THE CELLS

(Collated by Michelle Wilkinson www.movingnaturally.co.uk)

The human body is a collection of atoms (carbon, hydrogen and oxygen etc) which come together to make molecules such as sugars, proteins, oils and DNA (deoxyribonucleic acid). These molecules are arranged to form a cell with their own copy of DNA code.

The body is made up of billions of tiny living cells.

There are different kinds of human cells with related functions. A muscle cell contracts, a nerve cell transfers electron-chemical signals while a podocyte kidney cell is like those found in an octopus.

Cells can reproduce, exchange nutrients and waste materials, metabolise and respond to the internal and external environment.

Bacteria and algae have a single-layered outer membrane while most living cells are double-layered membrane organisms.

The inner membrane layer looks internally to the inside of the organism while the outer membrane layer looks to the external world outside the organism.

A cell is a microcosm of the individual human-self.

Central to the cell is the nucleus which holds our DNA (the individual gene inheritance).

Red blood cells do not have a nucleus but a bag of haemoglobin that transports oxygen around the body.

Within the cell cytoplasm is a vicious fluid containing 70-80 percent water and a variety of molecules.

Microvilli (finger-like projections) extend from the outer cell membrane and by dynamically undulating increases the absorptive area of the cell providing a mechanism for receiving and ejecting matter.

Mitochondria is an enzyme system producing energy for cell operations. They are the cell's power station.

Cells vary in their rate of reproduction while some skin cells reproduce through cell division daily, a nerve cell may remain for a lifetime and heal slowly if at all.

Most cells stay stationary apart from red and white blood cells.

Each cell in the body has its own innate intelligence, its own sense of presence and own unique life process.

When each cell is present, self-aware and in potential communication with every other cell we may perceive or experience intuition.

Before cell division or cellular activity, the cell is in a state of being itself, at rest and simply breathing.

The outer cellular layer of respiration occurs through the lungs with the outer world of air.

The intermediate layer of cellular respiration takes place in the blood circulation where products of internal and external respiration are transported.

The internal cellular respiration is the ebb and flow of fluids passing through cellular membranes causing the cells to continually expand and contract slightly.

Two-thirds of water lies within cells (intercellular fluid) while one-third of water lies between them (extracellular or interstitial fluid) creating an internal bodily sea.

A collection of similar cells in structure and function is called a tissue. For example, bone cells form the bone tissue of our skeletal system.