Table 1. Outcomes.

Outcome Measure	SPT	CLT	p value
Time in target (110-200 mg/dL overnight; hours)	3.20±0.77	5.30±0.66	0.12
Time >300 mg/dL overnight (hours)	1.30±0.42	0.18±0.08	0.035
AUC >200 mg/dL overnight (mg/dL*hours)	384±84	162±40	0.049
Number of interventions for hypoglycemia	4.0	5.0	1.0
Peak postprandial glucose (mg/dL)	353±24	367±23	0.71
12:00 PM glucose (mg/dL)	273±24	189±18	0.009

CLT maintained tight glucose control without increasing the incidence of hypoglycemia and improved pre-lunch blood sugars, leading the investigators to conclude that it has the potential to improve diabetes care for very young children.

The Precocious "AGE'ing" Effect of Type 1 Diabetes in Children

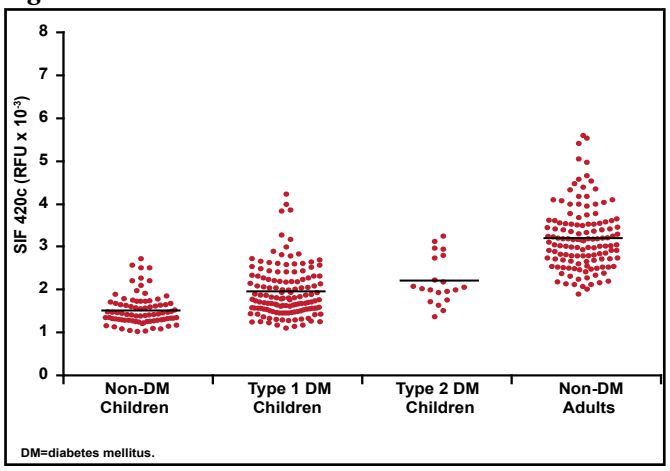
Written by Phil Vinall

Type 1 diabetes mellitus increases the formation of long-lived complexes, known as advanced glycation endproducts (AGEs), which can contribute to the development of complications in patients with diabetes [Genuth S et al. *Diabetes* 2005]. AGEs accumulate naturally in tissues over time, and tissue burden is a function of chronological age. Shreepal Shah, MD, Louisiana State University, New Orleans, Louisiana, USA, presented results of the "The Precocious "AGE'ing" Effect of Type 1 Diabetes in Children" study, which examined the relationship between chronological age and type 1 diabetes on skin AGEs in children. The study results indicated that a large proportion of children with type 1 and type 2 diabetes have precocious accumulation of skin AGEs, as estimated by skin-intrinsic fluorescence (SIF), compared with children and adults without diabetes.

The study was conducted in children with established type 1 (n=133; mean age 13 years) and type 2 diabetes (n=20; mean age 15 years) and healthy children (n=91; mean age 10 years) and adults (n=129; mean age 40 years) without diabetes. The mean duration of diabetes was 6 years for patients with type 1 diabetes and 4 years for those with type 2 diabetes. History of, or current smoking was cause for exclusion. Skin AGEs were estimated noninvasively by measuring SIF using a Scout DS® device using procedures previously described by Felipe et al. [Felipe DL et al. *Diabetes Care* 2011]. The goal of the study was to assess accumulated skin AGEs, estimated from SIF, from children with diabetes compared with individuals who did not have diabetes.

In individuals without type 1 diabetes, SIF, stimulated at 420λ (SIF 420c), increased with chronological age. When adjusted for chronological age and gender, SIF 420c was higher in children with type 1 and type 2 diabetes compared with children without diabetes (Figure 1). Forty-three percent of children with type 1 diabetes and 55% with type 2 diabetes had SIF values that were comparable with those of the adults (who were approximately 27 years older) without diabetes. SIF was associated with HbA1C or hemoglobin glycation index in the children with diabetes, but mean blood glucose levels were not.

Figure 1. SIF 420c.



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Many children with type 1 and type 2 diabetes have estimated skin AGE levels that are comparable with those that would be observed naturally only in adults aged 20 to 40 years. The investigators estimated that 4 to 6 years of diabetes duration is comparable with ~30 years of chronological aging. The authors speculated that factors that predispose individuals to precocious accumulation of skin AGEs may also predispose them to precocious development of diabetes complications.

Abatacept in Patients with New-Onset Type 1 Diabetes: One-Year Follow-Up

Written by Phil Vinall

Type 1 diabetes mellitus (T1DM) is an autoimmune disease that is driven by activated T-lymphocytes. To be fully active, immune T-cells need a costimulatory signal in addition to the main antigen-driven signal. A previous study showed that abatacept, a costimulation modulator that prevents full T-cell activation, slowed reduction in