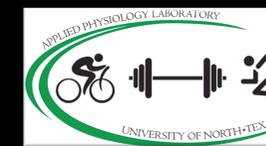




# Baker's Yeast Beta Glucan Supplementation Improves Mucosal Immunity: Implications for Preventing Lost Training Days?

BK McFarlin, AL Henning, AS Venable, JN Best Sampson, DW Hill, and JL Vingren

Applied Physiology Laboratory; University of North Texas; Denton, Texas  
Appliedphysiologylab.unt.edu



## BACKGROUND

Strenuous exercise is known to suppress mucosal immunity for up to 24-h, which can increase the risk of developing an upper respiratory tract infection. Such infections result in lost practice and performance time, which has implications for training effectiveness. While many dietary interventions have been used to combat post-exercise immune suppression, most have been ineffective. Recent evidence has suggested that a commercially-available form of Baker's Yeast  $\beta$ -glucan (Wellmune®) may be useful as an immune-booster.

## PURPOSE

The purpose of this study was to determine the effect 10-d of supplementation with baker's yeast  $\beta$ -glucan (BG) prior to a bout of immune suppressive exercise on mucosal immunity during recovery from exercise in sedentary subjects.

## EXPERIMENTAL DESIGN

- **IRB:** Procedures approved by the UNT IRB and informed consent was obtained from subjects.
- **Experimental Design:** Double-blind, crossover design with young men and women (18-35 y) completing two conditions ( $\beta$ -glucan and placebo) in a random, counterbalanced order.

## SUBJECTS

### Consort Diagram

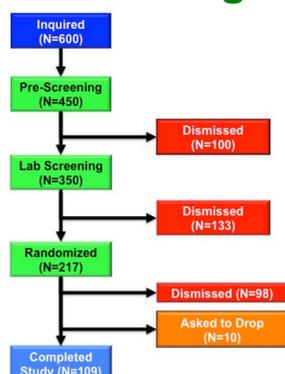


Table 1: Subject Characteristics

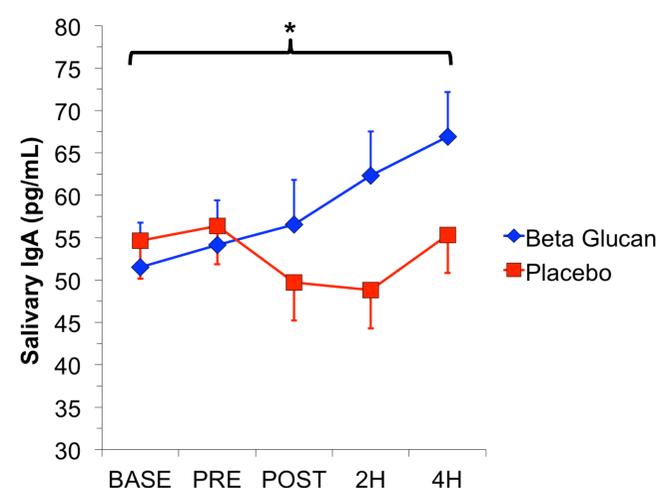
Characteristic	Men (N=50)	Women (N=59)
% Minority (%)	35%	39%
Age (y)	22 ± 3	21 ± 3
Height (m)	1.74 ± 0.04	1.63 ± 0.07
Weight (kg)	76.98 ± 2.04	62.90 ± 1.74
BMI (kg/m <sup>2</sup> )	24.74 ± 0.40	23.29 ± 0.53
VO <sub>2</sub> max (ml/kg/min)	38.3 ± 0.74	36.50 ± 0.74
% Body Fat (%)	17.6 ± 0.9	30.8 ± 1.0

Values represent the mean ± SEM

## METHODS

- **Dietary Treatment:** Baker's Yeast  $\beta$ -glucan (250 mg/d; Wellmune®) or Placebo (Rice Flour).
- **Supplement Duration:** 10-d prior to exercise bout
- **Exercise Bout:** Intervals of treadmill walking (8-min; 2.5-3.0 MPH) and jogging (7-min; 4.0-4.5 MPH) totaling 90-min of exercise
- **Saliva Samples Collection:** Using salivette at Baseline (prior to supplement), PRE (prior to exercise), POST, 2H, and 4H (during recovery from exercise).
- **Salivary IgA Measurement:** Milliplex Bead-based assay (EMD Millipore)
- **Statistical:** RM-ANOVA with contrasts for linearity completed in SPSS (v.22)

## RESULTS



## SUMMARY

- We found a significant positive linear change for **Beta Glucan** that did not occur in **Placebo**
- This finding is consistent with improved mucosal immunity post-exercise. Post hoc testing revealed that the greatest improvement occurred at 2H
- These findings are consistent with previously published findings from our laboratory

## PRACTICAL APPLICATIONS

1. We have demonstrated that supplementation with Baker's Yeast  $\beta$ -glucan improves mucosal immunity in individual's low fitness level.
2. Combined with previous work demonstrating effectiveness in fit subjects, Baker's Yeast  $\beta$ -glucan appears effective in a variety of individuals.
3. Improving mucosal immunity reduces susceptibility to upper respiratory tract infection (URTI) during periods of intense training.
4. Supplementation with Baker's Yeast  $\beta$ -glucan represents one way to boost mucosal immunity, thus limiting the loss of training days due to URTI.

Funded:

**BIOThERA**  
the immune health company

