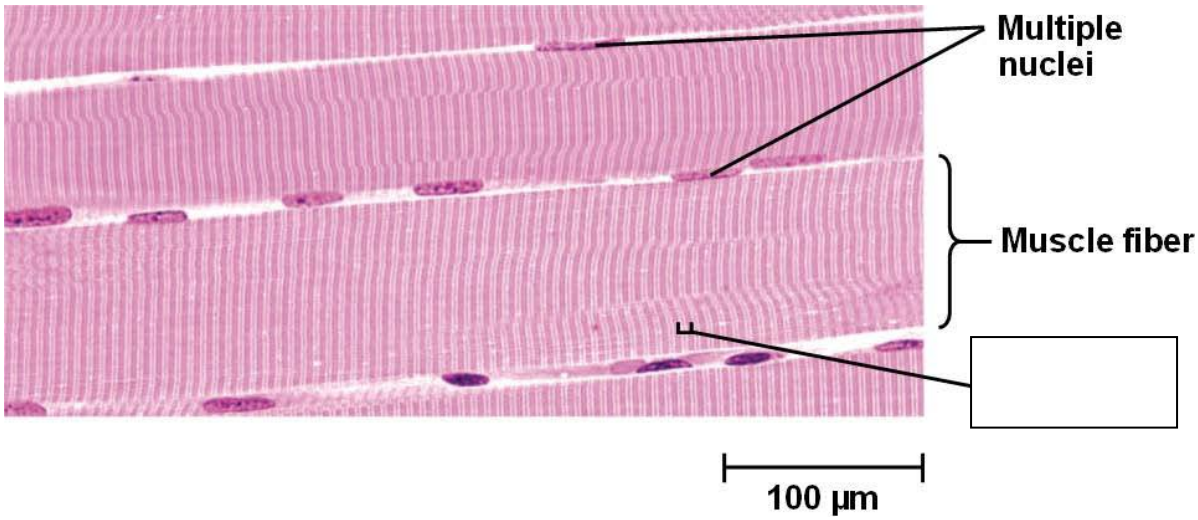
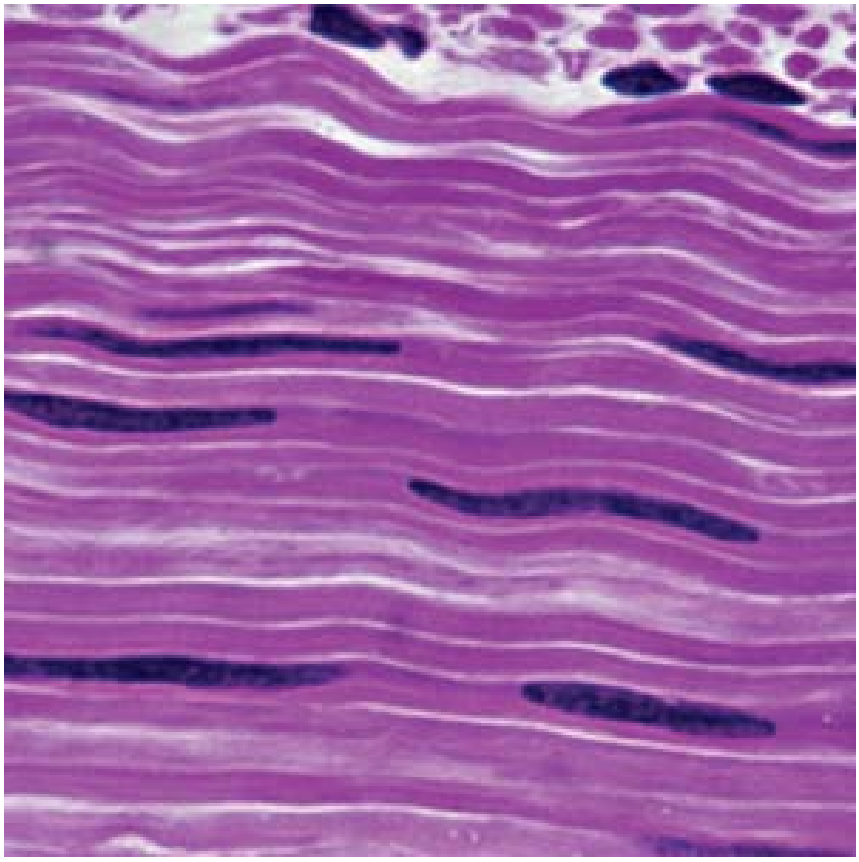
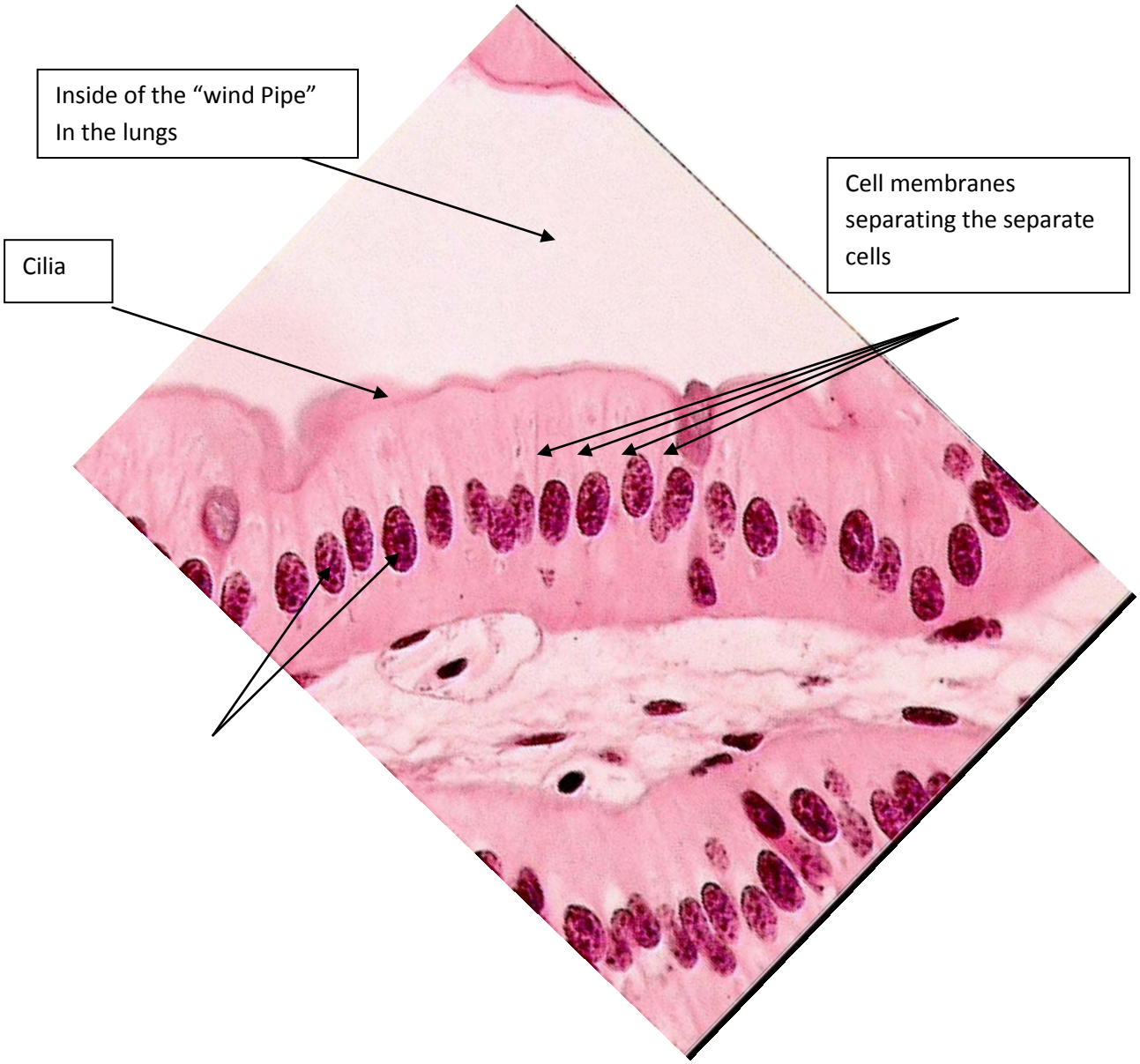


Skeletal Muscle Cells showing multiple Nuclei (nucleus). These are single muscle cells and they are very long. They are made mostly of protein fibers and of course the proteins are made from the instructions from the muscle cells DNA. The nucleus and other organelles are forced to the outside of the cell to make room for all of the muscle protein fibers. These muscle cells need constant energy and they need even more energy if a person exercises and requires more. Thus these cells have an enormous amount of Mitochondria to supply the energy.



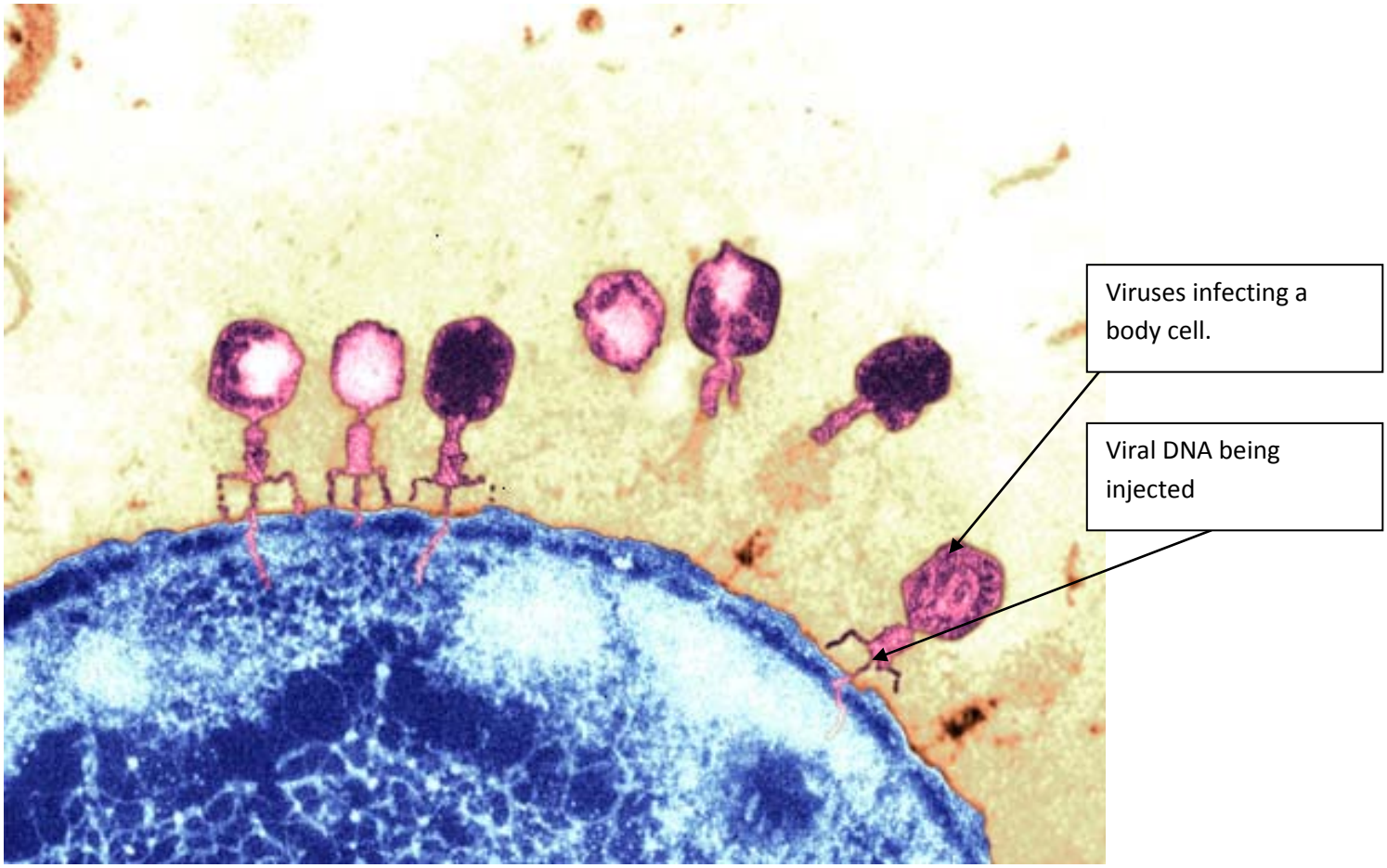
This is cardiac (heart muscle) smooth muscle. It is stacked on top of each other with the darker visible nuclei smashed kind of flat. This muscle works ALL THE TIME and must have a constant energy supply!

SIMPLE COLUMNAR EPITHELIAL CELLS of the LUNG



These are cells that line the trachea (wind pipe) in the lungs and out to the mouth. To the left you see a single cell with Cilia lining the top. Above you see the cells as they are found stuck together to form a barrier for protection of the wind pipe. The cilia move to get junk out of the lungs. You can see the dark black nucleus in the cells

VIRUSES on a BODY CELL



The virus will insert its own DNA and it will take over the organelles of the cell to make more viruses. This makes you sick when you get overtaken by too many viruses. They literally take over your cells "machinery" for making proteins for their use and make more virus parts. They then destroy your cells when they break out to infect other cells. Many people don't realize than many times when you get sick it is because your cells are actually the ones getting sick. Your white blood cells will be called in to kill your cells that are infected and this gets rid of the viruses.

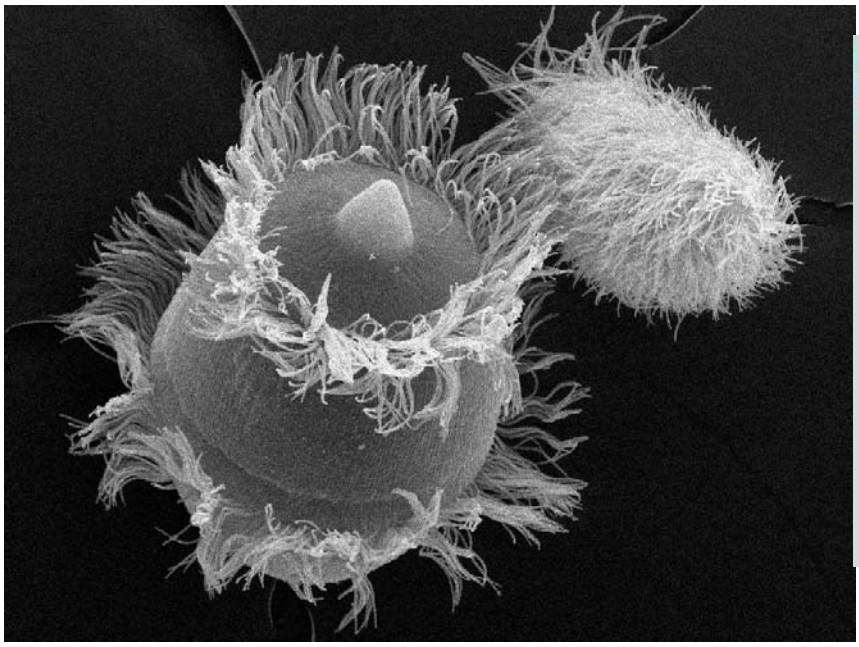
Does it look like something out of a science fiction movie?

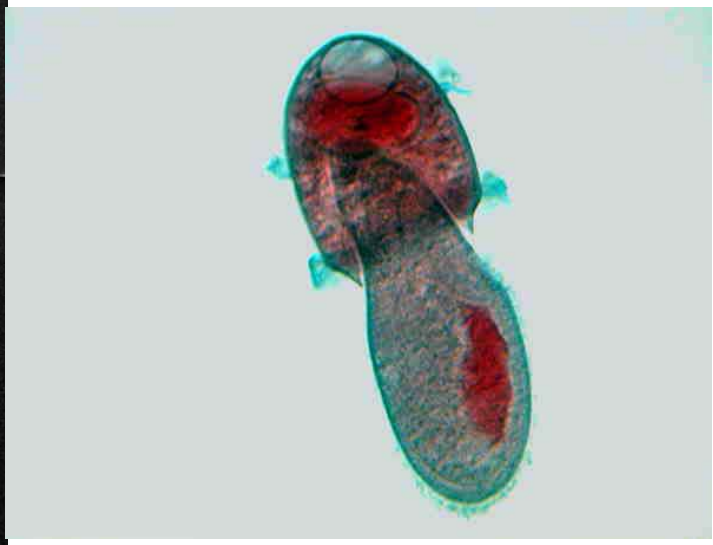
Cell becoming DINNER for another Cell

SIDE: Here it is predator/prey at the cellular (microscopic) level. The paramecium is a prey to many single celled organisms. These are both single celled EUKARYOTES. You can see the cilia on both cells. This is how they move around in the fluid they live in.

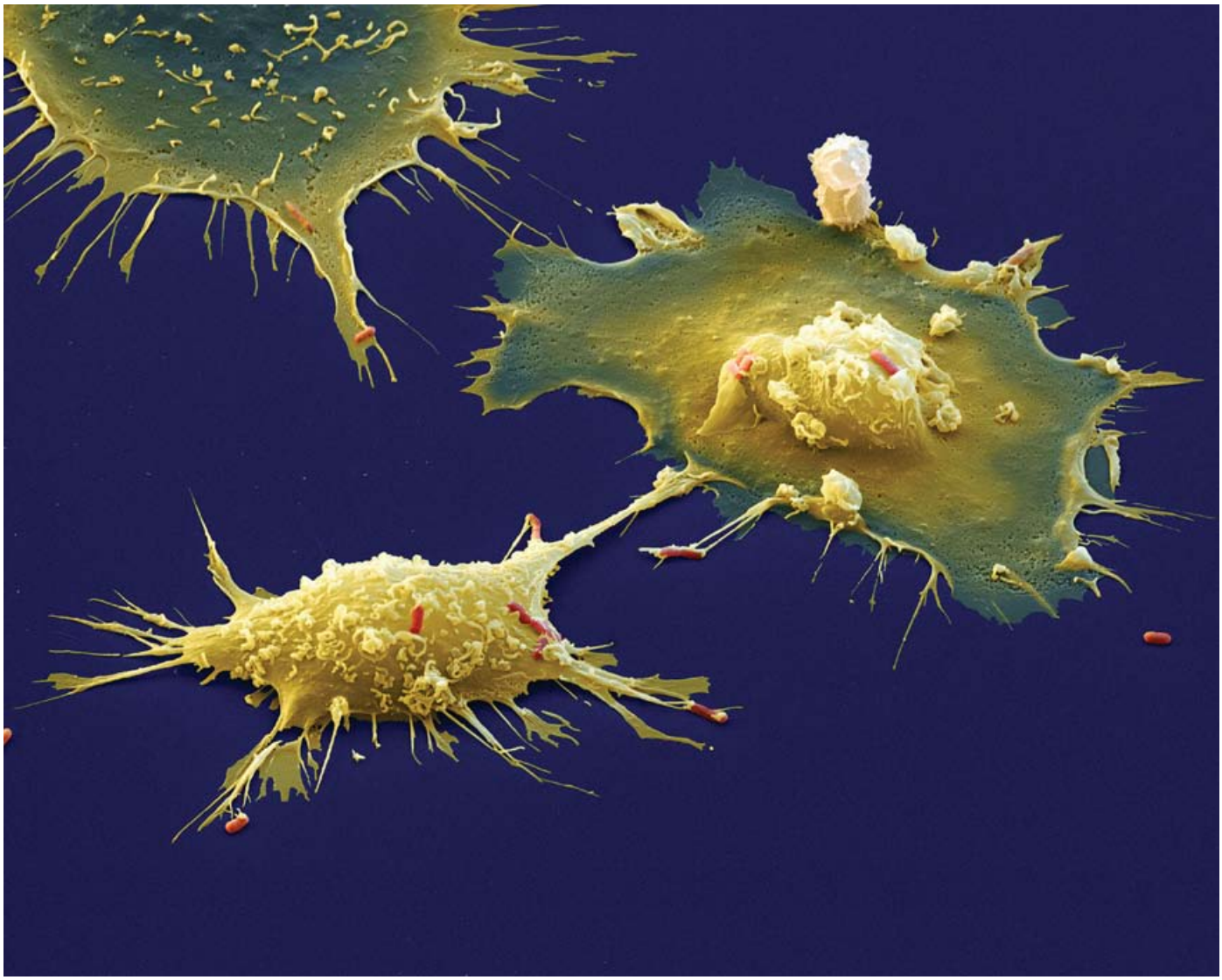
BELOW LEFT: The same thing as above but viewed through an electron microscope.

BELOW RIGHT: Viewed through using a compound microscope.



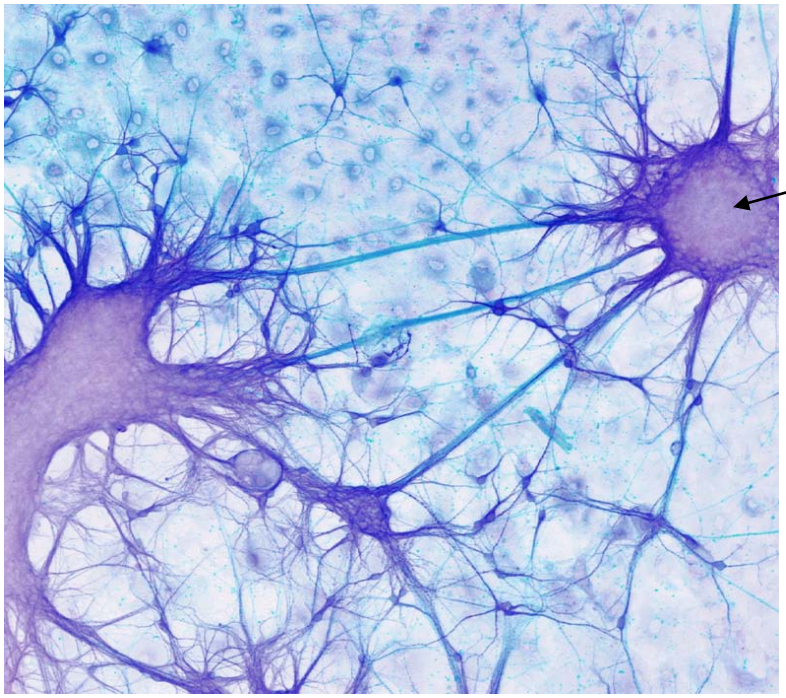


Cell becoming DINNER for another Cell…. Continued



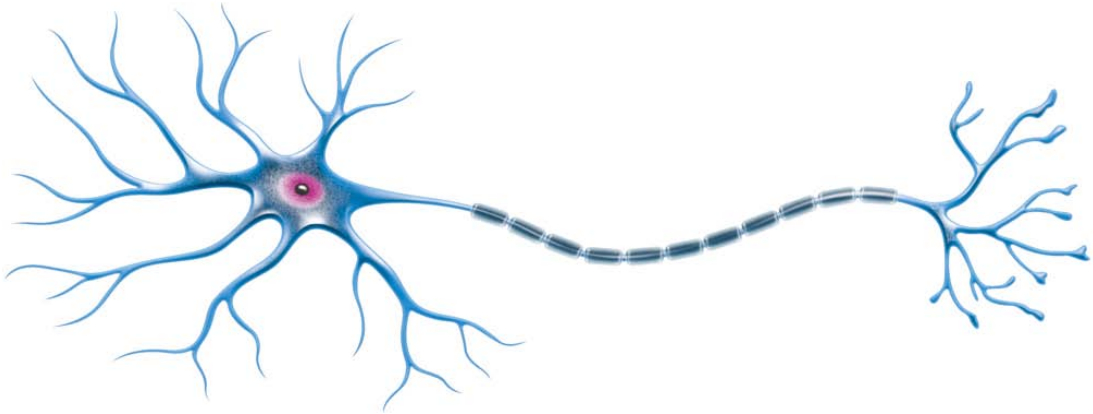
This is basically the same thing except that here are your white blood cells (macrophages) eating very small rod shaped bacteria that could make you sick. Your body will call in the macrophages when it finds a cell that it doesn't recognize like the bacteria below

NERVE CELLS ARE REALLY FUNKY!



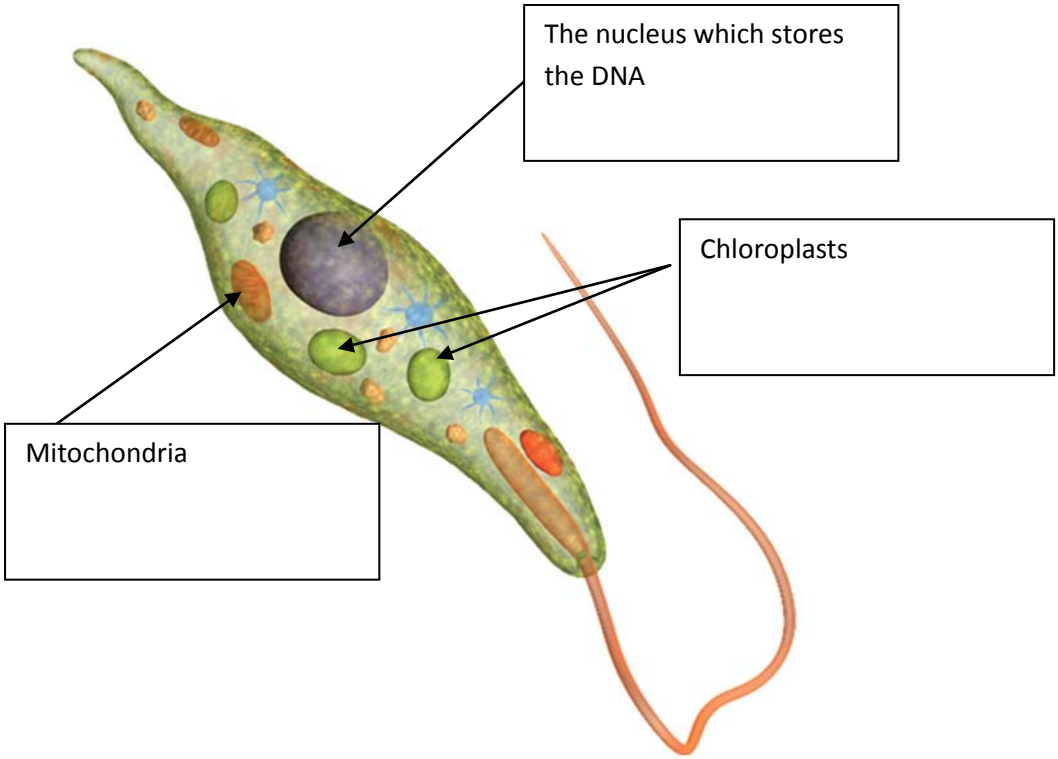
This part of the nerve cell is the cell body. This is where the nucleus and other organelles like the mitochondria etc. are located. The fibers are extentions of the cells where impulses are sent.

Left: here you see nerve cells that are basically connected to other nerve cells. This is how they communicate to send nerve impulses from body to your brain and then back to your body so that you feel things like pain.



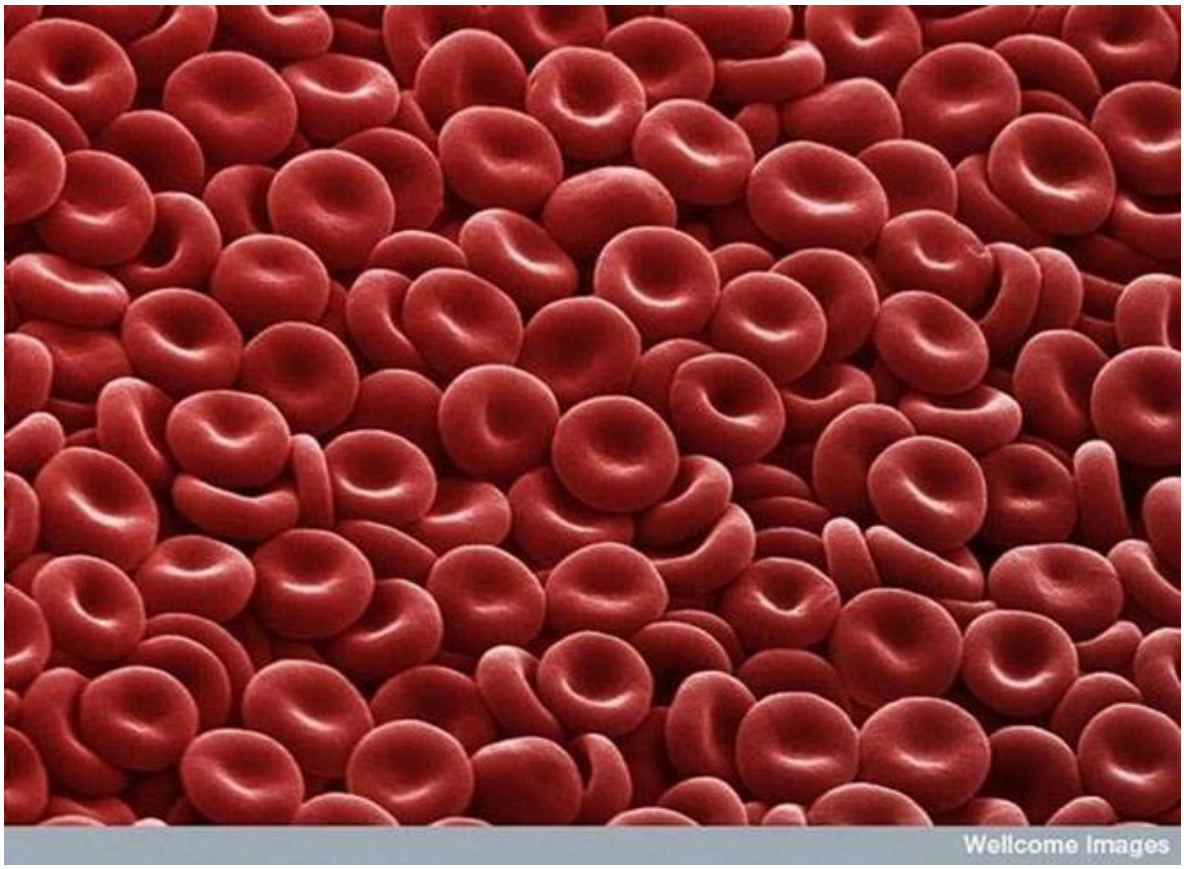
Here is an artist drawing of the nerve cell with the cell body and the dendrite portion where the impulses travel.

The EUGLENA has it ALL!!



This is a euglena, single celled organism, with a very long flagella that it uses for movement. This euglena has visible mitochondria and it also has visible chloroplasts. You can see the nucleus and other organelles as well.

BLOOD CELLS LOOK LIKE HARD CANDY I LIKE TO EAT



Here we see a whole bunch of Red Blood Cells. These cells have once again been made to serve a distinct function. Mature Red Blook Cells have no nucleus, thus they have no DNA. So you may ask, “how do they perform the functions without the DNA?” Well I will tell you. They make a bunch of big important proteins called Hemoglobin that attach to OXYGEN and transport it throughout your body. After they make enough of the protein they lose their nucleus and other organelles and focus only on transporting oxygen. They don’t need the nucleus to transport oxygen and like many other parts of the body. If you don’t need it, get rid of it!!

The RBC protein Hemoglobin uses IRON molecules to attract OXYGEN. Thus you need iron in your diet to make Hemoglobin. People who are ANEMIC have low iron and are often very tired and have no energy.

For a helpful animation on this process, you can also visit:

http://education-portal.com/academy/lesson/circulatory-system-iv-red-blood-cells.html

THESE BACTERIA HELP YOU MORE THAN YOU THINK

These are Lactobacillus bacteria that live symbiotically in your intestines. You better know what is meant by the term “symbiotically” (symbiosis). These bacteria help to break down food in your intestine so you can absorb the food. They also produce many B vitamins that you use for other functions in your body. The bacteria in return are given a nice, moist, and warm place to live. You have many symbiotic bacteria that live in your body.