

## The Cell

The Cell can be likened to a big city. It has all the resources needed to run smoothly, dozens of power stations, transportation system, sophisticated communications systems, garbage disposal system, manufacturing plants, importing and exporting of goods, defense system and much more.

Keep in mind that all these systems fit into a small little cell which requires a good microscope to even see, and even better microscope to peep inside the walls of the cell. Cells vary in size, from as large as an ostrich egg, to so small that a million cells could comfortably fit on the head of a pin.

The cell is regarded as the basic element of life. The human body consists of an estimated 60 trillion cells. Cells participate in everything we do, from lifting an object, to writing, to dreaming, to thinking...different cells are called into action with everything we do in our daily lives.

If we take a rod cell in one of our eyes as example, the task of this rod cell is to catch faint light (for instance from a star). The rod cell simplifies this information, changes it to an electrical signal and sends it to the brain. If enough signals reach the brain, the eye would “see” the star.

Since there are so many cells in our body, all performing their own unique tasks, the requirement for electricity is enormous. To generate this, every cell has hundreds and hundreds of, what is called *mitochondria*, little power stations that burn sugar or fuel and produce electricity. In this chemical process, a substance called adenosine triphosphate (ATP) is synthesized. ATP is the universal power source for every living thing on this planet – from a blade of grass, to the fish swimming in the deepest depths of the ocean, to man.

Our bodies are in continuous need of energy. Sleeping, our bodies continue, working tirelessly, burning up ATP to keep the body warm, keep the heart pumping, digesting... The breakdown – and building – of ATP is constant.

Maybe the biggest wonder amongst cells is the female egg. Once fertilized, this single cell divides over and over, until we have a baby consisting of two trillion cells, give or take a few.

Leave aside the wonder of how this single cell multiplies, what is absolutely inconceivable is the amount of information stored within one such egg. This tiny fragment of life contains the information on constructing a complex chemical plant, the liver. It knows what color the skin must be, the texture of the skin, when to stop growth to the fingers, where the nails must grow, body size, color of the eyes, hair, everything. It even has the information on future intellectual capability, diseases this person may be susceptible to, and the general appearance of the person.

Protecting the internal environment of the cell, it has a membrane roughly 0.0000001 millimeter thick. This membrane acts as border control, allowing in the good, and keeping out undesirables. It also controls the internal environment of the cell, maintaining the correct balance of salts, organic materials, water and other substances.

This membrane has a very sophisticated recognition system to be able to allow certain substance entry, and others not.

To think how 60 trillion cells can work together mastering tasks with ease the world's best chemists can only dream about, is a mystery. It is a wonder. Maybe we can learn from our own body on how to work together and live in harmony.

**Resource:**

I am Joe's Body – J.D. Ratcliff  
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[www.wikipedia.org](http://www.wikipedia.org)