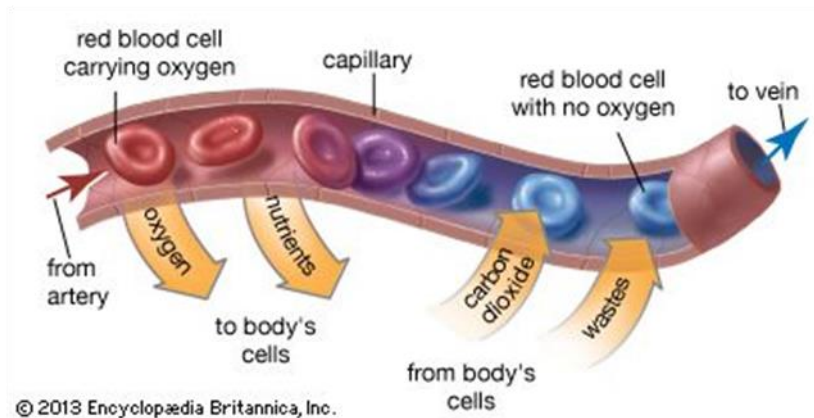


Elemental Physiology

By Dr. Derek Conte

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Last month, we finished our article with a question: “What is the most vital action of the body to preserve life on the most basic and elemental level?” Let’s explore the question.

Why do we take a breath? Why does the heart pump? Why is blood carried around the body in a continuous loop? Why do the teeth, salivary glands, stomach, pancreas and liver crush, churn, emulsify and chemically break down food (fats, carbs, proteins) into tiny molecules to make this food-energy available to the body? What foods are these? Oxygen and nutrients.

Why do the tiniest vessels in the body, the capillaries, leak? (Yes, capillaries “leak”). They leak the oxygen and nutrients from the digested food into every part of the body. How do they leak? Capillaries are like a fishnet stocking...porous but structured. They are so narrow that red blood cells have to line up in a column to slowly pass through. There are so many capillaries in the body that if you lined them up end-to-end they could stretch around the world four times.

Red blood cells have a special shape, like a life-saver. Flat around the edges and thin in the middle. This bi-concave shape allows for oxygen, nutrients and fresh fluids to easily pass through the “fishnet stocking” and flow to the cells to be fed. On their return they pick up carbon dioxide and old, toxic fluids to be refreshed by the heart and lungs. The “groceries” are delivered and the “trash” is taken away...all in one trip. How brilliantly efficient the body is!

So what is the primary goal of the body at the most elemental level? The answer is...to feed the cell...all cells...every single cell in the body...trillions of them. Cells make up tissues. Tissues make up organs. Organs make up organ systems and organ systems make up a whole, living being. There are many different types of cells and they all must be fed. They must all be fed or die.

Capillaries have muscular control over amount of blood flow through them depending on hormonal signals, temperature and emotional state. This is a normal part of maintaining homeostasis (normal regulation). More blood is kept in the core structures if it is cold out by shunting it away from the arms and legs to prevent hypothermia, a dangerous state.

However, nasal decongestants, cold medicines, smoking, drinking coffee and eating very salty foods will also promote restriction of capillary flow and higher blood pressure. This in turn reduces oxygen and nutrition to the cells, removing less carbon dioxide and toxic fluids. Fear, anger, worry or any long-term psychological/physiological stress act the same way on the vessels and lead to the same symptoms, including chronic health problems and organic disease.

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