**Conclusions**: Higher proportions of gamma-linolenic acid and SFA, especially myristic acid, and lower proportions of many MUFA and PUFA in plasma are associated with plasma concentration of leptin in children. Fatty acids in plasma TG fraction seem to have the strongest associations with plasma leptin concentration.
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## Short Oral Abstract 12 - Comparison of Glycemic Outcome and Relation to Changes in Liver Fat Content in Low-carb vs. Low-fat Dietary Regimes for Prediabetic Subjects
## (Stefan Kabisch, Germany)

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**Objective:** Dietary strategies basing on the main nutrient components have been widely compared for their effectiveness in weight loss, weight maintenance and several metabolic outcomes. However, short- and long-term effects on glucose levels and liver fat content are controversially discussed. Furthermore, the interaction between weight loss, glycemic improvement and reduction of liver fat content is unclear.
**Methods:** In a subcohort of the Prediabetes Lifestyle Intervention Study (PLIS; n=99) we conducted a two-step dietary intervention with two different regimes. The initial three-weeks phase was hypocaloric (ca. 1500 kcal/day), the second phase (11 months) was isocaloric. We compared a low-carb regime (short term: < 40 g carbohydrates/day, long term: < 40 % of daily energy intake) and a low-fat diet (fat intake < 30 % of daily energy intake). Metabolic assessment throughout the study based on 2-hours oral glucose tolerance tests and magnetic resonance spectroscopy (liver fat).
**Results:** While both interventions show a similar statistically significant short-term reduction and long-term maintenance of glucose levels and liver fat content, only short-term reductions in fasting glucose levels appear to be significantly pronounced in the low-carb group (p=0,002). Correlation analysis shows, that despite similar magnitude of metabolic changes, liver fat reduction under low-fat diet is tightly linked to weight loss (p=0,003), but not in the low-carb group (p=0,17).
**Limitations:** Our data are preliminary results from an ongoing study. The final subcohort of PLIS will sum up about 200 subjects with one year of intervention and two additional years of follow-up.
**Conclusions:** Low-carb and low-fat diets are similarly effective to reduce glycemic parameters and liver fat content. However, the underlying mechanisms appear to differ regarding dietary composition. Further analysis will show, under which conditions weight loss is really necessary to achieve metabolic improvements.
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