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In This Issue of *Diabetes Care*

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Dietary Counseling Intervention in the First 20 Years of Life Leads to Improved Insulin/Lipid Profiles

A dietary intervention approach spread over the first 20 years of life appears to result in better insulin sensitivity and serum lipid profiles if key dietary targets are achieved, according to Laitinen et al. (p. 2236). Specifically, the dietary counseling approach aimed to improve the quality of dietary fat and fiber intake in children's diets and also promote the intake of fruits, vegetables, and whole grains. The conclusions come from a prospective randomized trial, the Special Turku Coronary Risk Factor Intervention Project (STRIP), which recruited ~1,000 infants age 5 months to receive either biennially individualized dietary counseling relating to the Nordic Nutrition Recommendations or regular basic health education from age 8 months through to 20 years. Both groups also received regular monitoring of diet, anthropometric measurements, and had blood samples taken for measurements relating to cholesterol, lipids, glucose, and insulin. The authors found that over the 20-year intervention period, participants in the intervention group (i.e., those that received dietary counseling) were much more likely to achieve the targets than those who did not receive any counseling. In addition, participants who achieved a higher number of targets also had lower HOMA of insulin resistance and lower concentrations of glucose, insulin, LDL cholesterol, and non-HDL cholesterol. While the findings are important because they suggest dietary counseling and targets can achieve meaningful beneficial changes in dietary and cardiometabolic risk factors, the authors note that many children did not actually meet the targets. Commenting on the research, author Tomi T. Laitinen told *Diabetes Care*: "Our results strongly support recent dietary recommendations in the prevention of future type 2 diabetes and the promotion of cardiovascular health. Future follow-ups with the STRIP participants will show if the effects of this unique infancy-onset 20-year dietary intervention will persist into later adulthood and if the intervention effect confers in terms of long-term cardiometabolic risk reduction benefit."

Laitinen et al. Success in achieving the targets of the 20-year infancy-onset dietary intervention: association with insulin sensitivity and serum lipids. *Diabetes Care* 2018;41:2236–2244

Walking Improves Glucose Metabolism in Children With Overweight and Obesity

Regularly interrupting sedentary behavior in children with overweight or obesity with short periods of walking acutely improves glucose metabolism, according to Broadney et al. (p. 2220). As a result, they say that if such an intervention provides sustained improvements in glucose metabolism, widespread use of such an approach in schools and after-school care might provide improvements in glucose homeostasis in the community and potentially slow the onset of type 2 diabetes. The conclusions come from a randomized crossover study that involved children age 7–11 years with overweight and obesity who took part in two 3-h oral glucose tolerance tests under different experimental conditions. The tests were either 1) sitting for the entire test or 2) interrupted sitting where the children walked for 3 min on a treadmill every 30 min. The authors found among the 35 children that completed the trial that both insulin and C-peptide concentrations were reduced under the interrupted sitting condition. Insulin concentrations were lower at 60, 90, 150, and 180 min, and insulin area under the curve was 21% lower in comparison to the sitting condition. There was a similar outcome for C-peptide. Notably, however, there was no effect on glucose, which they explain might be due to insulin resistance in the participants, lower fitness levels, or indeed higher baseline blood glucose in comparison to children of lower weight. There were also no differences in energy intake following either of the two experimental conditions. According to author Jack A. Yanovski: "Given the high prevalence of overweight and obesity and the increasing incidence of type 2 diabetes among youth, effective low-cost approaches that might help prevent weight gain or diabetes are urgently needed. We think of this study as one of the first steps on a very long journey as we try to learn how to help children remain healthy throughout life."

Broadney et al. Effects of interrupting sedentary behavior with short bouts of moderate physical activity on glucose tolerance in children with overweight and obesity: a randomized crossover trial. *Diabetes Care* 2018;41:2220–2228

Long-acting Basal Insulin Analogs Compared Head-to-Head: Trial Confirms Similar Glycemic Control Improvements

Insulin glargine 300 units/mL (Gla-300) and insulin degludec 100 units/mL (IDeg-100) can provide similar improvements in glycemic control with relatively low hypoglycemia risk in patients with insulin-naïve type 2 diabetes, according to Rosenstock et al. (p. 2147). As a result, they suggest that choosing between the two insulins is likely to come down to practical considerations such as access and costs as much as clinical considerations. The conclusions come from the BRIGHT trial, which was a 24-week multicenter, open-label, noninferiority study designed to compare Gla-300 and IDeg-100 for improvements in glycemic control in individuals with insulin-naïve type 2 diabetes. The primary end point was reduction in HbA_{1c} from baseline to 24 weeks. After 24 weeks, both treatments resulted in reductions in HbA_{1c} (~8.6/8.7% to 7.0% for Gla-300 and IDeg-100, respectively). The authors found that there was no difference between the treatments, and accordingly, declared noninferiority of Gla-300 versus IDeg-100. Proportions of individuals reaching the HbA_{1c} target were comparable, and reductions in glucose and patterns in glucose profiles were also similar for the two insulin analogs. Overall hypoglycemia incidence and event rates over the study period were also comparable, although in the active titration period (0–12 weeks), Gla-300 had a lower incidence and rate of anytime (24-h) confirmed hypoglycemia. Commenting more widely on the study, author Julio Rosenstock said: “Both longer-acting basal insulin analogs proved highly effective and pretty safe with low frequency of hypoglycemia in insulin-naïve, poorly controlled type 2 diabetes. This was despite receiving multiple therapies including metformin, sulfonylureas, and even newer agents such as DPP-4, SGLT2 inhibitors, and GLP-1 receptor agonists. I believe that what our study did, was to ‘level the playing field’ between these two better longer-acting basal insulin analogs, and so we concluded that the key decision-making process for selecting one should be based mainly on access and cost.”

Rosenstock et al.
More similarities than differences testing insulin glargine 300 units/mL versus insulin degludec 100 units/mL in insulin-naïve type 2 diabetes: the randomized head-to-head BRIGHT trial. *Diabetes Care* 2018;41:2147–2154

Frequent Urological Complications in Long-standing Type 1 Diabetes

Urological complications associated with long-standing type 1 diabetes are prevalent, persistent, and frequently coexist in both men and women, according to Wessells et al. (p. 2170). They suggest that as people with type 1 diabetes live longer and avoid other common complications, urological issues are likely to contribute much more to the burden of the disease and to have a greater impact on quality of life. The conclusions come from an ancillary study of the Epidemiology of Diabetes Interventions and Complications (EDIC) cohort in which a series of validated questionnaires were used to document urological symptoms in the cohort on two occasions 7 years apart. Specifically, the authors documented the occurrence of urinary incontinence, lower urinary tract symptoms, urinary tract infections, and sexual dysfunction in both men and women with type 1 diabetes. Approximately 500 women and 550 men completed surveys at both time points. They found that between ~65% and ~70% of both women and men, respectively, had at least one of the complications the study investigated. In those that had a complication, most had one with a gradually declining percentage having two, three, or four co-occurring complications. The authors found that for a majority of participants that had complication(s) at the beginning of the study, the complications persisted, although new cases continued to emerge, and a minority saw remission of some complications. Sexual dysfunction in both sexes followed by urinary incontinence in women and low sexual desire in men were the most commonly reported complications. Author Hunter Wessells said: “This is the first time that all of the urological symptoms have been measured in the same cohort, giving us a 30,000-foot view of the complications landscape. Although most complications persist over time, we see signals of remission that encourage us to investigate intervention or prevention strategies. An important reminder is that many of these symptoms are treatable, so that even for individuals in whom remission is not likely, we can improve quality of life.”

Wessells et al. Burden of urological complications in men and women with long-standing type 1 diabetes in the Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Cohort. *Diabetes Care* 2018;41:2170–2177

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