## The Fight Against Oxidative Stress and Inflammation: The Zinc Connection

Oxidative stress and inflammation are significant contributors to many age-related retinal eye diseases, including macular degeneration and diabetic retinopathy. The last two decades of health research have shown that oxidative stress causes chronic inflammation which in turn can lead to cancer, diabetes and cardiovascular disease.<sup>1</sup>

Oxidative stress occurs when there is an imbalance between free radicals (oxidative agents) and the antioxidant molecules that can neutralize them. If our antioxidant system is sufficiently effective, our health is protected against oxidative damage. Nutraceuticals derived from components found in fruits, vegetables and spices have been shown to enhance our oxidative defences and reduce chronic inflammation.<sup>1</sup>

Platinum Naturals in collaboration with the Vision Institute of Canada has developed an eye health supplement called Total Vision Care™ that provides strong antioxidant support to protect the retina.

The key ingredients in **Total Vision Care™** (TVC) are lutein and zeaxanthin, carotenoids found in dark green leafy vegetables. TVC contains 20mg of lutein (11.3mg free lutein) and 2.5mg of zeaxanthin. Lutein and zeaxanthin are fat soluble nutrients and so to enhance their absorption they are suspended in 405mg of triglyceride-form EPA/DHA fish oils. This also provides the additional anti-inflammatory benefits of omega-3s.

Research has shown that lutein supplementation increases macular pigment optical density eccentrically and that DHA results in central increases. Lutein and DHA may aid in prevention of age-related macular

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degeneration.<sup>2</sup> Studies have also shown that lutein supplementation may protect visual function in diabetes.<sup>3</sup>

Other important antioxidant agents in TVC are vitamins A, C and E and alpha-lipoic acid, a potent antioxidant that enhances the recycling of vitamins C and E. It might surprise some, but one of the most important ingredients in the TVC formula is the inclusion of 10mg of zinc. There is mounting evidence that, owing to its antioxidant properties, zinc protects cells from the damaging effects of oxidative stress.<sup>4</sup>

Elderly patients are at a risk of nutritional zinc deficiency. This is in part because physiological functions naturally decline with age, which may influence absorption and metabolism.<sup>5</sup>

In fact, many studies confirm a decrease in zinc levels as we age. These studies indicate a wide prevalence of marginal zinc deficiency in elderly people which can affect immune function. Oral zinc supplementation demonstrates the potential to improve immunity and efficiently reduce chronic inflammation in the elderly.<sup>6</sup>

The antioxidant properties of zinc are believed to be one of the possible mechanisms in the role it plays in preventing diabetic retinopathy. It has been suggested that zinc might prevent neovascularization by inhibiting the gene expression of vascular endothelial growth factor. Due to the negative effect of zinc deficiency on the eye, zinc supplementation may help prevent diabetic retinopathy.<sup>7</sup>

The recommended RDA for zinc is 11mg/day for adult men and 8mg/day for adult women. Total Vision Care™ contains 10mg of zinc citrate, which is a safe and effective amount for all genotypes.<sup>8</sup> This comprehensive formula can help ensure that adults over 55 years are meeting their daily needs for this essential mineral while supporting their total vision and eye health.









