

ROLE OF CARBOHYDRATE IN THE MANAGEMENT OF DIABETES

SPEAKER MS RUBA AL HOURANI, HOD DIETETICS RAK HOSPITAL

Ms Ruba Al Hourani, HOD Dietetics Dept RAK Hospital, was the speaker for the 3rd Dia-beat Webinar & spoke about the **Role of Carbohydrates in the Management of Diabetes**.

1. Ms Ruba mentioned that **Diabetes was a state of elevated blood sugar levels in the blood**, explaining that Sugar in the body was derived from food eaten, specifically from Carbohydrates. This sugar was absorbed from the gut, by the blood & transferred to the muscle & other tissues, by insulin, secreted by the Pancreas. In the tissue sugar was converted & used as energy. The lack of absorption of sugar from the blood, could be caused by the lack of insulin, due to the malfunction of the Pancreas. This is commonly known as Type 1 Diabetes, & accounts for less than 10% of diabetics. Type 2 Diabetes is the more common form of Diabetes, accounting for over 90% of Diabetics, & is caused by a food intake that is high in calories or carbohydrate. In this instance the insulin produced is normal, but the quantity of food/ carbohydrate intake is too high, & if the individual is sedentary & not physically active, it remains unutilized. This excess carbohydrate is converted into fat which remains in the body causing obesity, & along with the excess sugar remaining in the blood, causes several organs to malfunction including the Heart, resulting in Coronary Artery Disease, Kidneys, causing Renal Failure, the Nerves, causing Neuropathy & Strokes, & the Eyes, causing vision problems, etc.

2. The Good News Ruba mentions is, that if the diet is suitably controlled, then along with daily moderate exercise activity, weight can be managed, & this, with adherence to appropriate Medication if prescribed, is the best way to control diabetes.

3. The food we eat, is divided into,

-**Macro Nutrients**, ie Carbohydrates, Protein, Fat, & **Micro Nutrients** comprising, Minerals & Vitamins.

-**Carbohydrates** includes grain, such as rice wheat, & maize containing starch. Vegetables & Fruit are also carbohydrate but contain more fibre. 60% of our food intake must come from Carbohydrate, & while starch gives you energy, fibre is valuable for cleaning out the Gut & purifying the Blood.

-**Protein** comes from both Animal sources such as Meat, Poultry & Fish, Eggs etc & Non- Meat sources such as Pulses & Gram, including Lentils Beans, Nuts etc. 15-25 %, of our food should be Protein, for good growth in children & repair of tissue in adults

-**Fats**, include Oils, Butter Cheese. 10% of our food must come from here. We should avoid Hydrogenated & Transfats as contained in most Commercial foods. We should also restrict Saturated oils, such as Coconut oil & Ghee. Mono Saturated oils such as olive oil, mustard oil , peanut oil are good, but should be eaten frugally as also Poly unsaturated oils such as sunflower oil, Rice Bran Oil etc

- Minerals & Vitamins are micronutrients. Vitamin A,B, C, D, E K, etc & Minerals, such as Sodium Pottasium, Calcuim, Iron, Magnesium etc are contained in trace quantities in all foods & a balanced diet is therefore advocated

4. Ms Ruba however emphasized that the webinar specifically related to **Managing Carbohydrate as a means of controlling Diabetes**, & the reason why this is important is because 60% of our diet is carbohydrate, & that all carbohydrates are finally broken down into Sugar for absorption, & it is this blood sugar that is the starting point of Diabetes. She mentioned that there was no universal Diabetes Diet, & Diets for individuals with Diabetes should be planned individually by the Nutritionist, keeping several things in mind including food preferences, weight, medication, etc. She offered the following suggestions in relation to a low carbohydrate diet.

- **Starch Vs Fibre.** Rice, Wheat, Maize, Pasta, Bread, etc, are carbohydrates which are full of starch & high in Calories. These must be taken sparingly as opposed to Fruit & Vegetable which are high in Fibre & low in Calories. Incidentally fruit & Vegetable are also storehouses of Vitamins & Minerals.

- **Processed vs Whole Grain.** Processed foods include milled products such as white bread, white rice, table sugar, these foods are bereft of fibre as opposed to whole grain multi grain bread, brown rice, jaggery, etc. They are also high in the Glycemic Index & cause sugar spikes in the blood.

- **Meals, Timings & Grazing.** In order to avoid too much of a sugar spurt, meals should be eaten at regular intervals & in smaller quantities. This is known as Grazing. Eating 6 small meals within the daily calorie allowance, is better than eating 2 large meals, which will result in a High GI spurt soon after the meal.

- **Glycemic Index.** This index identifies the effect of sugar on the blood from foods eaten. Foods with a High GI, raise the blood sugar, & should be avoided by diabetics. These include, Processed foods, Desserts, Pastries, White Bread, Pasta, White Rice, Sugar, Fruit Juice, & such. Low GI Foods that are preferable include, Bran, Oats, Whole Grain, Meat, Vegetable, & Whole Fruit, etc.

- **Plate Serving.** Utilising a plate as reference, for a Diabetic, a balanced meal is, 50% of the serving on the plate should be Fibre, ie a Raw/Cooked vegetable salad, 25% of the plate should comprise whole grain products, ie Mash, Bread etc, & 25% should comprise protein in the form of, chicken, meat, fish, or if Veg, Pulses, Gram, Beans.

5) Questions & Answers. Ms Ruba answered the following questions.

Q) Which is the Best Diets for Diabetes:

A) The best diets for Diabetics selected by Forbes Health care in 2024 are, The Mediterranean Diet, The DASH Diet & The ORNISH Diet.

-The Mediterranean Diet is a balanced diet emphasizing Whole Grain & Daily Exercise.

-The DASH (Dietary Approach to Stop Hypertension) Diet in addition, manages overweight & Hypertension

-The ORNISH Diet, advocates a fully vegetarian Diet, with no non veg, including milk, butter etc, & recommends Yoga

Q) Fruit vs Fruit juice, which is better for Diabetes,

A) One Orange has about 70 Calories, has a low Glycemic Index, & has a lot of Fibre. One glass of Orange Juice is made from 5 oranges, ie 350 calories, is high in the GI Index, & is low in Fibre. Consequently whole fruits are better than fruit juices.

Article link: <https://www.zawya.com/en/press-release/companies-news/rak-hospitals-dia-beat-webinar-sheds-light-on-the-critical-role-of-carbohydrates-in-diabetes-management-e3zc6zfb>

Webinar Link: <https://www.youtube.com/watch?v=rLCajya3ag>