

HEALING WAVE



LIFE'S FREQUENCY

Using Pulsed Electro Magnetic Fields (PEMF) as Cellular Exercise Benefits

what-is-pemf ~ Cellular Electro-Physiology and the Benefits of Cellular Exercise

Our cells and all living things are direct current (DC) systems created by the movement of sodium and potassium ions in and out of cell membranes. Normal, healthy cells have an electrical charge of about -70 mV across the cell membrane. This electrical gradient is critical to the process of ion transport across the cell membrane and normal cell metabolism. Key features of cellular metabolism include the exchange of oxygen and nutrients for cellular waste, and ATP energy generation. These metabolic processes are almost always lacking in dysfunctional cells and improved as the cell membrane charge returns to normal.

Any challenge to the cell, such as oxygen/nutrient deficiency, toxicity, or inflammation can degrade the gradient from its optimal -70 mV. As the gradient falters, sodium is less efficiently pumped out of the cell, resulting in edema (fluid retention) and inflammation. As the gradient falls lower, oxygen delivery across the cell membrane into the interior of the cell is compromised. Without oxygen, the cell cannot generate ATP energy; the sodium-potassium ion pumping mechanism cannot be fueled, and the gradient falls further. A downward cycle of disordered cellular physiology will follow, which can ultimately lead to cell degeneration.

The electrical charge of inflamed cells causing pain changes to approximately +30 mV. When exposed to a pulsed magnetic field, these cells are changed to a charge of approximately -90mV alleviating pain in the process. Cells that are scarred or fibrotic with adhesions have a charge of approximately -15 mV. Due to the density of the cell tissue, change requires stronger pulsed magnetic fields to be able to restore them to the optimal -70 mV.

Degenerative or immune-compromised cells average -30 mV.

A state of wellness requires that our cells maintain an optimal electrochemical gradient of -70 mV. We know that the gradient is compromised in unhealthy cells. Research has shown that pulsed magnetic fields have a beneficial effect on the cell membrane's ability to regain its optimal electrochemical gradient which supports healthy cellular functions.

How does the pulsed magnetic field exercise the cells of living tissue without damaging them?

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The answer is in electro physiology. The PEMF technology used to restore damaged cellular structures, pump out toxins, and optimize cell performance without generating heat, ionizing radiation, or tissue damage. In essence, all cells exposed to a pulsed magnetic field are being exercised: expanded during peak exposure to the magnetic field and relaxed on the off phase. By increasing ion transport across the cell membrane, the pulsed magnetic field is creating bio-available energy that triggers a cascade of biochemical events inside the cell. PEMF actually excites and donates electrons as it passes through cells creating an electrical field. This donation of electrons reduces cellular chemistry with antioxidant benefits.

Who Can Benefit?

Everyone's cells need exercise. The stresses of everyday life, toxicity from pollutants, oxygen and nutrient deficiency have compromised our cellular biochemistry. We all can benefit from the kind of total body cellular exercise that pulsed electromagnetic field therapy can deliver. The benefit to areas of local cell dysfunction and energy deficiency that manifest in the experience of chronic pain can be demonstrated by the diminishment of pain following a session. Painful cells are energy deficient; thus they are low in oxygen, high in sodium, with a faltered electrochemical gradient. When we restore the gradient, the cell starts pumping out sodium, potassium enters the cell, the swelling resolves, oxygen starts flowing back in, and pain improves.

Maximizing Benefit

Cellular exercise and benefits will be obtained when the body is exercised by the pulsed magnetic field. We want the entire body to receive the benefits of the exercise for balanced results—a healthy you, not just you with less pain. Perceived benefits have been known to extend beyond the session itself. Optimal session frequency can be up to 2-3 times daily.

One session alone is not going to restore the cell, but your pain level may certainly lessen. It will start stimulating lymphatic vessels to pump and drain lymph fluid which supports immune health, lymphatic drainage and blood flow.

Time Needs to Be Invested to Normalize Cell Electrophysiology

The foundation of a long-term investment in your health should include the following fundamental philosophy: Optimize the electrical charge and related nutritional status of the cell; ensure that the cells get all the oxygen and hormonal support that they need; and exercise dysfunctional cells to aid in the removal of cellular toxins. If we support the cellular electrophysiology and biochemistry, energy generation will improve, the sodium-potassium pump will begin to function normally, the cell will thrive – and so will the suffering individual! This process takes time.

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In advanced conditions, the cells of the affected area are too far gone to take in adequate oxygen/nutrition, or the cells may be so toxic that they just can't generate the energy needed to restore the cell's electrical gradient.

In these situations, extensive pulsed magnetic cellular exercise is necessary to maximize results. Without bio-available energy compromised cells cannot correct themselves and the journey back to health is prolonged. Just as the application of a battery charger to your worn out, energy depleted car battery returns its charge to normal, recharging your cells when they are energy depleted is essential to their ability to function fully and requires an investment in time.

Risks

All cells exposed to a pulsed magnetic field are being mildly stretched and relaxed (exercised). In the first 10 minutes of exposure, oxygen content in the cells increases which can further stimulate the exit of toxins. Due to this, your body's response to the session may be the experience of mild side effects including but not limited to: nausea, lethargy, headaches, fatigue and muscle aches. For this reason, elderly, frail, acutely ill or sensitive individuals are advised to begin with an initial low intensity session with a maximum duration of 10 minutes.

As with starting any new exercise program, you may experience stiffness or discomfort due to cells being moved that are normally not active. Water is essential for the transport of many of these toxins for elimination. It is a good habit to drink plenty of pure water before and after exposure to the pulsed magnetic field to maintain optimal cellular hydration. Mildly alkaline, antioxidant rich water at a pH of 7-8 is recommended. Please drink plenty of water throughout the day.