

Yeast-Derived Beta 1,3/1,6 Glucan, Upper Respiratory Tract Infection and Innate Immunity in Older Adults

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Abstract:

Objective: This study aimed to test whether yeast-derived beta 1,3/1,6 glucan can prevent the occurrence or reduce the severity of upper respiratory tract infection (URTI) and modulate innate immune responses during winter months in community dwelling older adults.

Methods: This was a double-blind placebo-controlled trial of community-dwelling adults aged 50 to 70 years randomised to once daily beta 1,3/1,6 glucan (Wellmune 250 mg daily; n=50) or identical placebo capsule (n=50) over 90 days during winter. URTI episodes were medically-confirmed. Symptom severity was recorded via self-reported daily Wisconsin Upper Respiratory Tract Infection Score 21. Blood and saliva samples were collected at days 0, 45 and 90 for measurements of innate immune parameters.

Results: Forty-nine participants completed the trial in each group. Supplementation was well-tolerated. A total of 45 URTIs were confirmed, 28 in the placebo group and 17 in the Wellmune group (odds ratio 0.55 (95% CI 0.24, 1.26); p=0.149). There was a strong trend for Wellmune to decrease the number of symptom days (p=0.067). Symptom severity was not significantly different between groups. Compared to the placebo group, lipopolysaccharide-stimulated blood from participants in the Wellmune group showed an increase in interferon-gamma concentration from baseline at day 45 (p=0.016) and smaller decreases in monokine induced by interferon-gamma concentration from baseline at days 45 and 90 (p=0.032 and 0.046). No difference was seen in serum or non-stimulated blood cytokines and chemokines or in salivary IgA.

Conclusion: Daily oral beta 1,3/1,6 glucan may protect against URTIs and reduce the duration of URTI symptoms once infected in older people. This may be linked to effects on innate immune function. Larger studies are needed to confirm the benefits of beta 1,3/1,6 glucan on URTIs in older people.