

HISTORY AND THEORY OF LAYERED DRIED BLOOD ANALYSIS (OXIDATIVE STRESS TEST)

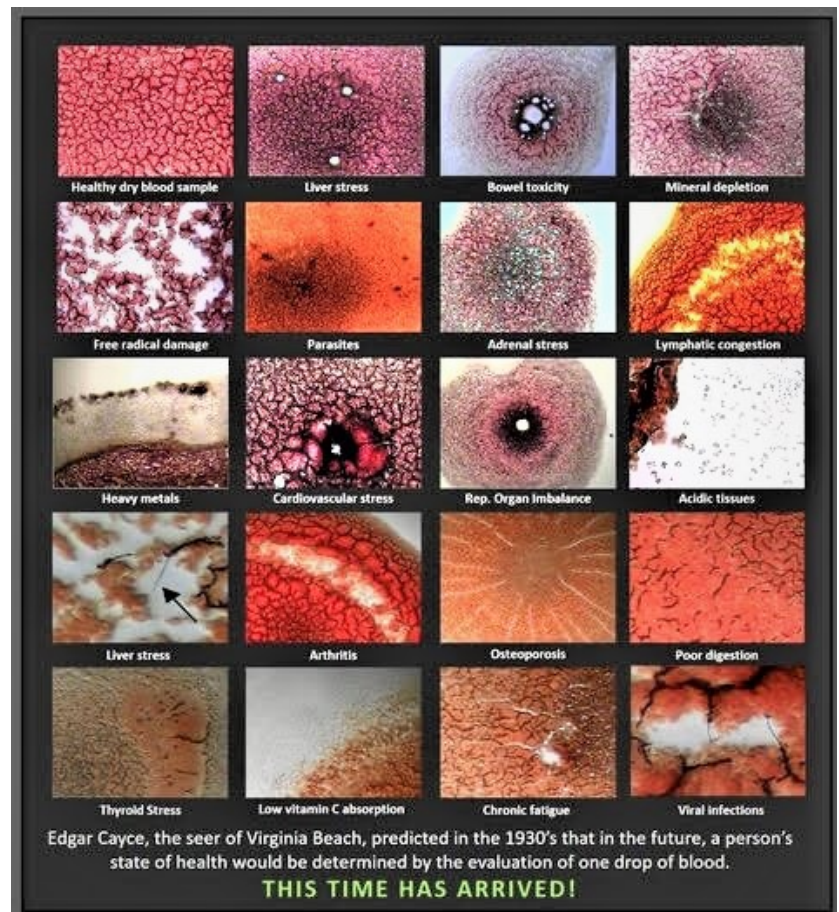
Layered dried blood analysis or oxidative stress test (OST) was developed in Europe in the 1920s and has since been used by medical practitioners and naturopaths in many countries across the world. In the 1930s NATO physicians, Doctor Heitan and Doctor La Garde, introduced it to Doctor Bowlen, head of surgery at Massachusetts General Hospital in Boston in the 1930s and later to Robert Bradford (of the American Biologics Hospital in Tijuana, Mexico. For this reason, the test is also referred to as the HLB test (Heitan, La Garde, Bradford).

In essence, the layered dried blood test is an evaluation of a client's coagulation morphology. There is a very distinct difference between the layered dried blood sample of a healthy individual and that of a chronically ill person. The healthy sample is a solid mate of pinkish-red dried blood with a strong, well-interconnected fibrin network. In the presence of degeneration, toxins and other imbalances can be seen in the dried blood sample as white areas, called polymerised protein puddles (PPPs) and other abnormalities that may be indicative of certain systemic conditions.

As the blood dries on the slide, there is a natural centrifugal activity whereby the different elements in the blood spin out into rings, depending on their specific gravity. Organs near the centre of the body create light PPPs that don't spin out very far, whereas heavier PPPs are created by lymph and skin conditions that spin out around the outside of the layer.

With dry blood analysis we are able to assess oxidative stress by looking at a number of anomalies. We are also able to see the extent of oxidative damage in the live blood samples. We look at the level of oxidative stress in the system by looking at clotting patterns in the dry blood samples.

WHAT ARE THE MAIN CAUSES OF OXIDATIVE STRESS? Our cells can be compared to an apple that turns brown when exposed to air. Our cells can turn brown or "rust" when we breathe due to oxidative stress, this is a process caused by free radicals. Free radicals are unstable molecules that damage or "oxidise" cells throughout the body in a process called oxidative stress. Over time, oxidative stress can leave our cells and tissues unable to function properly.



Some specialists claim that free radicals can have serious consequences for our health. Free radicals are believed to contribute to disease, hardened arteries and wrinkles, they are often associated with the health problems that we experience with age. Avoiding the causes of free radicals and adopting a lifestyle that helps fight back against them can help safeguard health by preventing oxidative stress.

WHAT CAUSES FREE RADICALS? As we breathe, we can't help but make some free radicals, but many other factors in lifestyle and environment can also contribute to their production, for example:

- ✓ Excess calories, sugars and/or refined carbohydrates. Eating an excess of these foods cause our mitochondria to release more "exhaust," as they burn fuel from food for energy. This creates higher levels of free radicals.
- ✓ Exercising too much or too little. Exercise is an important part of any healthy lifestyle, but too much can increase oxidative stress in our bodies.
- ✓ Excessive alcohol consumption. Drinking alcohol increases cytokines levels, these are inflammatory molecules that are linked to oxidative stress.
- ✓ Exposure to tobacco smoke. Tobacco smoke contains toxic chemicals that lead to oxidative stress.
- ✓ Exposure to air pollutants. Industry and pollution increase oxidation in our bodies.
- ✓ Excessive stress. Stress increases inflammation, which further increases free radical production.
- ✓ Ionizing radiation. Exposure to x-rays, radon, cell phones and air travel can contribute to oxidative stress.

- ✓ Chargrilled foods. Hydrocarbons found in these foods can contribute to oxidative stress.
- ✓ Fungal toxins. Environmental moulds (often found in bathrooms and basements) and internal moulds and fungi related to the gut can produce toxins that increase oxidative stress.
- ✓ Poor liver and gut detoxification. The liver can become inflamed and produce more free radicals when it is overwhelmed with toxins from food or the environment, especially exposure to pesticides or mercury.
- ✓ Chronic infections. Hidden infections can contribute to oxidative stress.
- ✓ Lack of sleep. Sleep deprivation increases oxidation.

HOW CAN OXIDATIVE STRESS BE PREVENTED? Preventing oxidative stress can begin by avoiding the causes of free radicals above. Prevention of free radical formation and control of oxidative stress can also be improved by:

- ✓ Improving breathing and oxygenation. This can help flush out toxins, free radicals and inflammatory molecules.
- ✓ Eating foods that reduce oxidation. Eating foods that contain antioxidants including a diet full of many different colourful fruits and vegetables that contain antioxidants.
- ✓ Using herbs. Some herbs can help reduce oxidation include ginkgo, ginger, matcha green tea, milk thistle, grape seed extract, rosemary, turmeric.
- ✓ Supplements can be useful in curtailing free radical production and include: N-acetylcysteine - this can boost production of glutathione which is an important antioxidant and detoxifier. Alpha lipoic acid - an antioxidant that helps to improve energy production in the mitochondria. Coenzyme Q10 (CoQ10) - another antioxidant that is important for the mitochondria. NADH -this is important to the cycle of energy production in the mitochondria.