

## Dietary and health aspects in men exceeding the recommended doses of dietary supplements: a cross-sectional study.



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### INTRODUCTION & AIM

Adult men increasingly engage in training to enhance performance and muscle hypertrophy, accompanied by rising dietary supplements use.

The aim of this study was to analyse the association between diet, nutritional status, and exercise capacity in men with recreational physical activity who were exceeding (eDS) and not exceeding the recommended doses of dietary supplements use (non-eDS).

### METHOD

The study involved **170 men with recreational physical activity, aged 19–40**. Data were collected on the men's lifestyle and the type and amount of dietary supplements used.

**Diet quality** was determined using two predefined diet quality scores, the pro-healthy diet index (pHDI) and the non-healthy diet index (nHDI), based on data collected with the food frequency questionnaire (KomPAN®). The energy and nutritional value of a participant's diet were determined based on a 3-day food record.

**Body composition** was determined, as was the maximum oxygen consumption ( $VO_2\max$ ) through the spiroergometric exercise test with exhaust gas analysis.

Blood levels of 33 nutritional markers were assessed against age-specific reference values.

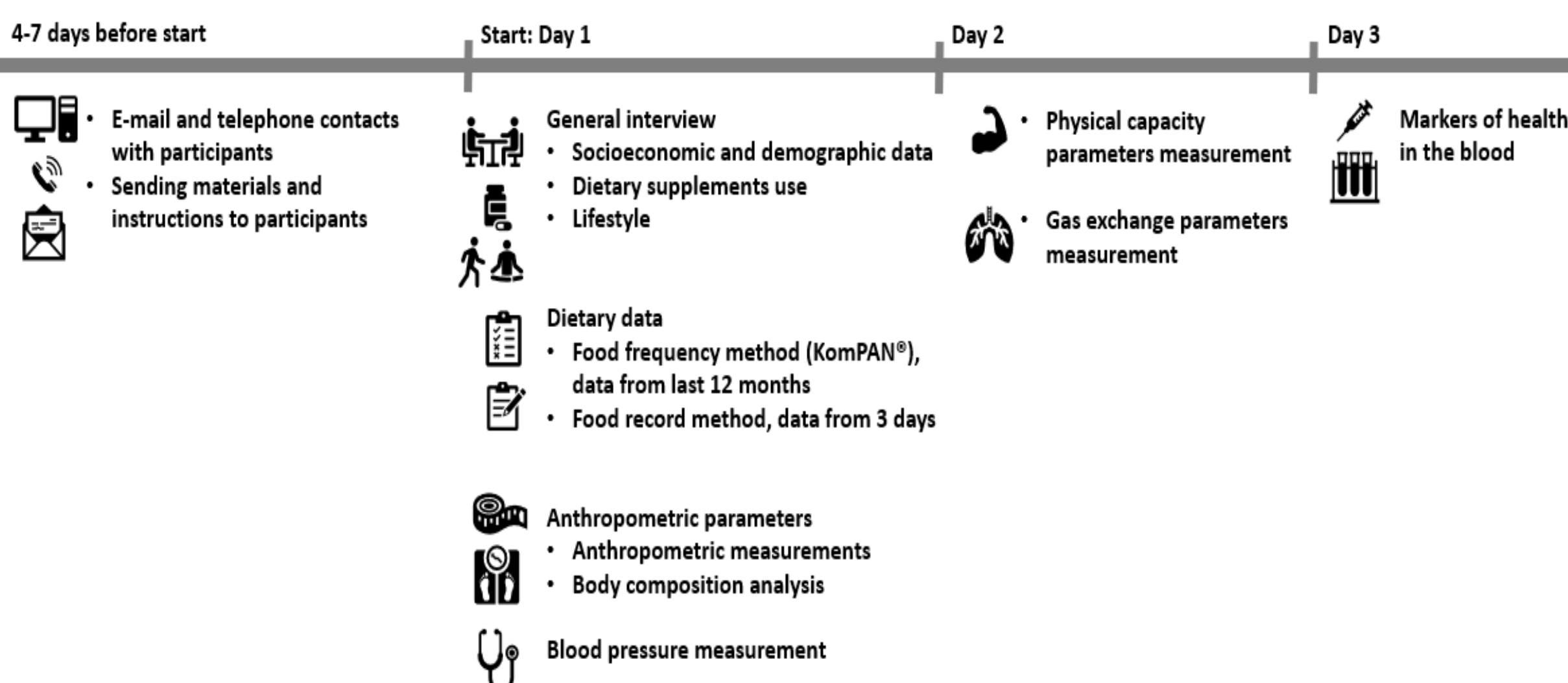
### RESULTS & DISCUSSION

**Dietary supplements were used** by 69% of the men ( $n=117$ ), 10% of whom declared exceeding the recommended dose.

The diets of men in the eDS group ( $n=12$ ) compared to men in the non-eDS group ( $n=105$ ) **had a higher average content of 6 nutrients** (by 21–62%) out of 31: eicosapentaenoic acid, docosahexaenoic acid, cholesterol, vitamins D, B12, and B2.

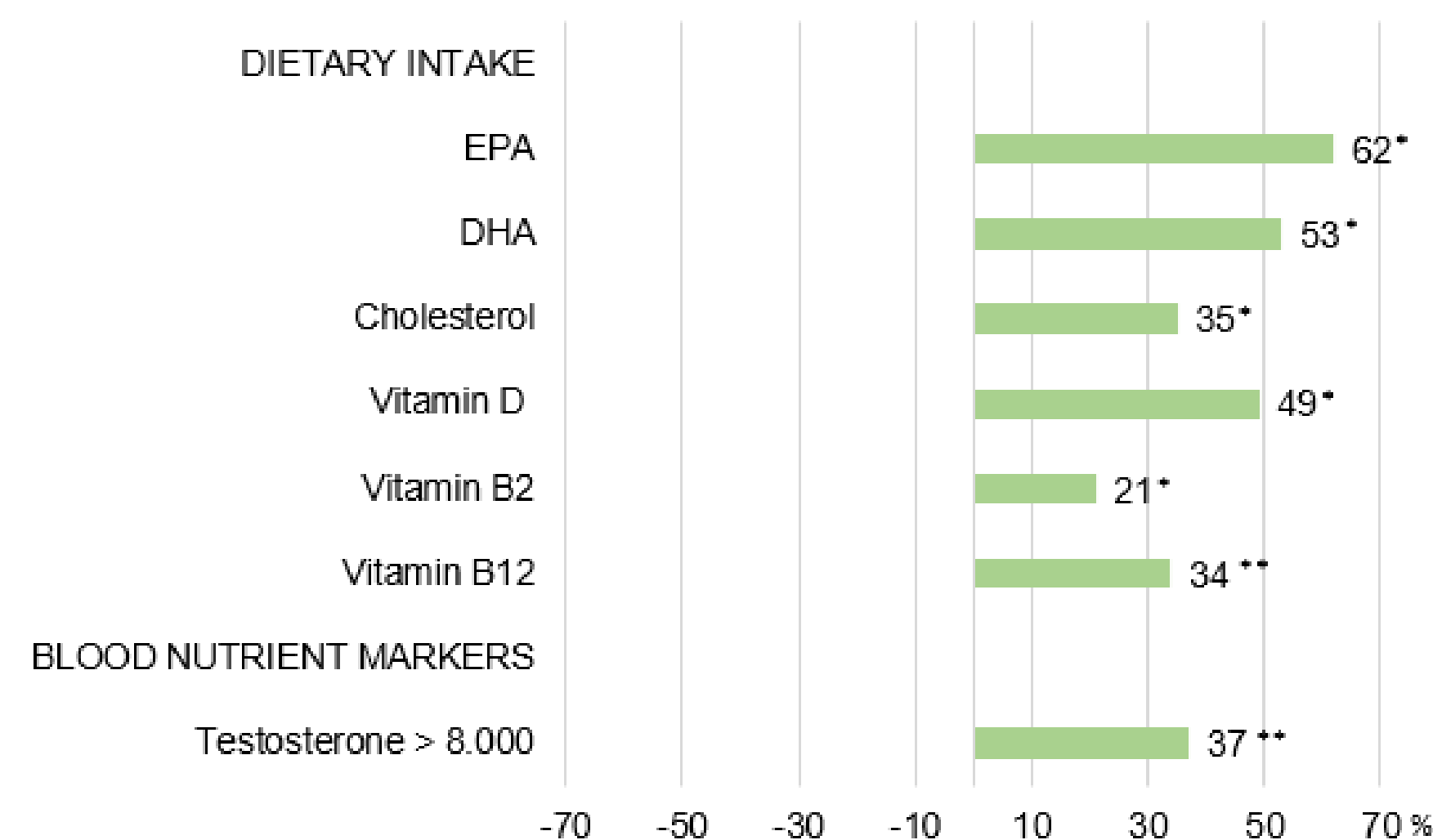
**Between men in the eDS and non-eDS group, there were no differences in** pHDI (mean±standard deviation:  $29.15\pm11.60$  vs  $27.40\pm16.90$  points, respectively), nHDI ( $16.75\pm14.50$  vs  $15.36\pm11.07$  points), the frequency of consumption of 23 out of 24 food groups, BMI ( $26.0\pm2.9$  vs  $25.0\pm2.6$  kg/m<sup>2</sup>), waist-to-hip ratio ( $0.48\pm0.05$  vs  $0.48\pm0.04$ ), body fat content ( $17.1\pm6.8$  vs  $18.5\pm5.5$  %body mass),  $VO_2\max$  ( $46.9\pm8.7$  vs  $44.4\pm8.3$  ml/kg/min), and mean blood nutrient markers, **except for testosterone distribution** above 8,000 ng/ml (by 37%;  $p=0.004$ ).

**Significant relative differences (%) between men eDS ( $n=12$ ) and non-eDS ( $n=105$ ) dietary supplements**  
\*  $p<0.05$  \*\* $p<0.01$



### CONCLUSION

Exceeding the recommended doses of dietary supplements by men engaging in recreational physical activity was not associated with any benefits for their nutritional status and exercise capacity; therefore, it was not justified.



**LESS** than not exceeding **MORE** than not exceeding