

Diabetes News

Newsletter of Department of Dietetics & Education
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Dear Colleagues

This issue of newsletter we've decided to focus on different aspects concerning diabetes and Ramadan.

Please feel free to send your feedback and ideas.

Aetio-pathology of Type 2 Diabetes; Genetics vs Environment

By: Prof. Abdul Basit (F.R.C.P. (Lon)) Director of BIDE

Gene-environment interactions play a major role in the aetio-pathology of Type 2 Diabetes (T2DM). Genetic involvement pattern is complicated as it is a polygenic disorder with multiple genes located on different chromosomes contributing to its susceptibility. Thrifty Genotype Hypothesis suggested that the presence of gene or genes persist at a high level in the population because they somehow confer a survival advantage in times of adequate or over nutrition. These genes determine increased fat storage. Several genes have already been identified as candidate for thrifty genotype like those encoding protein of the insulin signaling and leptin pathways. Role of genetics in determining insulin resistance is supported by the findings of decreased insulin activity and hyperinsulinemia among first degree, non-diabetic relatives. Some studies also suggest that both the maternal and fetal Glucokinase genotypes interact to influence birth weight. It has also been proposed that a genetically programmed insulin effect during embryogenesis determines fetal growth and provides a possible molecular link between birth weight and susceptibility to T2DM. It is shown that the ability of low birth weight to predict later diabetes in offspring appears to depend on the presence of paternal diabetes. These observations appear to strengthen the case for a genetic link between low birth weight and T2DM. Reduced fitness in people with diabetes may also be a genetic tendency. Several epidemiological and metabolic studies of twins and first degree relatives of T2DM have demonstrated that diabetes has an important genetic component. The fact that T2DM is a genetically heterogeneous disorder implies that several primary defects contribute to the susceptibility to the disease.

Environmental factors like high calorie diets and reduced physical activity definitely contribute to the increasing prevalence of obesity and T2DM. The thrifty phenotype hypothesis proposed the concept of environmental 'programming' suggesting the existence of developmental windows during which exposures 'set' physiological systems and hence long-term consequences. Extremes of maternal age are also found to be a contributing factor to low birth weight. The protective effect of breastfeeding for childhood obesity and T2DM has also been observed. High prevalence of the disease in the offspring of gestational diabetic mothers or concordance rates of T2DM in identical twins further suggests intrauterine environmental influences. Predictive Adaptive Response hypothesis proposes that the fetus dynamically interacts and reads the environment which it will be born into and adapts to gain a future survival advantage. Environmental pollution and infectivity has also been proposed in certain studies to stimulate the fat cells to secrete molecules that promote insulin resistance, endothelial dysfunction, coagulation disturbances and a proinflammatory state, leading to type 2 diabetes and CHD. Role of stress and depression in the development of T2DM is being implicated. The successes of primary prevention trials in T2DM supports the notion that environmental influences were a cause of their T2DM and encourages further to concentrate on earlier interventions.

Better understanding of aetio-pathological genetic and environmental factors are suggesting prevention should begin much before the stage of IGT, and interventions in high-risk subjects i.e. families of people living with diabetes alone will not be sufficient. It is necessary to initiate population based programmes for primary prevention of T2DM and must include a range of activities targeted at different age groups from fetal life to old age.

DATES AND DIABETES

By: Safia Mehboob, Clinical Dietitian

Ramadan is a period for worship, self-discipline, austerity and charity. Fasting is obligatory for all healthy adult Muslims with no food or drink being consumed between dawn and sunset. There are only two meals a day, pre-dawn and after sunset.

The Quran states that all healthy adult Muslims are required to fast during the month of Ramadan. Among those who have no religious obligation to observe fasting are the acutely unwell or those feeling severely ill; the old and frail; people with learning difficulties who are unable to understand the nature and purpose of fasting; and those with a long-term illness for whom fasting may be detrimental. People with uncontrolled diabetes generally fall within this latter category.

According to many recommendations given on fasting and diabetes by health professionals and international Islamic council, diabetic patient with several specific conditions can't fast. However, many people with diabetes still prefer to observe fasting during the month of Ramadan. Doctors working with Muslim patients commonly face the Task of advising people with diabetes and with appropriate counseling and guidance many people with diabetes can fast safely.

It is reported that the Prophet (P.B.U.H) break his fast with dates. This is Sunnah that is well followed by Muslims today. Dates are a powerful house of nutrients and a source of energy, fiber, iron, potassium and magnesium. Consuming dates allow one to feel extended period of time, making in a perfect food to start fasting.

Vitamin Content of Date:

Vitamin % 100 / gm
Vitamin A 4.8 - 6
Vitamin C 0.77 - 2.7
Vitamin B1 0.07 - 0.1
Vitamin B2 0.03 - 0.05
Vitamin B3 0.33 - 2.2

Chemical Composition **Nutrients 100 / gm without seed**

Water (%) 22.5 - 24.5
Protein (gm) 2.0
Energy (ckal) 274.0
Sugar (g) 72.9
Crude fiber (g) 2.3
Ash (g) 1.9
Calcium (mg) 59.0
Phosphor (mg) 63.0
Iron (mg) 3.0
Sodium (mg) 1.0
Potassium (mg) 648.0
Fat (gm) 0.5
Vitamin A(1u) 50.0
Thiamin (mg) 0.09
Riboflavin 0.10
Niacin 2.2

DATE AND DIABETES

Can people with diabetes eat dates to break their fast in the evening and if they can, then how many?

The answer of this question is that Dates have high natural sugar content and will raise blood sugar levels if eaten in excess. Therefore up to two dates can be eaten when breaking fast in the evening.

Like all fruits, dates contain natural carbohydrates that will be converted to blood sugar. Three dates have about the same amount of sugar as half a banana and one medium apple or one medium pear. If you want to eat dates you have to cut the total amount of carbohydrate of your total daily carbohydrate intake.

To determine how a specific food may affect your blood sugar do check blood sugar before & two hours after eating the particular food. If your blood sugar is 140mg/dl or less, you tolerate the food well. If your blood sugar is higher then 140 mg/dl, try a smaller portion of food the next day and rechecked the effect on your blood sugar level.

One study done on glycemic response of dates is "*Glycaemic responses to date and date/yoghurt meal ingestion were plotted for each subject*". Glycaemic indexes were calculated as the ratios of the incremental areas under these response curves to those for glucose ingestion. Results: Mean glycaemic indexes of the dates were 47.2, 45.3, 35.5, 37.3, and 28.9 for rutab, traditionally stored, commercial, rutab/yoghurt and commercial tamer/yoghurt preparations, respectively. There was a significant difference between the results for rutab vs commercial tamer dates ($P<0.05$), but other comparisons failed to reach statistical significance. Conclusions: Khalas dates, when eaten alone or in mixed meals with plain yoghurt have low glycaemic indexes. The consumption of dates may be of benefit in glycaemic and lipid control of diabetic patients. The consumption of dates in mixed meals with yoghurt appears to have, at most, a minimal effect on the glycaemic index.



MODERATION IS KEY : ALLAH says in the QURAN "Eat of good things we have provided for your sustenance, but commit no excess therein" (Taha 20:81)

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Healthy Food Choices

By: Nabila Suleman (M.Sc) Clinical Dietitian

| <i>Foods to avoid</i> | <i>Healthy/alternative foods</i> |
|---|--|
|  |  |
| Deep-fried foods, eg pakoras, samosas, fried dumplings | Whole grains, eg chickpeas, samosas baked instead of fried, and boiled dumplings |
| High-sugar/high-fat foods, eg Indian sweets such as Ghulab Jamun. | Milk-based sweets and puddings, eg Rasmalai |
| High-fat cooked foods, eg parathas, oily curries, greasy pastries | Alternate with chapattis made without oil, and baked or grilled meat and chicken. |
| <i>Cooking methods to avoid</i> | <i>Alternative cooking methods</i> |
| Deep frying | Shallow frying – usually very little difference in taste |
| Frying | Grilling or baking is healthier and helps retain the taste and original flavor of the food,. |
| Curries with excessive oil | Start with measuring the oil used in curry and try to bring the oil content down gradually, e.g. reducing 5 tablespoons to 4. This is a good way of reducing oil without noticeable difference in the taste. A useful tip is to use more onions and tomatoes in the bulk of the curry. |

How to Avoid Gaining Weight during Ramadan

By: Nabila Suleman (M.Sc) Clinical Dietitian



VS



Fasting during Ramadan can possibly cause weight gain in some people. And by, regulating food intake in the evenings weight gain can be controlled. Consuming less food will in turn decrease the calories consumed, that will allow losing or maintaining weight during this holy month.

What are the reasons for weight gain during Ramadan?

- Eating continuously, especially between Iftar and Suhour, which is sometimes accompanied by tiredness because of the feeling of fullness
- Inactivity and lethargy after Iftar
- Consuming large portions of food, more than the usual
- Eating fried food and high fat and high calorie foods (pakoras, pastries and samosa) in big amounts, especially in the evening
- Going out for Iftar or inviting guests over putting one within reach of large varieties and quantities of food

Ways to Help Control Weight Gain

1. Avoid overeating: Have a light Iftar that includes reasonable food portions
2. Chew food slowly to avoid indigestion.
3. Have iftar light, like salad or soups.
4. Drink at least eight glasses of water.
5. Have fresh fruits and fresh juices without added sugar, instead of the readymade ones.
6. Choose low fat dairy products and lean meats
7. Try Eat fruit salad instead of sweets.
8. Walking everyday for at least half an hour to one hour in order to burn the extra calories

Healthy Cooking Also Plays A Role!

When cooking, make your favorite Ramadan recipes healthier by avoiding deep frying whenever possible. Instead, reduce the amount of fat in meals by cooking food with a little bit of vegetable oil, baking, roasting, steaming or grilling. Enhance the seasoning of dishes by using fresh herbs and spices,

Hyperhidrosis

By: Ms. Erum Ghafoor (Diabetes Educator)



Alternate name: *Excessive Sweating*

“Sweating may be a symptom of thyroid problems, Diabetes or infection.”

Do you sweat more than others? Does a five minute workout leave you Sopping wet? Do you wipe your hands before every hand shake?

If Answer is YES then you should be serious about it. In most cases, excessive Sweating is harmless but sometimes heavy sweating is sign of a medical Condition with many possible causes. It is not a disease but it can be a Symptom of another medical condition such as a disorder of nerves. It is extremely important to get an accurate diagnosis before trying to find a

Cure. Many diseases and conditions share common symptoms so if you just sweat more than others when it is hot or you are exerting yourself, that's not usually a sign of trouble. Actually sweating is a normal reaction when your body's working harder and need to cool itself down.

Excessive Sweating is more common in obese or overweight people. There are two basic types of excessive sweating.

- ❖ Localized Sweating (Primary Focal Hyperhidrosis)
- ❖ Generalized Sweating (Secondary General Hyperhidrosis)

Risk Factors for Excessive Sweating :

| | |
|----------------------|---------------------------------|
| Hormones | Estrogens low, Hyperthyroidism. |
| Mental | Stress. |
| Metabolic | Hypoglycemia. |
| Nervous System | Guillan-Barre Syndrome. |

If you have any of the following symptoms, you should see a doctor immediately.

Night sweats: if you're waking up in a cold sweat.

Generalized sweating: if you're sweating all over your body.

Asymmetrical sweating : if you notice that you're only sweating from one side of your body, like one armpit.

Sudden changes: if you are sweating has suddenly gotten worse.

Late onset: if you develop excessive sweating when you're middle -aged or older.

Symptoms after medication changes: if an outbreak of excessive sweating started up after you began a new medication.

Sweating accompanied by other symptoms like fatigue, insomnia, increased thirst, increased urination, or cough.

Treatment of Excessive Sweating

There is no cure for primary focal hyperhidrosis, there are some ways to help control the symptoms.

Antiperspirants . Special over-the-counter or prescription sprays, lotions, and roll-ons can help.

Iontophoresis. This treatment uses low-level electrical impulses to temporarily disable the sweat glands.

Medications. Some drugs can stop the sweat glands from kicking into action.

Botox. Injections of Botox can temporarily stop the nerves from triggering excessive sweating.

Surgery. One approach is to cut a nerve in the chest that triggers excessive sweating. Another is to surgically remove some of the sweat glands.

For instance, hyperhidrosis caused by an overactive thyroid may be resolved by treating the thyroid with medication or surgery. Excessive sweating caused by diabetes may disappear once glucose levels are under control. If a medication is causing your excessive sweating, your doctor may be able to prescribe a different drug. Sometimes, the underlying cause of hyperhidrosis can't be cured. Or you might really need a medicine that's causing excessive sweating as a side effect.

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