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R.E.A.C.T.

All living creatures must adapt and “REACT” to their environment, which is always changing.

This presentation will discuss how our cells and our bodies actually adapt.

1. Cell anatomy
2. Mechanisms of adaptation
3. Redox science basics
4. Practical solutions

Cell Anatomy = Human Anatomy

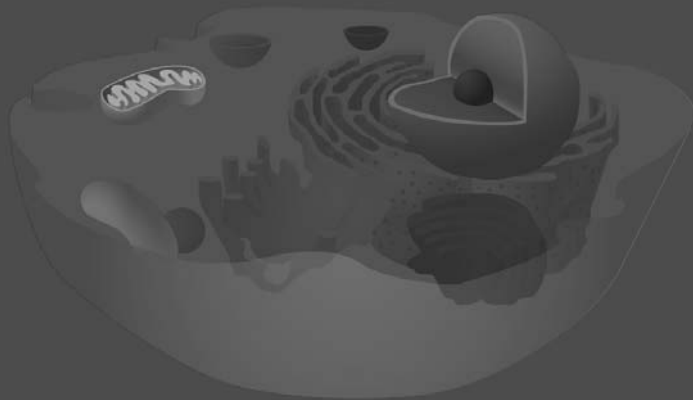
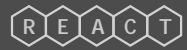
- Cell Membrane = Kidney
- Nucleus = Brain
- Endoplasmic Reticulum = Liver
- Mitochondrion = Lung
- Vacuole = Colon
- Lysosome = Stomach
- Golgi Apparatus = Blood Vessels



R E A C T



Rest
Nucleus / Mitochondrion





Central Nervous System

- Astrocytes are highly sophisticated cells, but slow to repair.
- Sensitive to toxic exposure.
- Brain has extra antioxidants and increased blood flow.
- Consumes 20% of our oxygen but only accounts for 2% of our body weight.
- Sleep repolarizes brain cells.
- Cell membrane integrity is critical to this process.



Mitochondria are critical in activating the REPAIR process by producing **REDOX molecules** during the natural process of "cellular respiration" or the Krebs Cycle.

Food is converted into cellular energy (ATP).

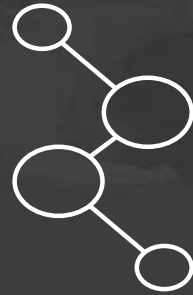
REDOX molecules are a critical product of this cycle.



REDOX molecules are primarily
comprised of 3 atoms:

Hydrogen, Oxygen, and Chloride

REDOX molecules are 2-4 atoms in size.



Redox Molecules

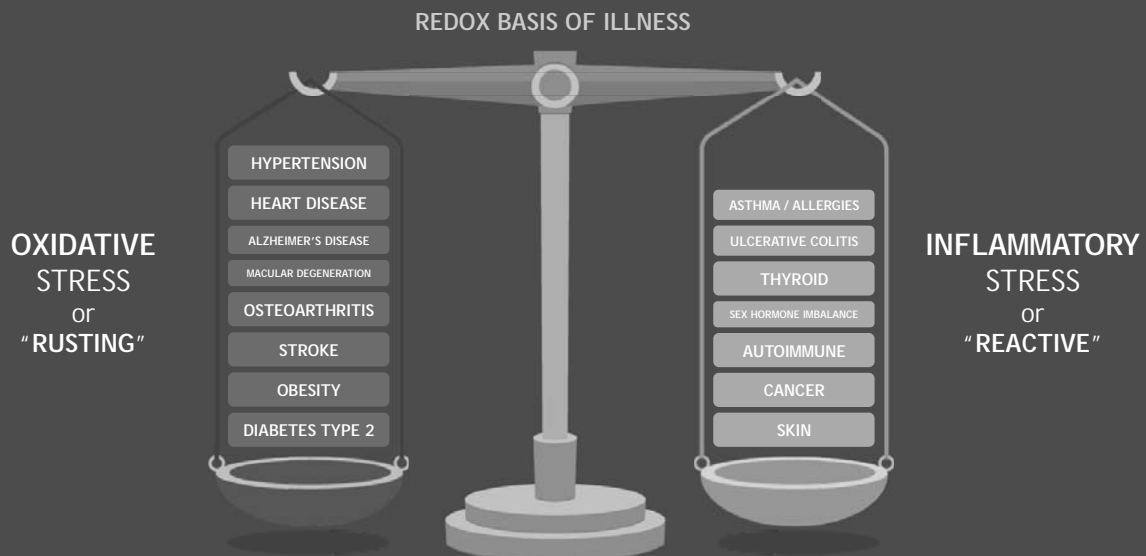
1. Critical catalysts for every chemical reaction in cells.
2. Primary mode of cellular communication in and between cells.



There are 2 categories of action for REDOX molecules:

1. Activate efficiency of antioxidant molecules
 - Stop oxidative stress
 - Block cellular rust
2. Facilitate cellular communication
 - Balance our tendency to have inflammation problems

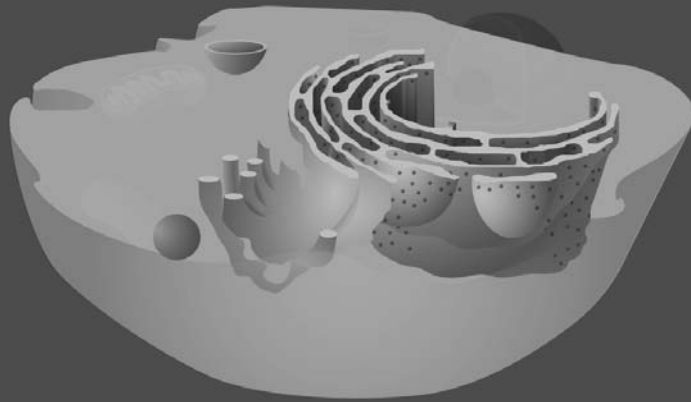
All health problems align according to these 2 categories of actions as well.





Eat

Vacuoles / Endoplasmic Reticulum / Cell Membrane



REACT



80% of our food should be vegetables and fruits
20% everything else

Vegetables, fruits, legumes, nuts and lean meats shift the bacterial population dramatically. These bacteria metabolize food to **create energy, not store fat**. Inflammation is reduced as well.

Probiotics and **REDOX MOLECULES** can be helpful to cultivate the right bacteria.





Action

Mitochondria / Golgi Apparatus / Cell Membrane



REACT



The nucleus processes the new information and adapts genetically.

Oxygen is better assimilated as cells move about, and likewise, waste is released properly to maintain homeostasis.

REDOX molecules are critical in this step. The doorways in the cell membrane are hinged on REDOX chemical reactions. REDOX molecules allow the nucleus to guide and direct genetic expressions.

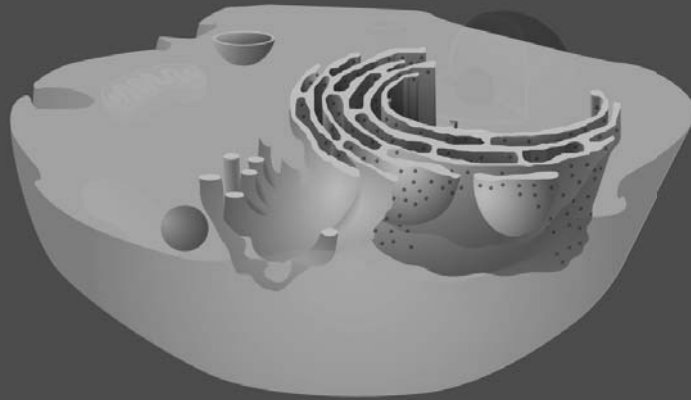
REDOX molecules communicate messages between cells which allow for the critical feedback needed for cells to adapt to their environment.





Cleanse

Vacuoles / Endoplasmic Reticulum / Cell Membrane



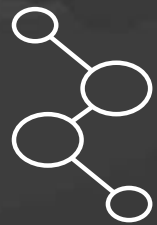
REACT

Cleaning up the byproducts of metabolism is critical to life

Waste is toxic, at certain levels, and must be released as part of maintaining balance in cells. **Vacuoles** engulf toxins and export the contents from the cell. They are located near the cell membrane and are intimately connected to it. Their location allows the proper export of waste.

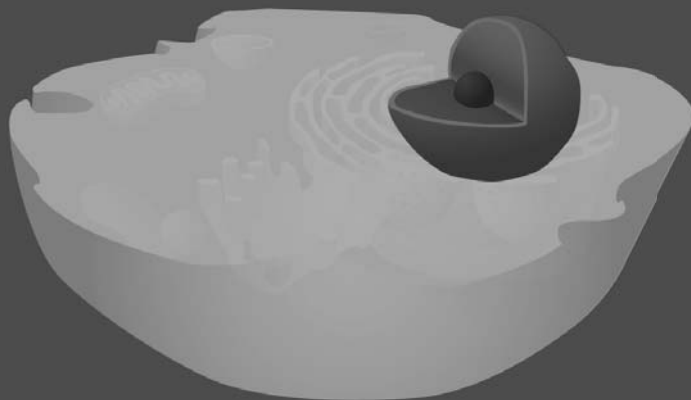
REDOX molecules play a key role with neutralizing toxins

REDOX molecules **ACTIVATE ANTIOXIDANTS** (Glutathione, SOD) efficiency. Antioxidants directly neutralize toxins and likewise free radicals.



Talk

Cell Membrane / Nucleus / Nuclear Membrane





REDOX molecules are the messenger molecules of this critical communication

They send "texts" that direct the proper interactions.

The first signal of the immune system to report a threat is a REDOX molecule. It is secreted by a cell which initiates the inflammatory response from a WBC who **got that message**.



Our job

1. Humans are social creatures. We must have interaction with others to have joy.
2. Our thoughts create beliefs when we think them over and over. Those beliefs will lead to create deep feelings, which usually are the impulse to initiate **ACTION**. Change your thoughts and you can change your actions indirectly.
3. Communication is dynamic and requires more listening than talking.
4. We learn best from communication. Then we leverage this new knowledge and gain insight that aids in our survival. Aging prematurely happens when we live alone. Proper social interactions can extend quality and quantity of life by **>10%**.

REACT



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*Welcome to the REDOX DOC website!
The information on this site is designed to help you understand THE KEY ROLE REDOX REACTIONS PLAY with regard to your body's vital processes. Understanding how you can change the way your body responds to stresses and other factors can enable you to effectively improve your health and vitality.*

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