

**Conclusions:** Supplementation with carbohydrates influences the TH1/TH2 balance towards a Th1 response after exercise in simulated altitude of 4500m, possibly mediated by increased HSP-70.

**Keywords: (maximum 5):** CARBOHYDRATE, HSP-70, EXERCISE, HYPOXIA AND TH1/TH2

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## 149/608. Inter- and Intra-Laboratory Variability of Glycemic and Insulinemic Indexes

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**Introduction:** Glycemic Index (GI) concept has been developed by Jenkins et al in 1981 to rank carbohydrate (CHO)-containing foods.

**Objectives:** This study aimed at quantifying Inter- and Intra-laboratory variability on GI and II after standardisation of protocols in 3 different labs.

**Method / Design:** At least 15 healthy normal-weight subjects aged 18-45 years and HOMA-IR lower than 1.7 were recruited in each lab. They underwent 9 sessions to test 3 times a glucose solution or 6 different cereal products. Glycemia and Insulinemia were quantified at 15, 30, 45, 60, 90 and 120 minutes. The three selected labs used the validated GI method (WHO/FAO 1998, Brouns et al. 2005, ISO2010). In addition, glucose, insulin kits and subject selection were standardised between labs to reduce their variability.

**Results:** GI values for the different products ranged from  $44 \pm 15$  to  $92 \pm 29$ . For a same product, the largest difference between 2 labs was 11. No statistical difference was observed between the labs. Significant product effect was observed on incremental area under the curve (iAUC) and peak of glycemia. For II, values ranged between  $54 \pm 12$  and  $85 \pm 34$  with the largest difference between the 3 labs for a same product being 21. Significant lab and product effects were observed for insulinemic response parameters. Inter-individual and Intra-individual coefficient of variability (CV) ranged between 20 and 28 % and between 18 and 30%, respectively for iAUC glycemia and between 35 and 51% and between 22 and 43 %, respectively for iAUC insulinemia.

**Conclusions:** GI was not statistically different between the 3 labs and the products can be differentiated. II displays statistically significant differences between the labs showing the difficulty to compare the results on these parameters.

**Keywords: (maximum 5):** Inter-laboratory variability, Intra-laboratory variability, Glycemic Index, Insulinemic Index, cereal products

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## 149/648. Different versions of the German nutrient database BLS: Effect on nutrient intake

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**Introduction:** Food composition databases are subject to continuous changes and hence, affect the calculated nutrient intake of study populations.

**Objectives:** To examine the effects of altered nutrient data of three versions of the German Nutrient Database (BLS versions II.3, II.4, 3.02, generated in 1999, 2006, 2014) on the calculated energy and nutrient intake of the study participants of the German National Nutrition Survey (NVS) II.

**Method / Design:** Food consumption data assessed by diet history interviews of 7093 men and 8278 women (aged 14-80 years) who participated in the NVS II were used to calculate daily energy and nutrient intake (median, relative difference of the median, and 95% confidence interval of the median). For relative differences a pairwise comparison between the BLS versions II.4 versus II.3, 3.02 versus II.4 and 3.02 versus II.3 were conducted. Differences were considered significant when 95% confidence intervals do not overlap.

**Results:** Sex-specific analysis showed that the median intake of most of the studied nutrients varied significantly between the three BLS versions. For the majority of nutrients discrepancies between medians were below 10%. The most pronounced differences were found between version 3.02 and II.3 for calcium (men: -21.5%; women: -22.5%), magnesium (men: -19.3%; women: -22.1%), iodine (women: -20.2%), beta-carotene (men: +18.5%; women: +19.2%), iron (men: -16.3%; women: -18.0%), retinol (men: +18.6%; women: +14.0%), and alpha-tocopherol (men: +12.6%; women: +13.1%).

**Conclusions:** A strong impact of the applied BLS version on the calculated nutrient intake of the NVS II was shown. This was especially the case, when nutrient values of food items with high consumption were altered. Therefore, it is of great importance to consider the applied version of a food composition database when comparing nutrient intakes of different food consumption studies.

**Keywords: (maximum 5):** food composition database; nutrient intake; nutrient data; German National Nutrition survey (NVS) II, German Nutrient Database (BLS)

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## 149/652. Generalizability of dietary data in epidemiological research: The French Nutri-Net-Santé and ENNS studies

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