

**Windy City Whispers**  
**67th Scientific Sessions American Diabetes Association**  
**June 2007**

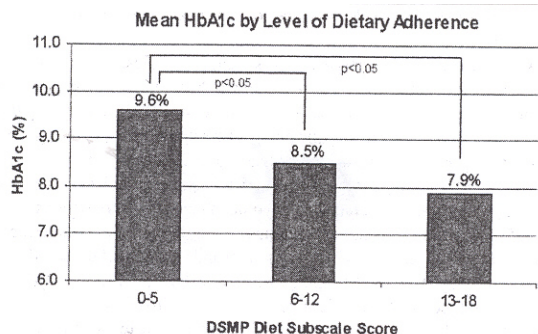
**Pediatrics**

We had several sessions that dealt specifically with pediatrics. The first was called Pediatric Points and had a wide ranging set of interests. First was a presentation from Bethesda, Maryland looking at the effect of varying glycemic index meals on blood sugar control assessed with CGM. They reported that there had been three studies earlier in children showing improved control with a low glycemic index diet. I should mention that the glycemic index was very popular in the late 1980s but fell out of popularity as carb counting came to the forefront. Carb counting is easier and we pretty much dropped the glycemic index for awhile. The bottom line is that it encourages fruits, vegetables and whole grains. The idea was that by using a low glycemic index carb meal plan, it would improve control, lead to better weight control and lead to better post-prandial (post-meal) blood sugars. This study looked at 20 children 13 on pumps and 7 on multiple daily injections and Lantus. They were followed by continuous glucose monitoring so that they could truly see what the blood sugars did throughout the meal. The results are listed on the following table.

		GI	Mean	SD	SE	t	p
Day	BG	High	184.2	45.8	10.2	5.2	<.001
		Low	137.6	36.5	8.2		
	BG area above 180 mg/dl	High	26217.2	20823.1	4656.2	3.8	.001
		Low	9203.3	11287.4	2523.9		
	BG area below 70 mg/dl	High	526.8	1374.7	307.4	0.3	.77
		Low	423.4	826.3	184.8		
Night	BG	High	159.0	68.8	15.8	-1.5	.15
		Low	181.0	64.1	14.7		
	BG area above 180 mg/dl	High	10084.0	15256.9	3500.2	-1.0	.33
		Low	14674.3	19460.5	4464.5		
	BG area below 70 mg/dl	High	613.4	1515.3	347.6	1.2	.23
		Low	145.2	488.9	112.2		

As can be seen, the mean blood glucose level was considerably better with the low glycemic index diet and the insulin/carb ratio was lower with the low glycemic index. They concluded therefore that use of a low glycemic index diet might reduce excursions in blood sugar level and reduce insulin requirements. There was no effect on nighttime levels. *I think this study is very interesting. All of our teaching recently has been in terms of carb counting and I think this will give the dieticians something new to work with. For those of you who are really interested in better diabetic control and perhaps better weight control, this could be very encouraging information.* Next we have a study from Boston looking at the effect of dietary behaviors to predict glycemic control in children with Type I diabetes. This study's aim was to determine how adherence to dietary behaviors impacted glycemic control. They had 120 children from five centers between the ages of 9 and 14 years. They measured such things as exercise, frequency of hypoglycemia, diet behavior, blood glucose monitoring and insulin administration. The average Hgb A1c was 8.4%. Fifty four of the 120 children were on multiple daily injections

or pump therapy. The parent and child completed the diabetes self management profile, which looked at 25 items of adherence. The multivariate analysis that controlled for age, gender, race, pump use, daily insulin dose and caregiver education showed that only daily blood glucose monitoring frequency (*again!*) and dietary adherence were significantly associated with the Hgb A1c. The table below shows the effect of dietary adherence. The higher the score, the more adherent is the patient.



They concluded that in this era of emerging diabetes technologies, nutrition education facilitating dietary adherence remains central to improving glycemic control in youth with Type I diabetes. I think studies like this are very important. *We really do get so hung up on various meters and continuous glucose monitoring that sometimes we forget the basics. Nutrition remains a very significant component of diabetes management. I should add that Sherrie Hardy paid me to say that.* Then we had a study from Cleveland, Ohio again looking at the dietary component of diabetes management. They were looking at the carbohydrate knowledge and counting ability among patients using intensive insulin regimens. They used the Ped Carb Quiz which is a 39 item self-administered questionnaire which takes about 10-20 minutes for completion. It contains 7 domains: carbohydrate recognition, carbohydrate counting in food items, carbohydrate counting in meals, nutrition label reading, use of insulin to carbohydrate ratio, use of blood glucose correction scale and calculation of insulin dose. They found, not surprisingly, that there was the expected inverse correlation between the Ped Carb Quiz scores and the patient's Hgb A1c. The better the knowledge of carb counting, the lower the Hgb A1c. *It might be interesting for our dietitians to obtain this one or create their own questionnaire. I am curious how many of our patients who are convinced that they are very good at carb counting in fact could use some help. The study again shows that the dietary component is very important for management.* There were two studies looking at psychosocial aspects in childhood diabetes. One looked at the use of home versus office based counseling and found that in-home treatment improved the Hgb A1c from 10.6% to 9.4% while help in the clinic lowered it only from 11.5% to 11.3%. In-home help also led to a significant improvement in the diabetes self-management profile. *These types of studies are very interesting and necessary but may not be overly practical in the cost-conscious medical environment that we currently find ourselves.* The other one looked at depression and found not surprisingly that depression related directly to the control as measured by Hgb A1c. Parental anxiety and depression appeared to have a significant negative effect on control. Cynthia Berg presented the first of what I would assume will be several reports from ADAPT from our clinic. This part of the study was looking at mother and father acceptance of adolescents diabetes management behaviors. They found that the teens perceived mothers as being more accepting and more aware of their diabetes management than were fathers. Glycemic control was found to correlate with higher diabetes acceptance from both

mothers and fathers. They concluded that although fathers may be less accepting and aware, adolescents feel that father's support and knowledge appear particularly important for diabetes management. *As if I did not know that fathers were very important for teenagers.*

ZITS

Scott & Borgman

