



DIABETES PREVENTION:

the WEIGHT *is over!*

***What you need to KNOW
about DIET***

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Things to consider

- **Success in the Diabetes Prevention Program, the long-term follow-up of those participants, and the Look AHEAD program.**
- **Dietary strategies for weight control and maintenance: what is proven to work?**
- **Diet tips to avoid diabetes or to follow if you are diabetic!**

Diabetes Prevention Program (DPP) Study Design

- **4000 subjects at 25 centers (~170/site); 3-year enrollment**
- **Subjects followed for 3-6 years**
- **Medication groups for double blind, placebo controlled study; separate lifestyle group**
- **Adequate design to detect 33% reduction in progression to diabetes (assuming a 7.5% annual progression rate)**

Diabetes Prevention Program Lifestyle Intervention Arm

- **An intensive program with the following specific goals:**
 - $\geq 7\%$ loss of body weight and maintenance of weight loss
 - **Dietary fat goal: <25% of energy from fat**
 - **Calorie intake goal: 1200-1800 kcal/day**
 - ≥ 150 minutes per week of physical activity

DPP Intensive Lifestyle Intervention Methods

- **Training in diet, exercise, and behavior modification**
- **Low-fat, low-calorie diet**
- **16-session core curriculum (over 24 weeks)**
- **Maintenance phase—minimum of monthly contact**
- **Exercise session at the center 2x/week**

Diabetes Prevention Program Interventions

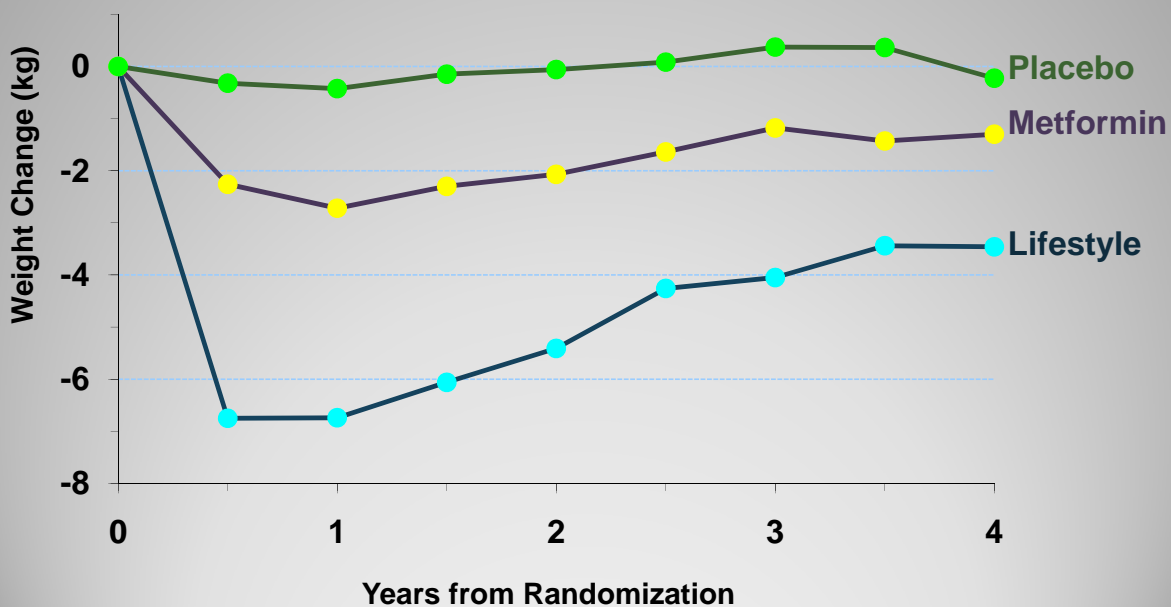
Intensive Lifestyle Goals

- Reduction of fat and calorie intake
- Physical activity at least 150 minutes/week
- Achieve and maintain at least 7% weight loss

Metformin Goals

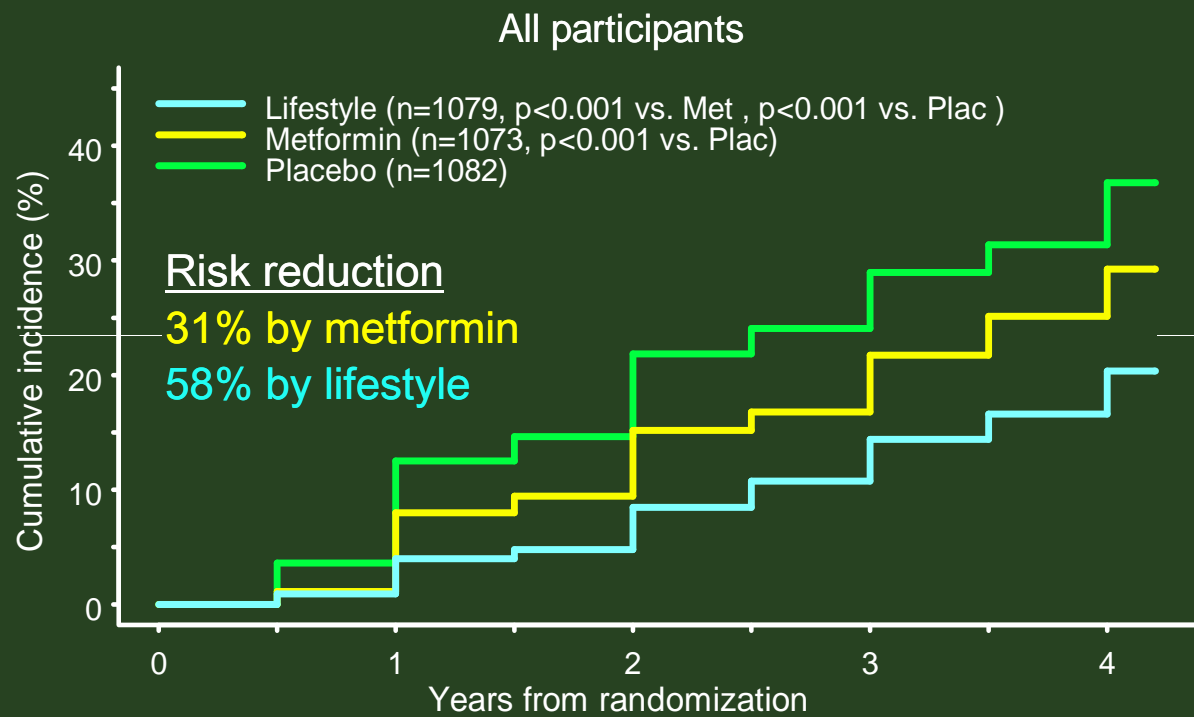
- Metformin 850 mg twice daily

Diabetes Prevention Program Mean Weight Change



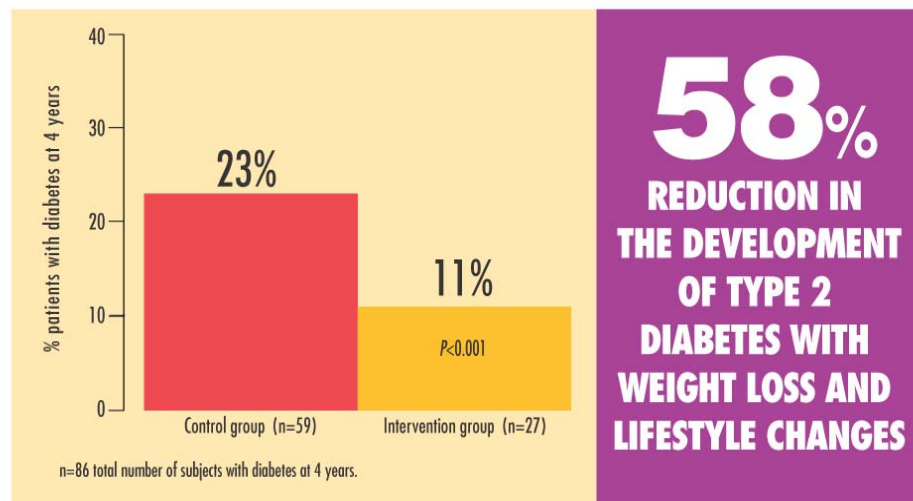
The DPP Research Group, *NEJM* 346:393-403, 2002

DPP: Progression to Diabetes



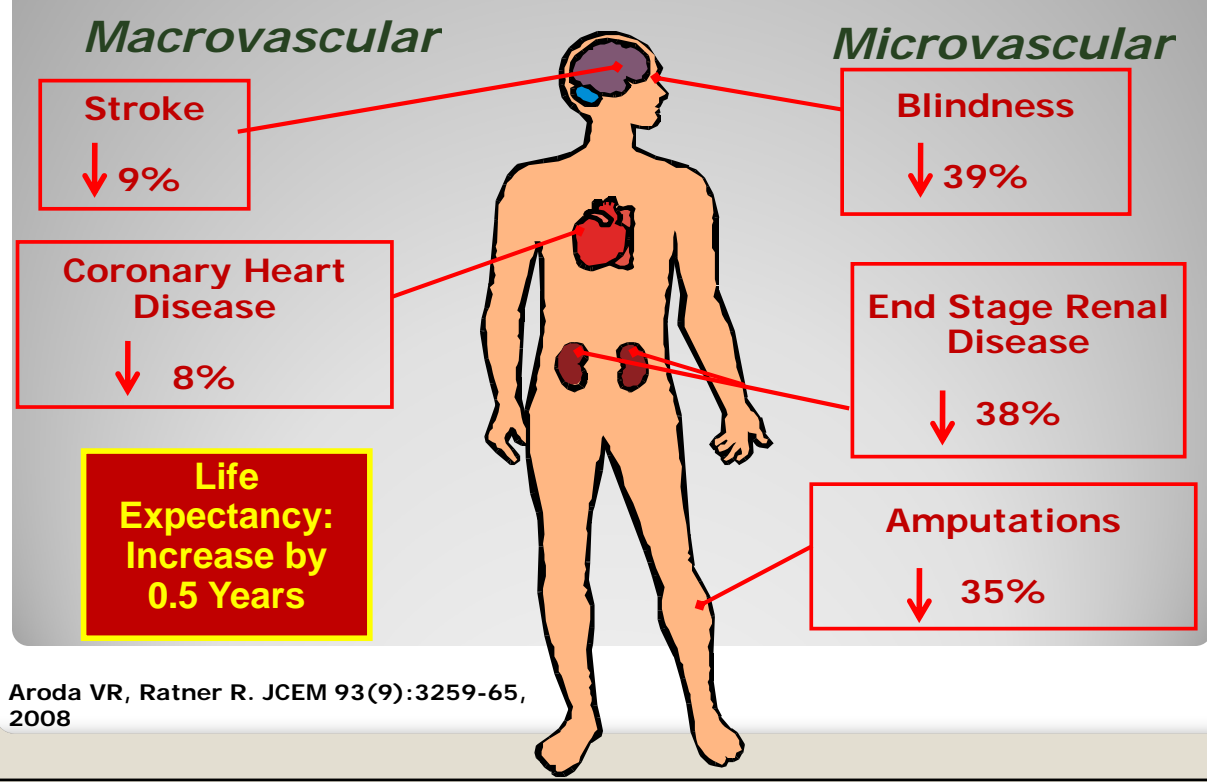
Positive Effects of Weight Loss on Type 2 Diabetes

- Modest weight loss of 5% yields significant results



Tuomilehto J, et al. Finnish Diabetes Prevention Study. *N Engl J Med.* 2001;344:1343.

Potential Lifetime Impact for Pre-Diabetes Lifestyle Intervention



DPPOS (DPP Outcomes Study)



- The DPPOS reports:
- In 10 years, participants in the lifestyle change group delayed type 2 diabetes by about 4 years compared with placebo, and those in the metformin group delayed it by 2 years.
- The benefits of intensive lifestyle change were especially pronounced in the elderly.
- People aged 60 and older lowered their rate of developing type 2 diabetes in the next 10 years by about half.

Look AHEAD (Action for Health in Diabetes) Trial

- Multicenter trial of 5,145 individuals with type 2 diabetes
 - Intensive lifestyle intervention (ILI) caloric restriction, minimum weight loss goal of 7%, & physical activity goal 175 min/wk **versus** diabetes support & education (DSE) sessions
 - **Wt loss: 8.6% (ILI) vs 0.7% (DSE)**
 - **Mean fitness ↑: 20.9% (ILI) vs 5.8% (DSE)**
 - **HbA1c ↓: 7.3 to 6.6% (ILI) vs 7.3 to 7.2% (DSE)**
 - **BP, TG, HDL all improved significantly in ILI vs DSE**

The Look AHEAD Research Group. *Diabetes Care* 2007;30:1374

Dietary Strategies in Look AHEAD

- Diet was based on current ADA recommendations for <30% of calories from fat & <10% from sat fat
- Calorie and fat targets given to each participant
 - For those weighing 250 lbs or less: **1200-1500 kcals**
 - For those weighing over 250 lbs: **1500-1800 kcals**
- Self monitoring of foods eaten, portions, calories, and fat grams
- Meal replacements: 2/day recommended, and 1/day encouraged after the first 4 months

Dietary Strategies in Look AHEAD



- **Healthy, balanced meals, plenty of fruits and vegetables and healthy cooking techniques encouraged**
- **Structured meal plans also given to help with reaching calorie goals**
- **Discussed eating out and making good choices**
- **Calorie density covered in second 6 months (volumetrics)**

Successful weight loss strategies:

Strategy

- ↓ total dietary calories
- ↓ total fat intake

Target

- ↓ portion sizes
- Slow down eating
- ↓ fried foods
- ↓ fats, both in cooking and at table

Most difficult issues in keeping a healthy weight

- **Maintenance** of weight loss
- Continued use of **self-monitoring** of dietary intake
- **Weighing** oneself regularly
- **Continuing behaviors** that enabled initial success (examples: motivation, time management, etc.)



Food Behaviors of Successful Long-term Weight Management: National Weight Control Registry Data

- **Self-monitoring:**
 - **Diet: record food intake daily, limit certain foods or food quantity**
 - **Weight: check body weight ≥ 1 x/wk**
- **Low-calorie, low-fat diet:**
 - **Total energy intake: 1300-1400 kcal/d**
 - **Energy intake from fat: 20%-25%**
- **Eat breakfast daily**
- **Regular physical activity: 2500-3000 kcal/wk (eg, walk 4 miles/d)**

Klem et al. *Am J Clin Nutr* 1997;66:239.

McGuire et al. *Int J Obes Relat Metab Disord* 1998;22:572.

Making Healthy Food Choices to Prevent Diabetes (healthy for DM)

- **Watch those CALORIES!** Eating too much of even healthy foods can result in weight gain. Watch your portion sizes. Keep your eyes on the Nutrition Facts Label when buying and choosing your foods.
- **Eat lots of vegetables and fruits.**
Focus on color variety to maximize health benefits.

Making Healthy Food Choices to Prevent Diabetes (healthy for DM)

- Have **non-starchy vegetables** such as spinach, carrots, broccoli or green beans with meals. Health benefits are highest with raw or steamed vegetables, so don't overcook vegetables.
- Choose **whole grain foods** over refined grains. Transition gradually to brown rice or whole wheat pasta.



Making Healthy Food Choices to Prevent Diabetes (healthy for DM)

- Include **dried beans** (like kidney or pinto beans) in your meals. Red beans and brown rice can become a tradition.
- Include **fish** 2-3 times a week.
- Make your **meat choices lean**, such as sirloin or pork loin. Remove the skin from chicken and turkey.

Making Healthy Food Choices to Prevent Diabetes (healthy for DM)



- Consume **non-fat dairy**: skim milk, non-fat yogurt and non-fat cheese. If you don't like these choices, then choose the low-fat dairy versions.
- **Avoid sweetened drinks**, opting for water and calorie-free "diet" drinks instead.

Making Healthy Food Choices to Prevent Diabetes (healthy for DM)

- Choose **liquid oils instead of solid fats** that can be high in saturated and *trans* fats, both for cooking and at the table. Remember that fats are high in calories. If you're trying to lose weight, watch your portion sizes of added fats. The Nutrition Facts Label is a great help here.
- Cut back on **high calorie snack foods** and desserts.





**Weight
Management**

=

**Health
Management**

- And, yes, you can have that favorite food you like.
- You just can't have it every day and you can't have a lot of it.
- Work it into your diet plan and... write it down!!!!

MERCI BEAUCOUP

