4th Middle East Congress on Clinical Nutrition
5 – 7 March 2015
Ajman, UAE
Organized by EDC, Center for Diabetes Education, Atlanta, USA
Conference Highlights
http://nutrition-me.org/
Number of people with diabetes in the world, 2013

- 382M people living with diabetes
- 46% undiagnosed

- 37M in North America and Caribbean (NAC)
- 56M in Europe (EUR)
- 72M in South-East Asia (SEA)
- 138M in Western Pacific (WP)
- 24M in South and Central America (SACA)
- 20M in Africa (AFR)
- 35M in Middle East and North Africa (MENA)

Total: 382M
• In 2008—2009, the annual incidence of diagnosed diabetes in youth in the USA was estimated at 18,436 with type 1 diabetes; 5,089 with type 2 diabetes.

• Globally, incidence and prevalence in children varies substantially among countries, ages and cultural groups, but it is increasing.
• Obesity is a major contributor to diabetes risk in children, regardless of family history
  – Once they develop T2DM, CVD and nephropathy are significant risks

• Socioeconomic status dictates obesity and subsequent risk of developing diabetes and other co-morbidities
  – Food policy, sustainability
  – Global obesity policies needed

Diabetes Care, 2011 (34): 1249
Diabetes Care, 2014 (37):2989
Current Diab Reports, 2014 (14), 454
Current Diab Reports, 2014 (14), 456
The Lancet, 2015. Published online Feb 18, 2015: http://dx.doi.org/10.1016/S0140-6736(14)61746-3
Current Nutrition Guidelines

- WHO
- Dietary Guidelines
- ADA
- ISPAD
- AAP
- IDF
ISPAD Nutrition Guidelines

- T2DM in children and young people
  - Achieve normal glycemia
  - Prevent further weight gain
  - Address comorbidities – HTN, CVD
  - Lifestyle changes
    - Entire family included in meal plan changes
    - Reduce calories: focus on portion sizes, lower intake of high energy, fat and sugar containing foods; eliminate caloric beverages (juices, soft drinks)
    - Increase physical activity to 60 min/day
    - Low fat, low GI foods

Pediatric Diabetes, 2014;15 (20): 135
• Management of Newly Diagnosed T2DM in Children and Adolescents
  – Lifestyle modification, including nutrition and physical activity
  – Incorporate the Academy of Nutrition and Dietetic’s Pediatric Weight Management Evidence-Based Practice Guidelines
  – 60 min/d of physical activity
American Academy of Pediatrics

- Snacks, Sweetened Beverages, Added Sugars, and Schools
  - Select a mix of foods from the five food groups: vegetables, fruits, grains, low-fat dairy, and quality protein sources
  - A variety of food choices
  - Avoid highly processed foods
  - Use small amounts of sugar, salt, fats and oils with highly nutritious foods to enhance enjoyment and consumption
  - Focus on portion sizes

Pediatrics, 2015; 135(3)
• Nutrition Guidance for Healthy Children Ages 2-11
  – 45-65% carbs
  – 30-40% fat (age 1-3); 25-35% fat (age 4-18)
  – 5-20% protein – young children; 10-30% -- older children
  – <25% added sugars
  – Low cholesterol, sta fat, trans fat
  – Fiber: 19 g (1-3 y); 25 g (4-8 y); 26-31 g (F/M 9-13 y)

J Academy Nutr Dietetics, 2014; 114 (8): 1257
Academy of Nutrition and Dietetics

Figure 1. Eat Healthy Play Hard mini-poster. Available at: [www.fns.usda.gov/sites/default/files/eatsmartminiposter.pdf](http://www.fns.usda.gov/sites/default/files/eatsmartminiposter.pdf).

J Academy Nutr Dietetics, 2014; 114 (8): 1257
How Can We Effectively Deliver Nutrition Messages to Children and Adolescents?

- No one method will be 100% effective
- Individuals learn differently
- Depends on stages of readiness to change
- Interaction that engages the learner is most effective
  - Provides opportunity for questions and feedback
  - Can be delivered individually or in groups
- **More frequent** nutrition education is needed for sustained benefit
- Pick one message at a time
IF KIDS DESIGNED THE FOOD PYRAMID

HEY, WE FORGOT POTATO CHIPS!
### Dietary Reference Intakes Set by the FNB: RDA for Micronutrients During Childhood, Ages 9 to 13 Years

<table>
<thead>
<tr>
<th>Micronutrient</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotin</td>
<td>20 mcg/day (AI)</td>
<td>20 mcg/day (AI)</td>
</tr>
<tr>
<td>Folate</td>
<td>300 mcg/day&lt;sup&gt;a&lt;/sup&gt;</td>
<td>300 mcg/day&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Niacin</td>
<td>12 mg/day&lt;sup&gt;b&lt;/sup&gt;</td>
<td>12 mg/day&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Pantothenic Acid</td>
<td>4 mg/day (AI)</td>
<td>4 mg/day (AI)</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>900 mcg/day</td>
<td>900 mcg/day</td>
</tr>
<tr>
<td>Thiamin</td>
<td>900 mcg/day</td>
<td>900 mcg/day</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>600 mcg/day (2,000 IU/day)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>600 mcg/day (2,000 IU/day)&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;6&lt;/sub&gt;</td>
<td>1 mg/day</td>
<td>1 mg/day</td>
</tr>
<tr>
<td>Vitamin B&lt;sub&gt;12&lt;/sub&gt;</td>
<td>1.8 mcg/day</td>
<td>1.8 mcg/day</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>45 mg/day</td>
<td>45 mg/day</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>15 mcg/day (600 IU/day)</td>
<td>15 mcg/day (600 IU/day)</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>11 mg/day (16.5 IU/day)&lt;sup&gt;d&lt;/sup&gt;</td>
<td>11 mg/day (16.5 IU/day)&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>60 mcg/day (AI)</td>
<td>60 mcg/day (AI)</td>
</tr>
<tr>
<td>Calcium</td>
<td>1,300 mg/day</td>
<td>1,300 mg/day</td>
</tr>
<tr>
<td>Chromium</td>
<td>25 mcg/day (AI)</td>
<td>21 mcg/day (AI)</td>
</tr>
<tr>
<td>Copper</td>
<td>700 mcg/day</td>
<td>700 mcg/day</td>
</tr>
<tr>
<td>Fluoride</td>
<td>2 mg/day (AI)</td>
<td>2 mg/day (AI)</td>
</tr>
<tr>
<td>Iodine</td>
<td>120 mcg/day</td>
<td>120 mcg/day</td>
</tr>
<tr>
<td>Iron</td>
<td>8 mg/day</td>
<td>8 mg/day</td>
</tr>
<tr>
<td>Magnesium</td>
<td>240 mg/day</td>
<td>240 mg/day</td>
</tr>
</tbody>
</table>
Portion size

40 grams

Carbs 30 g

60 grams

Carbs 48 g
# Dietary Priorities for Health

<table>
<thead>
<tr>
<th>EAT:</th>
<th>LIMIT:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Fish, seafood</td>
<td>• Starches, refined grains, sugars</td>
</tr>
<tr>
<td>• Fruits</td>
<td>• Processed meats</td>
</tr>
<tr>
<td>• Nuts</td>
<td>• Sweetened drinks</td>
</tr>
<tr>
<td>• Vegetables, legumes</td>
<td>• Industrial trans fat</td>
</tr>
<tr>
<td>• Vegetable oils</td>
<td>• Salt</td>
</tr>
<tr>
<td>• Whole grains</td>
<td>• Alcohol</td>
</tr>
<tr>
<td>• Moderate dairy</td>
<td></td>
</tr>
</tbody>
</table>

Mozaffarian, Appel, & Van Horn. Circulation 2011
The Macrobiotic diet is a natural diet plan that is based on the traditional Chinese philosophy of “Yin-Yang”.

Yin and Yang are used to describe how opposite forces are interconnected and interdependent in the natural world. In fact everything has both Yin and Yang aspects.

Yin and Yang are continuously attracting each other to create balance.

George Ohsawa originally brought the macrobiotic diet to Europe in the 20° century.

Every food is viewed as having Yin and Yang properties.
Nutritional characteristics:

- Whole grains: brown rice, millet, barley.
- Seasonal vegetables cooked and raw (onions, carrots, cabbage, chicory, parsley, radish).
  - Legumes: chickpeas, lentils, Adzuki beans, black beans.
- Wakame, Nori, Hijiki, Kombu and sea salt
- Sea salt, Sesame salt (Gomasio) and Green Tea.
- NO animal protein or fat and NO simple sugars.

Ma-PI diet:

- 70% carbohydrate
- 18% fat
- 12% protein
- 30-35 g fiber/1000 Kcal
The Purpose of Patient Handouts

• Handouts:
  • Raise awareness
  • Aid in choosing behaviors
  • Encourage behavior change
  • Teach behaviors

• Handouts must do more than
  • inform; information must be
    • applied to be valuable!
Patient Handouts are Important

• Spoken messages are forgotten quickly and so need to be reinforced with informative handouts . . .

• Most people read a handout once
  • and act on what they remember.
Food Dome

- Provides dietary guidelines for Arab people so as to reduce the risk of diet-related diseases, especially those related to non-communicable diseases such as heart disease, type 2 diabetes, hypertension, osteoporosis, obesity and some types of cancer.
  – Arab Center of Nutrition definition
FOOD DOME
DIETARY GUIDELINES FOR ARAB COUNTRIES

Practice medium activity like walking 30 minutes most days
## Servings per day

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Servings</th>
<th>Serving sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals and their products</td>
<td>6-11</td>
<td>1 slice, ¼ Arabic flat bread, 30g cornflakes, ½ cup cooked cereals (rice, wheat, oats, macaroni), 6 small crackers (use whole meal cereals)</td>
</tr>
<tr>
<td>Vegetables</td>
<td>3-5</td>
<td>1 cup raw leafy vegetables or cooked vegetables, ¼ cup vegetable juice</td>
</tr>
<tr>
<td>Fruit</td>
<td>2-4</td>
<td>1 medium piece of fruit (banana, apple, mango, pear), ½ cup fresh, frozen or canned fruit, ¼ cup fruit juice.</td>
</tr>
<tr>
<td>Milk and dairy products</td>
<td>2-3</td>
<td>1 cup of milk, laban or yoghurt, 45g of cheese, 1 tablespoon cream cheese, 1 ½ tablespoon labnáh (use low fat dairy product)</td>
</tr>
<tr>
<td>Meat, chicken, fish, eggs, legumes and</td>
<td>2-4</td>
<td>50-80g of meat, chicken or fish, one egg, 2 tablespoons of peanut butter, ½ cup legumes, ⅓ cup nuts, 2 tablespoons of seeds.</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Daily</td>
<td>Medium activity like walking (30 minutes for adults and 60 minutes for children, most days).</td>
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# Food Dome

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<th>Vegetables</th>
<th>Cereals and their products</th>
<th>Fruit</th>
<th>Milk and dairy products</th>
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</table>
| - Choose low fat or lean meat  
- Consume legumes at least 3 times a week  
- Consume more fish as possible | - Eat more dark green vegetables like spinach and orange vegetables like carrots | - Eat at least half of cereals of whole grain  
- Eat more of fortified cereals and their products | - Eat variety of fruit  
- Choose fruit during their seasons  
- Drink fresh fruit juice | - Consume low fat milk and their products  
- Consume milk fortified with vitamin D |

<table>
<thead>
<tr>
<th>Suggested daily servings</th>
<th>2-4 servings/day</th>
<th>3-5 servings/day</th>
<th>6-11 servings/day</th>
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<th>2-3 servings/day</th>
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| One serving = 50-80g meat, chicken or fish, ½ cup cooked legumes, one egg | One serving = 1 cup raw vegetables, ¾ cup vegetables juice | One serving = 1 slice, ¼ Arabic bread, 30g cornflakes, ½ cup cooked cereals | One serving = 1 medium piece of fruit, ¾ cup fruit juice | One serving = 1 cup milk, 45g cheese, 1 tbs cream cheese |
Why is it SO hard to change habits?

• Habits are automatic, learned responses
  – Our brain on autopilot
• Our taste buds are programmed to like high fat foods
• Processed and fast foods can be addicting
• We expect things to happen NOW
Changing Habits to Healthier Ones

• Patience is a virtue
  – It will take time to change
• Set realistic goals
  – Baby Steps
• Be more mindful
• Create a plan
• Set specific goals and deadlines
Be active 30 minutes per day, three times per week

- You do not have to do it all at once
- If already active, bump up it to 5 days per week
- Hydrate
- Wear good shoes
- Invest in a pedometer/fitness device (Fitbit) or download an app
  - 10,000 steps per day
- Schedule the time to be active
Be portion savvy

- Use smaller plates
- Avoid keeping snacks/foods in plain view
- Use smaller glasses
- Serve veggies and salads family style
- Pre-portion higher calories snacks/foods
Be portion savvy

• What is a serving
  3 oz meat
  1 ½ oz cheese
  1 baked potato
  1 pancake
  1 cup soup

  ½ c cooked pasta
  2 T PB
  1 tsp butter
  1 tsp olive/canola oil
It is all about the VOLUME

- Foods puffed up with air help us eat less
- Serve soup with dinner
- Start with a salad
- Double the veggies in your entrees
- Savor something sweet at the end