

**FRIDAY, JUNE 12**



**Thomas Linn, MD**

Thomas Linn received his MD degree studying nutritional changes in the lipid composition of red blood cells. He worked as a junior researcher at Rudolf-Buchheim-Institute for Pharmacology, Giessen. Then he started clinical training in internal medicine, endocrinology and metabolism completing with board examination. He chose the field of experimental diabetology for his main thesis working on the biology of pancreatic islets and the role of inflammatory processes in the damage of insulin producing cells. Since 1999 he is Head of Clinical Research Unit at Medical Clinic 3 of University Hospital, Giessen. In 2006 he accepted a call from Justus-Liebig University to become Professor of Internal Medicine with focus on the pathophysiology of metabolism and nutritional medicine. His research is supported from different public and private sponsors; he is founding

member of the Committee of Giessen Graduate School for the Life Sciences.

**Slowly and rapidly absorbed carbohydrates on postprandial metabolism in type 2 diabetes**

Isomaltulose (ISO) attenuates postprandial glucose responses compared to sucrose (SUC) in type 2 diabetes mellitus (T2DM). However, the mechanisms have not been studied. In a randomized crossover study, eleven T2DM subjects underwent a euglycemic clamp combined with labeled oral ISO and SUC load. Glucose kinetics were analyzed for a 4-h postprandial period. Following ISO ingestion glucose absorption was prolonged ( $P = 0.005$ ), mean plasma concentrations of insulin, C-peptide, glucagon, and GIP were ~9-17% lower ( $P < 0.05$ ), by contrast GLP-1 was ~55% higher ( $P < 0.001$ ) compared to SUC. Total amount of systemic glucose appearance was ~35% lower with ISO ( $P < 0.001$ ) due to reduction of both endogenous and exogenous glucose appearance and augmented splanchnic uptake. Insulin action was increased after ISO compared to SUC ( $P = 0.028$ ). In conclusion, slowly absorbed ISO reduced systemic incorporation of oral glucose by inhibiting glucose production and enhancing splanchnic glucose uptake.

**Learning objectives:**

1. Isomaltulose bolus is completely absorbed in patients with type 2 diabetes mellitus (T2DM)
2. Slow absorption of sugar reduces blood glucose levels via effects on splanchnic glucose turnover
3. Isomaltulose drink is associated with a favorable gut hormone profile for T2DM patient