?

MATERIALS:

Fresh milk	Sour milk	Yogurt	Liquid from sour cream that is past its expiration date
Methylene blue	Eyedropper	4 test tubes	Beaker
Warm water	Mineral oil		

5. Bacteria reproduce every 20 minutes. If you did not have an immune system to fight of these bacteria you would be invaded by thousands of bacteria very quickly.

Complete the chart to see how quickly bacteria can spread.

Time	Number of Bacteria
0 hours 0 minutes	
20 minutes	
40 minutes	
1 hour 0 minutes	
1 hour 20 minutes	
1 hour 40 minutes	
2 hours	
2 hours 20 minutes	
2 hours 40 minutes	
3 hours	
3 hours 20 minutes	
3 hours 40 minutes	

Graph this data. Remember TAILS & DRY MIX