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The effects of B-sitosterol (BSS) and B-sitosterol glucoside (BSSG) mixture on selected immune parameters of marathon runners: inhibition of post marathon immune suppression and inflammation

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Abstract

A pilot study was undertaken to investigate the effects of the intake of capsules containing the plant sterols and sterolins (BSS:BSSG mixture) on selected immune parameters of volunteers participating in an ultra-marathon in Cape Town, South Africa. Those runners having received active capsules (n=9) showed less neutrophilia, lymphopenia and leukocytosis when compared to their counterparts having received placebo capsules (n=8): the placebo treated individuals showed significant increases in their total white blood cell numbers as well as in their neutrophils (p=0.03 and 0.03 respectively). Furthermore, statistically significant increases within lymphocyte subsets were observed in the runners having received the active capsules: CD3+ cells increased (p=0.02) as did CD4+ cells (p=0.03). In parallel, the BSS:BSSG capsules decreased the plasma level of IL6 in the runners using the active capsules (p=0.08) and significantly decreased the cortisol: DHEAs ratio (p=0.03), suggesting that these volunteers had less of an inflammatory response and were less immune suppressed during the post-marathon recovery period. These findings justify further investigations into the use of the phytosterols to prevent the subtle immunosuppression associated with excessive physical stress.

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