

Hydrogen Peroxide

Bio-oxidative therapies have many different components. Of central importance is hydrogen peroxide. Naturally occurring hydrogen peroxide is used by our immune system to oxidize foreign invaders(phagocytosis); parasites, viruses, bacteria, yeast/fungus. "...The cells in your body that fight infection, called granulocytes, produce hydrogen peroxide as a first line of defense against *every single type of invading organism – parasites, viruses, bacteria and yeast. No other chemical compound comes even close to hydrogen peroxide* in its importance to life on this earth...." (31)

In fact, both ozone and vitamin C lead to the internal production of hydrogen peroxide and this is part of their efficacy to stimulate our healing process. In the presence of catalase hydrogen peroxide is broken down into water and oxygen. This is the familiar bubbling response that one sees when they put hydrogen peroxide on an open wound to cleanse it.

Catalase is not found uniformly in all animal species. Dogs and chickens, for instance, have low levels of catalase and thus cannot breakdown hydrogen peroxide. This will result in pulmonary edema and methemoglobinemia (form of hemoglobin that does not bind oxygen and thus causes a form of anemia)and probably death. Therefore any studies on any species without catalase in abundance like human beings with show detrimental results to IV hydrogen peroxide usage. As will the improper administration, dosage or form of hydrogen peroxide used. (32)

Dr. Farr describes the biological effects of iv hydrogen peroxide therapy as 'oxidative detoxification". (33) Hydrogen peroxide does the following in the body;

1. Involved in protein, carbohydrate, fat, vitamin and mineral metabolisms.
2. It acts like insulin in that aids in the transport of sugar throughout the body.
3. In the presence of coenzyme-Q10 it creates an 'intracellular thermogenesis" or a cellular warming effect that is essential to life. Affects and controls inflammation by the production of prostaglandins. (31)
4. It is involved in any metabolic pathway which utilize oxidases, peroxidases, cyclo-oxygenase, lipoxygenase, myeloperoxidase, catalase and probably many other enzymes Dr. Farr's research demonstrates that hydrogen peroxide stimulates oxidative enzymes which increases the metabolic rate. Intravenous use rapidly relieves allergenic reactions, influenza symptoms, chronic systemic candidiasis, acute viral reactions as a result of the oxidation of antigenic substances and regulation of immune system functions. (35)
5. Stimulation of oxidative enzymes increases the rate of oxidation in the body .This is not because it produces small quantities of oxygen. (35)
6. It oxidizes or burns up toxins in the body.

“....Metabolic and Physiological Effects of Peroxide Healing

1. Pulmonary
 - a. Increased oxygenation (1) - Increased oxygenation up to 12 atmospheres have been reported in tissue following both the intravenous and intra-arterial infusions of hydrogen peroxide.
 - b. Alveolar debridement (2) - Alveolar debridement occurs due to the action of oxygen, generated by intravenous hydrogen peroxide, as it diffuses from the pulmonary veins into the alveolar space. The retrograde diffusing oxygen undermines mucous or other accumulated materials in the alveolus, promoting expectoration.

2. Metabolic Rate
 - a. Hormonal Effect regulated by the action of Hydrogen Peroxide
 - i. Iodination of thyroglobin (3)
 - ii. Production of thyronine (3)
 - iii. Progesterone production (4)
 - iv. Inhibition of bioamines (5); dopamine, noradrenalin and serotonin
 - v. Prostaglandin synthesis (6,7,8)
 - vi. Dopamine metabolism (9)
 - vii. Regulates Reticulum Calcium Transport (10)

 - b. Stimulation of Oxidative Enzyme System
 - i. Increases GSH (glutathione) oxidation to GSSG (glutathione peroxidase, which increase ATP production (11)
 - ii. Activates Hexose Monophosphate Shunt (produces NADPH and pentose) (12)
 - iii. Alters Na-KATPase activity... (**sodium-potassium pump**) is an **enzyme** located in the **plasma membrane** (specifically an electrogenic **transmembrane ATPase**). It is found in the plasma membrane of virtually every **human cell** and is common to all cellular **life**. It helps maintain **cell potential** and regulate cellular **volume**. In order to maintain the cell potential, cells must keep a low concentration of **sodium** ions and high levels of **potassium** ions within the cell (**intracellular**). Outside cells (**extracellular**), there are high concentrations of sodium and low concentrations of potassium, so **diffusion** occurs through **ion channels** in the plasma membrane. In order to keep the appropriate concentrations, the sodium-potassium pump pumps sodium out and potassium in through **active transport**.....Wikipedia....(13)
 - iv. Regulates cellular (14) and mitochondrial (15) membrane transport
 - v. Regulates thermogenic control (16)

3. Vascular Response

a. Vasodilation

- i. Dilation of peripheral vessels (17)
- ii. Dilation of coronary vessels (18)
- iii. Aortic strip relaxation response (19)
- iv. Cerebral arteriolar dilation (20,21)
- v. Pulmonary arterial relaxation (22)

- b. Vasoconstriction-Essential Hypertension effect (17)- Patients with severe essential hypertension have been reported to have a vasoconstriction response to infusions instead of vasodilation, which usually occurs

4. Glucose Utilization

- a. Hydrogen Peroxide mimics insulin (23)
- b. Increase glycogen production from glucose (24)
- c. Type II Diabetes Mellitus stabilized with Hydrogen Peroxide infusions (25)

5. Granulocyte Response

- a. Depressed granulocytes after treatment, then rebound measured after 24 hours (17)
- b. Secondary resistance to peroxide after exposure (8)
- c. Alteration of T4/T-8 ratio with increase of T-4 helper cells (26)

6. Immune response

- a. Stimulates Monocytes (27)
- b. Stimulates T-Helper cells (8)
- c. Stimulates Gamma Interferon production (28)
- d. Responsible for immunoregulation (28)
- e. Decreases B-cell activity (29)
- f. Regulates inflammatory response (30).....”

This information and the references that follow come from Douglass, Wm, “Hydrogen Peroxide: Medical Miracle, 2003,pg.151-171. Many thanks are given to Dr. Douglass for this masterpiece of scientific literature that spreads the word about Bio-Oxidative Therapies and the contributions therein of men like Dr. Charles Farr.

Over the last hundred years many pioneers have experimented with the different ways in which to administer hydrogen peroxide to their patients.

“.....Dr. Edward C. Rosenow, author of 450 published medical papers and associate at the Mayo Clinic for over 60 years . . . proved [more than] 70 years ago (1914) that bacteria could be found consistently in the lymph nodes that drain joints (J.A.M.A., April 11, 1914). He was probably the first scientist to postulate that H₂O₂ would help arthritis because of its ability to supply oxygen to oxygen-hating organisms causing arthritis (Streptococcus viridans).....”. (33a)

This is one of the controversial uses of hydrogen peroxide. Dr. Rosenow was recommending ten drops of three percent H₂O₂ three times a day. Remember hydrogen peroxide is a powerful oxidizer which will react with anything unless it is neutralized to water and oxygen by catalase.

....Hydrogen peroxide reacts with fatty acids, ascorbate and iron to form hydroxyl radicals. Hydroxyl free radicals are probably one of the major factors in many degenerative diseases, including cancer. Much of the body contains enzymes (catalase) that quickly break up hydrogen peroxide into water and oxygen. But the stomach and intestinal tract contain very little of these protective enzymes, so ulceration of the lining could theoretically develop. Ulceration can lead to hyperplasia, and hyperplasia to cancer.....(33)

Footnotes

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Links

www.athritistrust.org

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http://www.garynull.com/Documents/Arthritis/Hydrogen_Peroxide_Therapy.htm

<http://educate-yourself.org/cancer/benefitsofhydrogenperoxide17jul03.shtml>

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<http://www.curezone.org/diseases/cancer/h2o2.asp>

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