Paving the Way for Progress:

Before and After the Diabetes Prevention Program (DPP)

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Impaired Glucose Tolerance

- 79 million Americans have impaired fasting glucose or prediabetes; these individuals are at very high risk of developing diabetes

- The Diabetes Prevention Program (DPP) examined whether their chance of developing diabetes could be reduced by:
  - Intensive lifestyle intervention
  - Metformin (Drug used to treat diabetes)
  - Placebo

- Recruited 3000 participants, randomly assigned them to one of the three conditions, and followed annually for over 3 years
Intensive Lifestyle Intervention

- Weight Loss
  - 7% loss of body weight (14 pounds)

- Physical Activity
  - 150 minutes/week of moderate intensity physical activity
Incidence of Diabetes

Risk reduction
31% by metformin
58% by lifestyle
The Diabetes Prevention Program (DPP) could not have been done successfully without many years of prior intervention research.
History of Behavioral Treatment

Weight loss (kg) over time:
- 1984: 6 kg
- 1988 - 1990: 8 kg
- 1999 - 2000: 10 kg

Follow-up periods:
- 1984: 0 kg
- 1988 - 1990: 2 kg
- 1999 - 2000: 2 kg
The Diabetes Prevention Program (DPP) led to a new generation of research studies.
Long-Term Health Outcomes of Weight Loss in Individuals with Type 2 Diabetes

- Weight loss in individuals with type 2 diabetes has positive short-term effects
  - No randomized trials have examined the long term consequences of weight loss
  - Does weight loss reduce cardiovascular morbidity and mortality?
Multicenter trial funded by NIDDK, with support from other institutes and CDC

5000 individuals age 45-76 with type 2 diabetes

Randomly assigned to Intensive Lifestyle Intervention or Diabetes Support and Education

Followed an average of 13.5 years for a variety of health outcomes

Improving Maintenance of Weight Loss
Key Characteristics of NWCR members

- Low calorie/low fat diet
- High levels of physical activity
- Limited television viewing
- Daily self-weighing
Could we teach these strategies to others who have recently lost weight

NIH/NIDDK funded study

Test the efficacy of a face-to-face and an internet intervention vs. a newsletter control group in preventing weight regain over 18-months

Percent Regaining > 5 lbs at 18 months (ITT)

N > I, FF

Disseminating The DPP Treatment
Community-based Group DPP Delivered at a YMCA

Supported by NIDDK/NIH.
You are doing a fantastic job in the program—you met your weight loss goal last week and you’ve lost over 6-pounds. Good for you!

It's great to see that you recorded your food intake and met your calorie goal—these are 2 behaviors that are very important for continued weight loss success.

Your weight loss is going very well and you have a lot to feel good about. Be sure to watch this week’s lesson—it provides important information on how to cope with negative thoughts and emotions that could otherwise derail your weight loss efforts. Have a good week!

6-Month Weight Loss

Treatment Group: 6.7 kg  
(14.8 pounds)  

Control Group: 1.1 kg  
(2.4 pounds)
Impact on Clinical Practice

CMS recently proposed reimbursing primary care practitioners for behavior modification and weight-loss counseling among older, highly obese Medicare patients.
Conclusions

- NIDDK research funding has clearly had an important impact on lifestyle interventions for treatment of obesity and prevention of type 2 diabetes.
- However, given the epidemic of obesity/diabetes and the associated health care costs, it is critical to maintain adequate funding for basic, clinical and translational research on these issues.
- It is particularly important to adequately support the next generation of researchers so they can continue the process of discovery and implementation.