Type 2 Diabetes Prevention: Lifestyle Change and Coverage Considerations

Helping People Make Lifestyle Changes that Stick

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Outline

- Detail findings from Look AHEAD* and POUNDS LOST** studies
- I.D. factors for successful weight loss
- I.D. factors for successful weight maintenance post weight loss

*Look AHEAD: Action for Health in Diabetes
**POUNDS LOST: Preventing Overweight Using Novel Dietary Strategies

Detail findings from Look AHEAD and POUNDS LOST studies
Look AHEAD Trial

- Study details:
  - Long term (start ~2000), multicenter, RCT, ended early 2012\(^1,2\)
  - > 5,137 (55-76 yrs), overwt or obese individuals\(^2\)
  - T2 diabetes for 6.8 + 6.5 yrs (range 3 mos – 13 yrs)\(^3\)
  - Median follow up 9.6 yrs\(^4\)

- Primary Outcome:
  - Will intentional weight loss reduce the incidence of fatal and nonfatal cardiovascular and cerebrovascular events?


Look AHEAD Trial – Groups Defined

- Intensive Lifestyle Intervention (ILI)\(^1,2\):
  - 7% > wt loss at one year
  - >175 minutes physical activity/week
  - Calorie goal: 1200-1800 cals/day, < 30% of cals as fat
  - Support: significant, especially early

- Diabetes Support and Education (DSE)/(control)


Look AHEAD: Changes in Weight\(^1,2\)

1 yr: Mean wt loss from baseline 8.6% ILI, 0.7% control\(^2\)

Study end: Mean wt loss from baseline 6% ILI, 3.5% control\(^1,2\)

### Look AHEAD – Positive Results, Despite Headlines\(^1,2,3\)

- Median follow up 9.6 yrs\(^1\)
- Mean wt loss from baseline 6\% ILI, 3.5\% control\(^1\)
- A1c lowering ILI group 0.2\%\(^1\)
- **Primary outcome:** Failed to reduce CVD events in ILI vs. control
- Other health benefits:
  - Reduced sleep apnea, depression, urinary incontinence and improved QOL\(^1\)
  - Subjects with early T2D = most health benefits
  - Shortest duration
  - Not on insulin
  - Good baseline glycemic control


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### Look AHEAD: Benefits of Weight Loss on CVD\(^1\)

- ILI who lost >10\% of BW
  - 20\% lower risk of the primary outcome\(^*\)
  - 21\% lower risk of secondary outcome\(^**\)
- Change in fitness was not significantly associated with a change in the primary outcome\(^*\)
- Key factor = amount of weight loss

\(^*\)Primary outcome: composite of death from CV causes (non-fatal acute MI, non-fatal stroke, or hospital admission for angina

\(^**\)Secondary outcome: primary plus hx of CABG, carotid endarterectomy, percutaneous coronary intervention, hospitalization for CHF, peripheral vascular disease, or total mortality (death)


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### Financial analysis\(^1,2\):

- ILI produced mean relative per-person 10-year healthcare cost savings of $5,280; not evident in ppl w/ hx of CVD
- Average annual savings ~$600/participant
- ILI used fewer medications (7\%)
- ILI had fewer hospitalizations (11\%)

- **Look AHEAD continues as observational trial until 1/2021\(^3\)**

POUNDS LOST Study¹

Study details:
• NIH - 2 yr wt loss trial, 800+ subjects, 2 sites
• Overwt adults, BMI: 25 - 40
• 4 diets, varying % calories:
  – CHO - Low 35% to high of 65%


*Preventing Overweight Using Novel Dietary Strategies

Results:
• No one nutrient composition fared better than another (subjects modified towards diet goal, but didn’t reach diet’s goal)
• Weight loss:
  • 6 months: similar weight loss - 7% (6 kg/13 lbs)
  • 12 months: regained similar amounts of weight
  • 2 years weight loss remained similar: 4 kg/9 lbs
  • Subjects attending 2/3rd of sessions lost: 9 kg/20 lbs

• Clinical improvements:
  • Reduced cardiovascular disease and type 2 diabetes risk factors including lower LDL-cholesterol, BG and serum insulin levels, and slightly lower BP


Natural History: Wt Gain, Loss, Regain¹

Weight Loss Matters Most – When?1

Words of Wisdom and Sanity from Experts: Arya Sharma, MD

- Obesity/overweight a chronic, progressive condition
- Early, aggressive management is critical
- It’s not a treat it, you’re done condition
- Our goal should NOT be to help people get thinner, but to help people get healthier. Take the attention off of weight.
- “I only care about the weight you can keep off.”

15 Dietary Approaches Associated with Weight Loss by Expert Panel1

Among 15, range of options:*  
- Higher protein (25%), fat (30%), carbohydrate (45%)
- Lacto-ovo-vegetarian-style  
- Low-fat (10% to 25% of total calories from fat) vegan-style  
- Low-carbohydrate (initially <20 g/day carbohydrate)  
- Mediterranean-style diet with prescribed energy restriction

*If reduction in dietary energy intake is achieved.

Chair in Obesity Research and Management at the University of Alberta in Edmonton and Director of the Alberta Health Services Obesity Program. http://www.drsharma.ca/. Twitter: @drsharma.
There Isn’t Just ONE, But there IS common ground!

Best is healthy eating plan a person can follow forever!

Oldways 2015: https://oldwayspt.org/programs/oldways-common-ground/oldways-common-ground-consensus

Words of Wisdom and Sanity from Experts:
David Katz, MD

- (On DIETFITS 2/2) "A shift to wholesome foods in sensible combinations is effective at lowering weight and improving health regardless of fat or carbohydrate levels, even among those with insulin resistance at the start... study suggests best way to lose weight and improve health... is not by fixating on macronutrients or calories, but by eating wholesome foods... emphasizing whole, minimally processed plant foods."  
- (On LA Times Taube, Teicholz editorial low carb, high sat fat 2/2) "On what planet did the American public ever try these diets? Dietary Guidelines? Clearly, not this one. A high quality, traditional Mediterranean diet, the DASH diet - all others that ranked well on the [U.S. News] Best Diets are more alike than different... Emphasis on whole, minimally processed vegetables, fruits, whole grains, beans, lentils, nuts, and seeds with or without lesser amounts of minimally processed dairy products, lean meats, eggs, fish, and seafood."


Identify factors for successful weight loss, maintenance from recent evidence
National Weight Control Registry (NWCR) - 10 years¹

- Initiated 1993, Wing and Hill
- Goal: ID successful wt loss maintainers and describe their strategies
- Criteria: > 30lbs maintained ≥ 1 yr; now > 10,000
- 10 yr study: enrolled 1993 – 2000
- Total: 2886 completed > 2 of 10 annual f/u surveys


NWCR - 10 years
Predictors of Success¹

- Magnitude of initial wt loss and duration
- Increased physical activity
- Low calorie and low fat intake
- High restraint and low disinhibition around food
- Self-weighing > several times/wk

“Continued adherence to each behavior can improve long term outcomes.”


NWCR: Low Calorie Sweeteners and Weight Control¹

- Design: Random sample (N=434) of NWCR participants (mean wt loss: 34.2 ± 18.5 kg maintained for 7.8 ± 5.2 yrs) responded to online survey about their consumption of low/no calorie sweetened beverages (LNCSB)

- Results
  - 53% regularly used LNCSB, while 10% regularly consumed SSB.
  - 78% who regularly used LNCSB reported they helped them control calorie intake
  - Top 5 reasons for using LNCSB were: taste (54%), satisfy thirst (40%), part of their routine (27%), reduce calories (22%), go with meals (21%)
  - Participants reported:
    - Changing their beverage choices was “very important” to successful weight loss (42%) and weight maintenance (40%) efforts
    - Increasing water consumption was the most common strategy reported with reducing SSB intake second

Weight Loss: Successful Strategies

- Ready, willing and able? 1, 2
- Focus, don't overwhelm 1, 2
- Choose behaviors most ready to change 1, 2
- Reduce total fat to < 30% fat (don't focus on carb) 3
- Use of meal replacements/structure 3
- Include physical activity 2-5
- Early success (wt loss) predicts later success (frequent contact early) 5, 6


Words of Wisdom and Sanity from Experts:
B.J. Fogg, PhD

- Fogg equation:
  BC (behavior change) = M (motivation) + A (ability to make the change) + T (the trigger).
- Tie new behavior to existing, easier to accomplish
- Build "success momentum" - one tiny habit change after another
- Can't break bad habits. We can, over time, "untangle" them
- Behavior change mastery occurs due to continual practice. Eventually "healthy reflexes" emerge
- "Help people change what they already want to change, not what they know they should change but don't really want to."

https://www.bjfogg.com/

Weight Maintenance: Successful Strategies

- Physiologic realities 1
  - Lower calorie needs to maintain lower weight: 300 – 400/day
- Food/Calories:
  - Low calorie, low fat intake 2, 3, 4, eat breakfast 2, 5
  - Simplify eating plan, minimize choices 2
- Physical Activity 4:
  - Regular significant physical activity (60-90 min/day) 2, 4
  - Minimize sedentary behavior eg TV watching 5
- Maintain continuous support
- Relapse prevention plan
- Regular self weigh-ins 4, 5

2. Fletcher, On the Cutting Edge, Diabetes Care and Education. 2008;29(4).
M.W. (Michael Wadja): One Year Later

- NDPP within DSMES, Chester County Hospital 4/17
- 3/18: A1c = 5.7%
- Wt: ~180 (maintenance)
- Wife: lost 25 lbs
- Motivation?
  "Fear. I just don't want to have diabetes diabetes."