betes. These results could be related to antioxidant, antithrombotic, and anti-inflammatory properties of HDL particles (2). Interestingly, structural modifications of HDL mediated by various mechanisms, including glycation, oxidation, and enzymatic degradation, may affect their functional and atheroprotective properties (3). This may suggest that not only quantity but also quality of HDL particles play a role in the damage of endothelium.

Molitch et al. (1) and our studies confirm the hypothesis that the higher the levels of HDL cholesterol, the lower the risk of late diabetes complications.

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Integrating Pediatric Diabetes Education Into Routine Clinical Care

The Families, Adolescents and Children's Teamwork Study (FACTS)

The importance of optimal glycemic control for children and adolescents to prevent the long-term complications of diabetes is well recognized (1). Educational interventions that increase parental involvement in blood glucose monitoring and insulin dose adjustment have demonstrated beneficial effects in specialist centers (2,3). The Families, Adolescents and Children's Teamwork Study (FACTS) was developed to evaluate a family-centered, structured education program for children and young people that can be integrated into routine clinical care. The small group setting facilitates increased peer group contact for both children and parents and improves cost efficiency, allowing the program to be delivered within existing service provision.

The program combines skills training with increased parent-adolescent teamwork and consists of four small group (three to five families) sessions over 12 months. The first two skill-based sessions cover carbohydrate counting, blood glucose monitoring, and insulin dose adjustment, with the last two focusing on sharing parental/child responsibility (4). Each session takes place on the same day as the regular 3-monthly age-banded clinic visits.

All health professionals involved received training in the delivery of group education by an experienced health psychologist. Sessions were monitored to ensure that they were patient centered and interactive, in order to engage children, adolescents, and parents in self-management. Written information to reinforce the main topics discussed was provided at the end of each session. Changes to insulin regimes were made only when requested by parents or health professionals but not as part of the program.

Families were randomly assigned to either the immediate (1st year) or delayed (2nd year) intervention. The delayed group acted as waiting list controls during the 1st year (i.e., attended only for routine clinical care) and attended the educational sessions in additional to routine clinical care during the 2nd year. Over the 2-year study period, 67 randomized subjects (55.5% male), mean (±SD) age 12.9 ± 2.1 years, attended the immediate (n = 33) or delayed (n = 34) intervention. The mean HbA_{1c} (A1C) at baseline was 9.1 ± 1.25% and mean duration of diabetes 4.9 ± 3.25 years. There were no significant differences between participants and nonparticipants in A1C, number of daily injections, or total daily dose of insulin at baseline.

Individuals attending the first two education sessions were more likely to increase their number of daily injections (attendees 44%, nonattendees 14%; P = 0.006). Interim analysis of change in A1C indicates that individuals who attended the two group sessions showed a reduction in A1C (mean drop 0.27%), whereas those who did not attend showed an increase in A1C (mean increase 0.26%); this difference nearly reached statistical significance (t = 1.60, df = 70, P = 0.058).

This is the only pediatric educational intervention that has been tested by two independent research groups and that has been shown suitable for both individual and group delivery. Although the effects on A1C are small, the ability to deliver the intervention not only to individual families in specialist units but also to small groups in a routine clinical setting makes this program relevant to other centers providing pediatric diabetes care.

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