UNIVERSITY OF CAMBRIDGE

Nutrition Therapy

13th WHO/IDF Cambridge Diabetes Seminar

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INTERNAL MEDICINE/ DIABETES

BUENOS AIRES, ARGENTINA

DIETARY PATTERNS

The way people eat has changed and continues to evolve worldwide, caused by lifestyle transitions.

Eating, snacking and away-from-home eating have increased in low and middle income countries, and the overall proportion of highly processed food in diets has raised.

GLOBAL FOOD SUPPLY SHIFTS:

- Shift to refined carbohydrates—refined grains and added sugars
- Increasing intake of processed vegetable oils
- Increasing global consumption of meat, particularly processed
- Marked growth of purchases of packaged foods and beverages, including ultra processed foods and a robust increase in added sugar in beverages

Food Consumption and its Impact on Cardiovascular Disease: Importance of Solutions Focused on the Globalized Food System
Anand SS et at. Journal of the American College of Cardiology (2015)

DIET, DIABETES AND CARDIOVASCULAR DISEASE

- The Global Burden of Disease Study cites DIET AS A MAJOR FACTOR behind the rise in hypertension, Diabetes Mellitus (DM), obesity, and other cardiovascular disease (CVD) components.
- Data which relates diet to CVD and DM has predominantly been generated from high income countries, but disease burden is significant in low and middle income countries as well, thus, it becomes necessary to conduce further studies in these regions.

RESEARCH INTEREST: DIET RELATED HEALTH OUTCOMES.

Assess the results (biochemical parameters, weight reduction and quality of life scale) secondary to modification in dietary patterns.

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REFINED CARBOHYDRATES	✓ Systematic reviews and high quality randomized controlled trials support a harmful effect of highly refined, high– glycemic load carbohydrates and association with T2DM.
SUGAR SWEETENED BEVERAGES	✓ Evidence supports association between these and overweight, obesity, hypertension and T2DM.
FATS AND OILS	✓ Mono and polyunsaturated fatty acids appear to reduce coronary heart disease risk, and sources of the n-3 polyunsaturated fat alpha-linolenic acid are cardioprotective. These, as part of a low-GI diet, improve glycemic control and blood lipids in T2DM. ✓ There is strong evidence for adverse effects of saturated fat and trans fatty acids on lipids and cardiovascular disease risk.
PROTEIN SOURCES (MEAT/FISH/DAIRY/EGG/ NUTS/ LEGUMES)	✓ Reducing red meats (specially processed) and increasing fish, nuts, legumes, and possibly fermented dairy products are likely beneficial.
FRUITS AND VEGETABLES	✓ In the DASH RCT, higher intake of fruits and vegetables, reduced blood pressure, TC, LDL-C, and HDL-C without affecting TG and reducing T2DM risk.

2018 Clinical Practice Guidelines. Nutrition Therapy.
Sievenpiper JL et al. Can J Diabetes (2018)

Table 1. Diets currently considered useful for managing diabetes worldwide

Dietary pattern	Elements
Mediterranean diet	Includes abundant plant-based food, olive oil as the principal source of dietary lipids, dairy products consumed in low to moderate amounts, low red meat consumption, and low to moderate wine consumption.
DASH	Emphasizes fruits, vegetables, and low-fat dairy products and includes whole grains, poultry, fish, and nuts. Reduced consumption of saturated fat, red meat, sweets, and sodium.
Vegetarian diet	Avoids all animal flesh-based foods and animal-derived products. Some modified versions allow eggs (ovo) and/or dairy products (lacto).
Low-carbohydrate diet	Carbohydrate intake reduced to 20–40 g/meal with sweets containing 10 g of carbohydrate per day (our definition). There are several other definitions: lower than 130 g/day (Accurso et al.) and lower than 150 g/day (Westman et al.)

Paradigm Shifts in Nutrition Therapy for Type 2 Diabetes – Nutrition Therapy for Diabetes
Yamada S et al The Keio J Med (2017).

OVERALL OBJECTIVE

TO DETERMINE EFFECTIVENESS OF DIFFERENT DIETARY PATTERNS (DASH DIET VS LOW CARBOHYDRATE DIET VS STANDARD DIET)

MATERIAL AND METHODS:

- **DESIGN:** PROSPECTIVE QUASI EXPERIMENTAL DESIGN/ BEFORE AND AFTER DESIGN
- **SETTING/POPULATION:** T2DM patients in an outpatient clinic in Buenos Aires, Argentina. June 2019 to May 2020.
- **VARIABLES:** Baseline and 2-6-12 months follow up measurements (lipids, glycemia, HbA1C, weight, lifestyle questionnaire)

LIMITATIONS: Threats to internal validity (over the course of a longer period of time, more circumstances can arise that may obscure the effects of intervention), confounders. No randomization. Nutrition is multidimensional.
STRENGTHS: Provides preliminary evidence for intervention effectiveness (but not a clinical trial). Shows immediate impact of a short- term program.

Goals of Nutrition Therapy for Adults With Diabetes (ADA 2019)

- To promote and support healthful eating patterns, emphasizing a variety of nutrient dense foods in appropriate portion sizes.
- To improve overall health and:
  - Achieve and maintain body weight goals.
  - Attain individualized glycemic, blood pressure, and lipid goals.
  - Delay or prevent the complications of Diabetes.
- To address individual nutrition needs based on personal and cultural preferences, health literacy and numeracy, access to healthful foods, willingness and ability to make behavioral changes, and barriers to change.
- To maintain the pleasure of eating by providing nonjudgmental messages about food choices.
- To provide an individual with diabetes the practical tools for developing healthy eating patterns rather than focusing on individual macronutrients, micronutrients, or single foods.

Standards of Medical Care in Diabetes
American Diabetes Association (2019)

SUMMARY/ CONCLUSIONS

- When assessing Dietary Patterns, consider: efficacy, nutritional adequacy, acceptability, and sustainability. Changes in nutrition therapy must be dynamic and based on not only scientific evidence but also each patient's narrative.
- It is known that nutrition therapy can lead to diminish cardiovascular disease, control and possible remission of T2DM, regardless, medical research continues to support evidence-based health policies and should aim to orient food regulations.

"Understanding of foods and macronutrients in relationship to disease is broadly clear; however, major gaps exist both in dietary pattern research and ways to change diets and food systems"


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72
73
memory
17:40
16- 2
113
mg/dL
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