

## Nutrition Management of Diabetes Must be Individualized

I agree with John Bantle's comments that there remains (and will probably remain for years, if not forever) controversy surrounding the search for ideal diabetes nutrition recommendations (1). However, diabetes nutrition educators/RDs can't wait for the final word on the ideal diabetes nutrition recommendations (that's accepting the notion that there will be just one) because they are faced with clients every day (2).

I disagree that the diet is difficult because the controversies are debated and therefore, public confusion ensues. I agree, however, that adherence to any restrictive meal plan is difficult. Numerous reasons exist for dietary failure and many can be attributed to the health professional rather than the client:

1. Clients are insufficiently and often inappropriately educated (3).
2. Diabetes nutrition education does not place primary and sufficient importance on using individual life-style needs as the gauge for designing a diabetes regimen that is easily implemented.
3. Clients are most often educated using a meal planning system (exchange system for meal planning) that is in part based on unfounded scientific information (4,5).
4. Using a meal planning system that does not incorporate a wide variety of products on the supermarket shelf today—from convenience/low-calorie frozen meals to fat-free salad dressings, frozen desserts, etc. Many of these products can assist people attempting to lower fat and calorie intake (6).
5. Using a meal planning system that does not account for the fact that 43% of the food dollar will be spent on food purchased or eaten away from home, or that the aver-

age American eats 3.8 meals away from home per week (7).

To improve dietary adherence diabetes nutrition educators and related associations must develop and/or use creative teaching tools to match a gamut of educational levels and diabetes management goals. We must bury the premise that one tool fits all (8). The selection of an appropriate meal planning system must be, at least for starters, based on individual life-style (food/activity) habits, diabetes management goals, motivation, and learning level. In addition, the meal planning approach needs to be tweaked and/or changed over time.

Carbohydrate counting is becoming popularized, especially with individuals seeking intensive management and glycemic control (9). On the other side of the spectrum, the overweight NIDDM individual with low literacy skills may be educated using the new food guide pyramid through which the major principles of weight loss can be stressed (10) or using ADA's Month of Meals, which presents a handy way of providing the often sought planned menus (11).

Adherence and diabetes control can also be improved if clients receive sufficient diabetes nutrition counseling (3,12,13). Today, the vast majority of clients with diabetes do not receive anywhere near adequate diabetes nutrition education. Many, at best, receive a pre-printed diet plan that considers none of their individual needs (3). Many clients never receive information on eating away from home, integrating convenience foods, food and nutrition label reading, and the list goes on.

Following a diabetes nutrition plan, at best, will continue to be a difficult task in today's fast-food, convenience-food, and, as John Bantle described, food-focused world. But let's not misdiagnose where the difficulties in adherence lie.

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RD, REGISTERED DIETITIAN; NIDDM, NON-INSULIN-DEPENDENT DIABETES MELLITUS.

### References

1. Bantle JP: Thoughts on the dietary treatment of Diabetes Mellitus. *Diabetes Care* 15:1821-22, 1992
2. Grundy SM: Dietary therapy in diabetes mellitus: is there a single best diet? *Diabetes Care* 14:796-801, 1991
3. Franz M: Practice guidelines for nutrition care by dietetics practitioners for outpatients with non-insulin-dependent diabetes mellitus: Consensus Statement. *J Am Diet Assoc* 92:1136-39, 1992
4. Crapo PA, Reaven G, Olefsky J: Postprandial plasma-glucose and insulin responses to different complex carbohydrate. *Diabetes* 26:1178-83, 1977
5. Bantle JP, Laine DC, Castle GW, Thomas JW, Hoogwerf BJ, Goetz FC: Postprandial glucose and insulin responses to meals containing different carbohydrates in normal and diabetic subjects. *N Eng J Med* 309:7-12, 1983
6. Powers MA, Warshaw HS: Nutrition update—fat replacers/substitutes: what the diabetes educator needs to know. *Diabetes Educator*. In press
7. National Restaurant Association: *1993 NRA Foodservice industry Forecast*. Washington, DC
8. Green Pastors J, Holler H: Meal planning approaches in the nutrition management of the person with diabetes (2nd ed). Am. Diet. Assoc., In press
9. Brackenridge B: Carbohydrate gram counting. *Practical Diabetology* 22-28, 1992
10. Achterberg C: A perspective: challenges of teaching the dietary guidelines graphic. *Food and Nutrition News* 64:23-26, 1992
11. American Diabetes Association: *Month of Meals (Volume 1, 2, 3)*. Am. Diab. Assoc., Alexandria VA
12. Powers MA, Delihanty L, Beebe C: Utilizing self-blood glucose monitoring results in counseling with diabetes. In *Proc. 75th Annual Meeting of The American Di-*

etic Association, October 20, 1992

13. Mazze RS, Franz MJ, Monk A, Cooper N, Barry B, Weaver T, McClain K, Upham P, Haugen D, Bergenstal R: Practice guidelines for nutrition care by dietetics practitioners for outpatients with non-insulin-dependent diabetes mellitus: methodologies for field-testing and cost-effectiveness analysis. *J Am Diet Assoc* 92: 1139-42, 1992

### Cost-Effectiveness of Alternative Methods for Diabetic Retinopathy Screening

The paper by Lairson et al. (1) on the cost-effectiveness of alternative methods of screening for diabetic

retinopathy rightly includes an analysis of the sensitivity of their conclusions to alterations in some of the program parameters. However they do not take into account the error in their estimation of the sensitivities of the four screening tests that they have compared. Because sensitivity and specificity are proportions, the 95% CIs can be calculated with the general formula for the SE of a proportion (2), yielding the results shown in Table 1.

The problem of accurately estimating the sensitivity of a test where the sensitivity is low is of particular relevance to screening for diabetic retinopathy because sensitivity is a major determinant of cost-effectiveness. Including CIs in the estimate of the cost per true-positive case detected is a critical step in the production of evidence with which to make important health-care policy deci-

sions. As Table 2 demonstrates, recalculation of the results of the analysis in this paper make the conclusions less clear, because the CIs of the cost-effectiveness ratios overlap.

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CI, CONFIDENCE INTERVAL.

#### References

1. Lairson DR, Lorimor RJ, Pugh JA, Jacobson J, Kapadia AS, Velez R: Cost-effectiveness of alternative methods for diabetic retinopathy screening. *Diabetes Care* 15: 1369-77, 1992
2. Altman DG: *Practical Statistics for Medical Research*. London, Chapman and Hall, 1991

### Prevalence of Diabetes in Asian Indians

Our observations (1-4) are similar to those of Ramachandran et al. (4a) and show that the prevalence of diabetes in Asian Indians is considerably higher in high risk (urban, upper socioeconomic groups) than in low risk (rural, low socioeconomic groups) populations. They attribute this disparity to altered life-style conditions prevailing in rural and urban areas. We have focused attention on dietary habits and fat intake and find that the prevalence of diabetes

Table 1—CIs for sensitivity and specificity

	45° PHOTO WITHOUT DILATION	45° PHOTO WITH DILATION	OPHTHALMOLOGIST EXAMINATION	TECHNICIAN EXAMINATION
SENSITIVITY	0.61	0.81	0.33	0.07
UPPER 95% CI	0.72	0.90	0.44	0.14
LOWER 95% CI	0.50	0.72	0.22	0
SPECIFICITY	0.85	0.96	1.00	0.99
UPPER 95% CI	0.89	0.99	1.00	1.00
LOWER 95% CI	0.81	0.94	0.99	0.97

Table 2—System and patient cost per true-positive case detected

	45° PHOTO WITHOUT DILATION	45° PHOTO WITH DILATION	OPHTHALMOLOGIST EXAMINATION	TECHNICIAN EXAMINATION
SYSTEM COST/TRUE-POSITIVE (\$)	378	295	390	794
UPPER ESTIMATE	463	331	581	—
LOWER ESTIMATE	320	265	294	379
PATIENT COST/TRUE-POSITIVE (\$)	171	139	306	1009
UPPER ESTIMATE	209	156	454	—
LOWER ESTIMATE	144	125	230	481