

# OXICELL

## Reduce Inflammation and Oxidative Stress

### Benefits of this Product:

- Provides glutathione and superoxide dismutase in a metabolic cream
- Supplies powerful antioxidants into the blood stream via transdermal delivery

### Product Description:

OXICELL represents a significant breakthrough in the field of natural medicine, particularly in the area of antioxidant supplementation. OXICELL is a metabolic cream that transports a stabilized form of glutathione (GSH) and superoxide dismutase (SOD) into the bloodstream via transdermal liposomal delivery methods. The plasma markers of GSH and SOD are not raised when these are supplied orally; therefore, effective transport into the bloodstream via liposomal delivery as found in OXICELL is preferential.<sup>1</sup> The transdermal method of delivery, known as liposomal delivery, is one in which lipid spheres called liposomes surround GSH and SOD, transporting it through the skin until it reaches the blood supply.

Glutathione and superoxide dismutase are considered to be the most important antioxidants known to the human species. These antioxidants are vital for cellular health and protect the cell against oxygen radicals and mitochondrial oxidative stress. The status of glutathione is considered the most accurate single indicator of the health of the cell. Antioxidant levels become depleted in inflammatory and degenerative conditions and their depletions creates a vicious cycle of further oxidative stress and degeneration.<sup>2</sup> In addition to antioxidant depletion from oxidative stress, antioxidants like GSH and SOD become exhausted from exposure to everyday environmental chemicals and toxins, cigarette smoke, pharmaceutical drugs, exercise, inappropriate diet, blood sugar disorders, trauma and alcohol intake.<sup>3 4</sup>

Numerous health disorders and alterations in physiology have been associated with GSH and SOD depletion. GSH levels powerfully influence healthy immune functions and cellular signaling.<sup>5</sup> Research has shown that T and B-lymphocytes require adequate GSH for differentiation and cellular activation.<sup>6</sup> Numerous studies have shown the importance of GSH levels in immunomodulatory function and its central role in a healthy functioning immune system.<sup>7 8 9 10</sup> The importance of optimizing glutathione reserves in immune related conditions such cannot be overemphasized.

Neurodegenerative disorders have been associated with alteration in glutathione and antioxidant status. Since tissues of the nervous system are highly oxygenated and are composed of unsaturated fatty acids they are prone to lipid peroxidation in instances of GSH and SOD depletion. Research has shown dramatically low levels of glutathione in conditions such as Parkinson's and Alzheimer's.<sup>11 12</sup> Since glutathione and superoxide dismutase quench the lipid peroxidation process associated with neurodegeneration, its use in chronic neurological disorders seems imperative.

GSH and SOD are important substrates for hepatic detoxification. GSH is important for phase II conjugation and both SOD and GSH are important for phase I oxidation/reduction reactions. When hepatic reserves of glutathione become depleted detoxification potentials become

hindered and the body becomes more susceptible to exogenous and endogenous toxins.<sup>13</sup> Studies have shown that glutathione depletion contributes and is linked to liver disease, cirrhosis, hepatitis, fatty liver and alcohol-damaged liver.<sup>14 15 16 17</sup>

Antioxidants, particularly GSH and SOD should be considered in all patients with risk for cardiovascular disease. Atherosclerosis has been associated with decreased GSH peroxidase levels, oxidative stress and lipid peroxidation.<sup>18</sup> Exogenous glutathione has demonstrated the ability to reduce lipid peroxidation, optimize eicosanoid balance and ultimately protect the endothelium against damage.<sup>19 20</sup>

## Use of Product:

The use of glutathione and superoxide dismutase in **OXICELL**, which is a liposomal delivery, metabolic cream, is a breakthrough in antioxidant therapy. **OXICELL** should be considered in cases that require antioxidant therapy, such as inflammatory disorders (inflammatory bowel disease, tendonitis, gastritis, etc), blood sugar disorders (insulin resistance, diabetes, metabolic syndrome), degenerative joint diseases (osteoarthritis, rheumatoid arthritis), osteoporosis, neurodegenerative disorders (Parkinson's, Alzheimer'), cardiovascular disease, immune deficient disorders, etc.

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<sup>5</sup> Fidelus RK. Glutathione and lymphocyte activation: a function of aging and auto-immune disease. *Immunology* 1987;61:503-508.

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<sup>15</sup> Shigesawa, et al. Significance of plasma glutathione determination of patients with alcohol and non-alcoholic liver disease. *J Gastroenterol Hepatol* 1992;7:7-11.

<sup>16</sup> Loguercio C, et al. Alteration of erythrocyte glutathione, cyteine, and glutathione synthetase in alcoholic and non-alcoholic cirrhosis. *Scan J Clin Lab Invest* 1992;52:207-213.

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<sup>18</sup> Stamler JS, Slivka A. Biological chemistry of thiols in the vasculature and in vascular related disease. *Nutr Revs* 1996;54:1-30.

<sup>19</sup> Buchanan MR, Brister SJ. Altering vessel wall fatty acid metabolism: a new strategy for antithrombotic treatment. *Sem Throm Hemostasis* 1993;19:149-57.

<sup>20</sup> Kidd PM. Cell membranes, endothelia, and atherosclerosis and the importance of dietary fatty acid balance. *Alternative Med Rev* 1996;1(3):148-167.