

### Lifestyle Changes Reduce the Risk for Diabetes

In a study done in China, patients who received a six-year lifestyle intervention had a 43% lower rate of diabetes than controls. After 20 years, 80% of the patients had diabetes compared to 93% in the control group. Those in the intervention group delayed the onset of diabetes by an average of 3.6 years. There was no significant difference in the rates of cardiovascular disease or death between the groups.

In 1986, Chinese adults who had impaired glucose tolerance were randomized into a control group, a diet group, an exercise group or a diet and exercise group for six years as part of the China Da Quing Diabetes Prevention Study.

The diet group focused on increasing vegetable intake and reducing the consumption of alcohol and sugar. The exercise group aimed at increasing leisure time physical activity. Data from all three intervention groups were pooled together.

During the six year intervention period there was a 51% lower rate of diabetes in the intervention group than in the control group.

Dr. Li and colleagues propose that lifestyle intervention should start much earlier, when people have normal blood glucose, to achieve true primary prevention of type 2 diabetes and it's main complication, cardiovascular disease.

Li G, et al "The long-term effect of lifestyle interventions to prevent diabetes in the China Da Quin Diabetes Prevention Study: a 20 year-year follow up-study" *Lancet* May 24, 2008; 371: 1731-1733.

American Diabetes Association: Clinical Practice Recommendations 2008  
Summary of Nutrition Recommendations and Interventions for Diabetes, cont.

Nutrition Recommendations for the Management of Diabetes  
(secondary prevention)

#### Carbohydrate

- The RDA for carbohydrate (130 g/day) is the average minimum requirement.
- Is important to match the doses of insulin to the carbohydrate of meals. This can be done by carbohydrate counting, the exchange system and experience based estimation. (in my opinion plate methods can be considered experience based estimation KH)
- People with diabetes are encouraged to choose a variety of fiber from legumes, fiber rich cereals, fruits, vegetables, and whole grain products.
- Sugar does not increase blood glucose more than a like amount of starch. A sugar containing food (dessert) can be substituted for other carbohydrate sources in a

meal. If a sugar containing food is added to a meal plan it can be covered with insulin, but care must be taken to avoid excess calories.

- Sugar alcohols (polyols) and nonnutritive sweeteners are safe when consumed within daily intake levels established by the FDA.(each person can choose whether to use polyols and nonnutritive sweeteners KH)

#### Fat

- Limit saturated fat to 7% of total calories.
- Trans fat intake should be minimal.
- Limit cholesterol to 200 mg/day.
- Two or more servings of fish per week (not commercially prepared fried fish) provide omega 3 fatty acids and are recommended.

#### Protein

- For persons with diabetes and normal renal function protein intake can be 15-20% of energy.
- In people with type 2 diabetes, protein can increase insulin response without increasing blood glucose level. **Protein should not be used to treat acute hypoglycemia or to prevent nighttime hypoglycemia.**
- High protein diets are not recommended for weight loss at this time. Long-term effects of protein intake greater than 20% of calories on diabetes management and its complications are unknown.

#### Alcohol

- If adults with diabetes choose to use alcohol, the limit for women is one drink per day or less and the limit for men is two drinks per day or less.
- For people taking insulin or insulin secretagogues, alcohol should be consumed with food.
- People with a history of alcohol abuse or dependence, women during pregnancy, people with medical problems such as liver disease, pancreatitis, advanced neuropathy, or severely elevated triglycerides should abstain from alcohol.
- Moderate alcohol consumption has no acute effect on blood glucose or insulin levels. Carbohydrate ingested with alcohol, as in a mixed drink, may raise blood glucose.

### Nutrition Interventions for Specific Populations

#### Nutrition interventions for type 1 diabetes

- Insulin therapy should be integrated into the person's dietary and physical activity pattern.
- Persons using rapid-acting insulin by injection or a pump should adjust meal and snack insulin doses based on carbohydrate content of the meals and snacks.
- For those on fixed daily insulin doses, carbohydrate intake should be consistent on a day-to-day basis with respect to time and amount.
- For planned exercise, insulin can be adjusted. For unplanned exercise, extra carbohydrate may be needed.

#### Nutrition interventions for type 2 diabetes

- Lifestyle changes that reduce energy intake, saturated and trans fatty acids, cholesterol, and sodium and that increase physical activity are encouraged. These

- lifestyle changes can improve blood glucose levels, lipid levels, and blood pressure.
- Glucose monitoring can be used to determine whether adjustments in food and meals will achieve blood glucose goals or if medications need to be combined with medical nutrition therapy

Nutrition interventions for pregnancy and lactation with diabetes

- During pregnancy adequate energy intake that provides appropriate weight gain is recommended. Weight loss is not recommended. For overweight and obese women with gestational diabetes modest energy and carbohydrate restriction may be appropriate.
- Ketones in the urine from ketoacidosis or starvation ketosis should be avoided.
- Medical nutrition therapy for women with gestational diabetes focuses on food choices for appropriate weight gain, blood glucose control, and the absence of ketones.
- For women with gestational diabetes after delivery lifestyle changes that reduce weight and increase physical activity are recommended. Gestational diabetes is a risk factor for type 2 diabetes.

Nutrition Recommendations for older adults with diabetes

- Older adults who are obese may benefit from modest energy restriction and an increase in physical activity. Energy requirement may be less than a younger person of a similar weight.
- A daily multivitamin supplement may be appropriate for those older adults with reduced energy intake.

The summary of Clinical Practice Recommendations will be concluded in the next Kitchen Creations Faculty Newsletter

### Salty Foods and Soft Drinks

A recent article in the journal *Hypertension*, reported that children who had less salt in their diets, drank fewer sugared soft drinks. The authors analyzed data from the National Diet and Nutrition Survey for young people in Great Britain. It is a large cross-sectional study which was carried out in 1997 with a nationally representative sample of youth between 4 and 18 years of age. It was determined that salt intake rose with age, from 4.6 g/day among 4 year olds to 6.6 g/day for 18 year olds. The researchers did not count salt added during cooking or at the table. Most of salt intake is already in processed foods.

It was found that soft drinks accounted for more than half of the fluid intake among most age groups of boys and girls except for 17 year olds. In all participants, 56% of total fluid intake was in the form of soft drinks, 55% of the soft drinks were sweetened and 45% were low calorie. As children grew older consumption of soft drinks containing sugar increased slightly.

A separate analysis was performed to determine if salt intake was related to sugar sweetened soft drink consumption. There was a highly significant association between

salt intake and sugar sweetened drink consumption. From multiple regression analysis, it was predicted that a reduction of 1g/day in salt intake would reduce sugar sweetened soft drink consumption by 27g/day per child.

Reducing salt as a public measure is attractive because approximately 80% of salt is in processed foods. Small reductions in salt (10% to 20%) cannot be detected by human salt taste receptors and do not cause technological or safety problems. This is currently being carried out in the United Kingdom on a voluntary and collaborative basis with the food industry. It has already been demonstrated that salt intake, as measured by 24 hour urinary sodium, is falling in adults in the United Kingdom.

*Hypertension* 2008;51;629-634.

Websites, etc.

#### MyPyramid for older adults

Tufts University researchers have updated their My Food Guide Pyramid for Older Adults to correspond to the new MyPyramid that was released in 2005. It is a print based alternative to the web based MyPyramid. The foundation of the pyramid shows physical activities that are likely to appeal to older adults. It shows a row of glasses because of the increased risk of dehydration in older adults and the importance of drinking adequate fluids. A flag at the top reminds older adults that they may need to supplement specific nutrients for optimum health. The need for calcium, vitamin D and vitamin B12 increases as people age and they may not get adequate amounts from food.

A PDF version is available at:

[www.nutrition.tufts.edu/docs/pdf/releases/ModifiedMyPyramid.pdf](http://www.nutrition.tufts.edu/docs/pdf/releases/ModifiedMyPyramid.pdf)

#### Kitchen Companion: Your Safe Food Handbook

The Food Safety and Inspection Service has published a new food safety booklet. Topics that are covered are:

- Foodborne bacteria
- Shopping for Food
- Storing Food
- Food Preparation
- Cooking Food Safely
- Special Guidelines for Certain Foods
- Specific Preparation and Cooking Methods
- Service Food Safely
- Transporting Food
- Food Safety for Food-by-Mail
- Food safety in an Emergency

You can order Kitchen Companion by calling 1-888-674-6854 or e-mail [fsis.outreach@usda.gov](mailto:fsis.outreach@usda.gov) You can order up to 100 copies at no cost.

The Garden Grocery: Food Safety and Selection at Farmers' Market

This is a power point and hand out from an Extension Home Economist in Nebraska. At the top of this page click on Food to see other information that is available.

<http://lancaster.unl.edu/food/farmar.shtml>

NDEP News and Notes

This is a monthly on-line newsletter from the National Diabetes Education Program. Check it out. There is lots of good information.

<http://www.ndep.nih.gov/new/NewsNotes/NDEPNewsNotes.htm>

RD411

This is a community website that welcomes submissions and ideas from colleagues and practitioners. It offers FREE access to downloadable, peer reviewed materials for nutrition professionals. On the home page click on "Visit the Diabetes Center" and check out the materials that are available.

<http://www.rd411.com>

Learning About Diabetes

This is a non-profit organization that offers low literacy diabetes materials in both English and Spanish. The materials can be downloaded at no cost. Booklets, handouts, picture stories and comic books are available.

[www.learningaboutdiabetes.org](http://www.learningaboutdiabetes.org)

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