



# Nutritional Profile For The Diabetic Women

Dr.D.Anitha

Professor, Department of Nutrition, Sree Balaji College of Nursing, Bharath Institute of Higher Education and Research, Chennai-73.

## ABSTRACT

Diabetic Women were selected to this study. Anthropometric measurement and dietary pattern have been taken and it was analyzed statistically. In Anthropometric, the height, weight and body mass index taken for the selected subjects. Food Frequency questionnaire and 24 hour recall method have seen to assess nutritional status.

**Keywords:** Anthropometric measurements, Dietary pattern, Food frequency questionnaire, 24 hour recall method.

## INTRODUCTION

More than 199 million women are currently living with diabetes, and by 2040<sup>1</sup> this is projected to increase to 313 million. Diabetes is the world's second leading direct cause of death among women, causing 2.1 million deaths annually, most of which are premature<sup>1</sup>. For several reasons, the issue of women and diabetes is significant.

Sex not only affects the susceptibility to illness, but also impacts women's access to health services and health-seeking behaviour, which can worsen both diabetes ' short-term and long-term adverse effects. Women suffer disproportionately from cultural, political and social inequality in low-income countries, and ultimately from poor health, lack of education and employment. Evidence based “Nutrition Principles and Recommendations for the Treatment and Prevention of Diabetes and Related Complications” outline the goals of medical nutrition therapy for type 1 and type 2 diabetes mellitus. Those goals are to attain and maintain optimal metabolic outcomes, to prevent and treat the chronic complications of diabetes, to improve health through healthy food choices and through physical activity, and to address individual patient nutritional needs. Discussion focuses on moderate caloric restriction and an increase in physical activity. Carbohydrate counting is offered as an option for all patients with diabetes<sup>2</sup>.

## MATERIALS AND METHOD

### Assessment of Nutritional profile

**(i) Anthropometric measurement:** Nutritional anthropometry is concerned with measuring the nutritional status of different ages of the body. This helps in determining sub-clinical malnutrition levels.

**Height:** Height was measured with a tape to the nearest cm. The subjects were asked to stand upright against the wall without shoes, heels together and eyes forward.

**Weight: Weight** was measured using conventional spring balance that was held on a firm horizontal surface. Every day the scale was tested and calibration was done with "established" weight subjects being asked to wear light clothing and weight was registered at the nearest 0.5 kg<sup>2</sup>.

**Body Mass Index (BMI):** BMI was measured using the formula weight in (KG)/HT in(M<sup>2</sup>). The body mass index or outlet index accounts for differences in body composition by determining the adiposity rate by weight-to-height ratio and reduces frame size dependence.

#### (ii).Dietary pattern

Data regarding types of diet, meal pattern, food consumption(FFQ),Skipping meals, modified diet, food allergy, milk consumption, major oils, canned foods were collected from all the 200 samples and nutritive value were calculated for only 100 sample.

Dietary pattern validating and instrument involves comparing estimates of intake obtained by that instrument test of the validity of the 24 hours. Dietary recall done by comparing actual with recalled intakes for eight nutrients and the mean adequacy ratio for a sample of hundred diabetic women.Diabetic nutrition therapy provided for individuals with diabetes must be based on research documenting effectiveness. The role of differing macronutrients percentages, eating patterns and weight loss interventions are controversial<sup>3</sup>.

Evidence suggests that gliadin (a protein in gluten) can play a role in type 1 diabetes development, but the mechanism is not fully understood. Increased intestinal permeability caused by gluten and the subsequent loss of intestinal barrier function, which allows pro-inflammatory substances to pass into the blood, may induce autoimmune response to type 1 diabetes in genetically predisposed individuals. There is evidence from animal models studies that eliminating gluten from the diet may prevent the onset of type 1 diabetes, but there has been contradictory human research<sup>5</sup>.

## RESULT AND DISCUSSION

**Table – 1 Mean Anthropometric measurement of diabetic women**

| Age in years | Height<br>Mean $\pm$ SD | Weight<br>Mean $\pm$ SD | BMI<br>Mean $\pm$ SD |
|--------------|-------------------------|-------------------------|----------------------|
| 35-85 years  | 150.90 $\pm$ 5.35       | 70.50 $\pm$ 11.85       | 27.94 $\pm$ 3.68     |

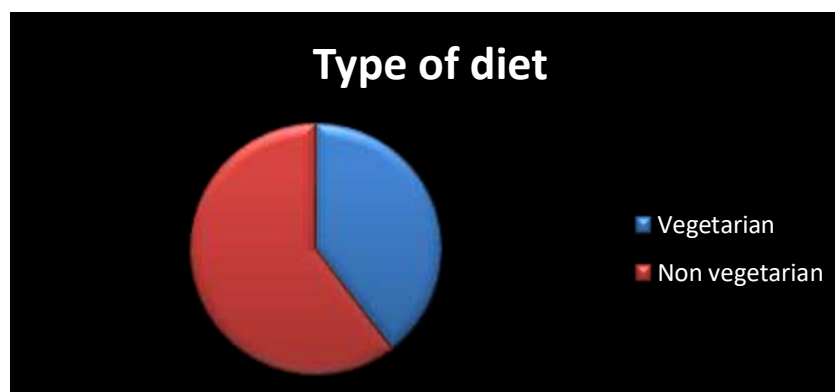
Mean weight of the selected subjects belonging to the age group of 35-85 years was 70.50 kg respectively, mean heights of the selected subjects belonging to the age groups of 35-85 years were 151.90 cm respectively. Mean basal metabolic rates of the selected subjects were 27.94 and mean blood pressure of the selected subjects 1.77. Most of the mean weight of the subject were so high. The height of an individual is influenced both genetic and environment factors<sup>6-9</sup>.

**Table – 2 Mean Nutrient intake of the selected subjects**

| Age                    | Nutrients | RDA                  | Mean $\pm$ SD        | t.value  |
|------------------------|-----------|----------------------|----------------------|----------|
| 35-85 years<br>(n=100) | Energy    | S.W-1875<br>M.W-2225 | 1586.49 $\pm$ 279.01 | 10.340** |
|                        | Protein   | 50 mg/dl             | 44.28 $\pm$ 10.64    | 5.373**  |
|                        | Fat       | 20 mg/dl             | 52.97 $\pm$ 16.60    | 19.862** |
|                        | Iron      | 30 mg/dl             | 8.49 $\pm$ 2.65      | 81.065** |
|                        | Calcium   | 400g                 | 407.35 $\pm$ 265.04  | 0.277NS  |

There was a significant difference for all nutrients except calcium. The selected subjects were taken low level of calcium intake for their food consumption

**Figure -1 Types of diabetes**



## SUMMARY AND CONCLUSION

Dietary pattern constituents and essential part of any completed study on nutritional status in individual and group. Study found that exercise combined with dietary changes in control diabetic in women for all type of diabetes. Dietary factors are mainly supported by evidence from observational studies and randomized controlled trails(RCTs) of surrogate markers for type 2 diabetes mellitus (T2DM), They are consistent with current recommendations to emphasize consumption of whole grains, nuts, seeds, legumes, sea food, fruits and vegetables, while limiting intakes of saturated fatty acids, refined carbohydrates and processed meats. Additional dietary intervention RCTs are needed to assess the efficacy of these promising dietary interventions for delaying or preventing the onset of T2DM<sup>3</sup>.

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Conflict of Interest - Nil

## References

1. Antvorskov JC, Josefsen K, Engkilde K, Funda DP, Buschard K. Dietary gluten and the development of type 1 diabetes. *Diabetologia*. 2014 Sep 1;57(9):1770-80.
2. Carolyn leontos, 2003, University of Nevada Cooperative Extension in Las Vegas, Leontos@sbcglobal.net, PMID:12962206.
3. Maxicon J Franz, Diabetes Nutrition Therapy, *Am.J.Med.Sci*, 2016, PMID:27079343.
4. Orsolya M Palcias, 2019, Midwest Biomedical Research / centre for metabolic and cardiovascular health, IL, USA.
5. Knig. H et al., Human Nutrition Information Service, Home and Garde, 2000: 950-955.
6. Krause.R., International text book of diabetes Mellitus, 2<sup>nd</sup> edition, Edinburgh, 1997 : 42-49.
7. Popkin.B.M., The Epidemiology of diabetes mellitus, An International Perspective, John Wiley & sons Ltd, 2001 : 42-49.
8. Yusuf.S., et al , Dietary guidelines for American, 2001 : 70-81.
9. Nicolaisen.I, Cultural perceptions, gestational diabetes, and development. *Int J Gynaecol Obstet.* ;104(Suppl 1): 2009 : 8-10.