

Round table discussion:
High protein diets
- Yes, no, maybe?

Moderator: Patricia Anthony, MS, RD

Traditional Energy-restricted Low Fat High Carbohydrates Diet

Nutrient	Recommended Intake
Energy	500-1000 kcal/day below usual intake
Total fat	30% or less of total energy
Saturated fatty acids	8-10% of total energy
Monounsaturated fatty acids	up to 15% of total energy
Polyunsaturated fatty acids	up to 10% of total energy
Cholesterol	Less than 300 mg/day
Protein	About 15% of total energy
Carbohydrate	55% or more of total energy
Calcium	1000-1500 mg
Fiber	20-30 g

Common concerns of low carbohydrates diet

- Deficiency in micronutrients
- Ketosis
- Constipation or diarrhea
- Headache
- General fatigue
- Renal impairment
- CHD?

Studies on Low Carb Diet vs. Conventional Diet

- One-year, multicenter, randomized controlled trial
- 63 obese men and women
- High-protein high fat low-Carb (Atkins') diet vs. low-calorie, high-Carb, low fat (conventional) diet
- Result:
 - Atkins' diet produced a greater wt loss (-7.0+/-6.5 vs. -3.2+/-5.6 % body weight, P=0.02), for the first 6 months but **no significant difference at 1 year**
 - 59% completed the study at 1 year
- Longer and larger studies to determine long-term safety and efficacy

Comparison of the Atkins, Zone, Ornish, and LEARN Diets for Change in Weight and Related Risk Factors among Overweight Premenopausal Women

Gardner et al, JAMA 2007; 297:969-977

■ Objective

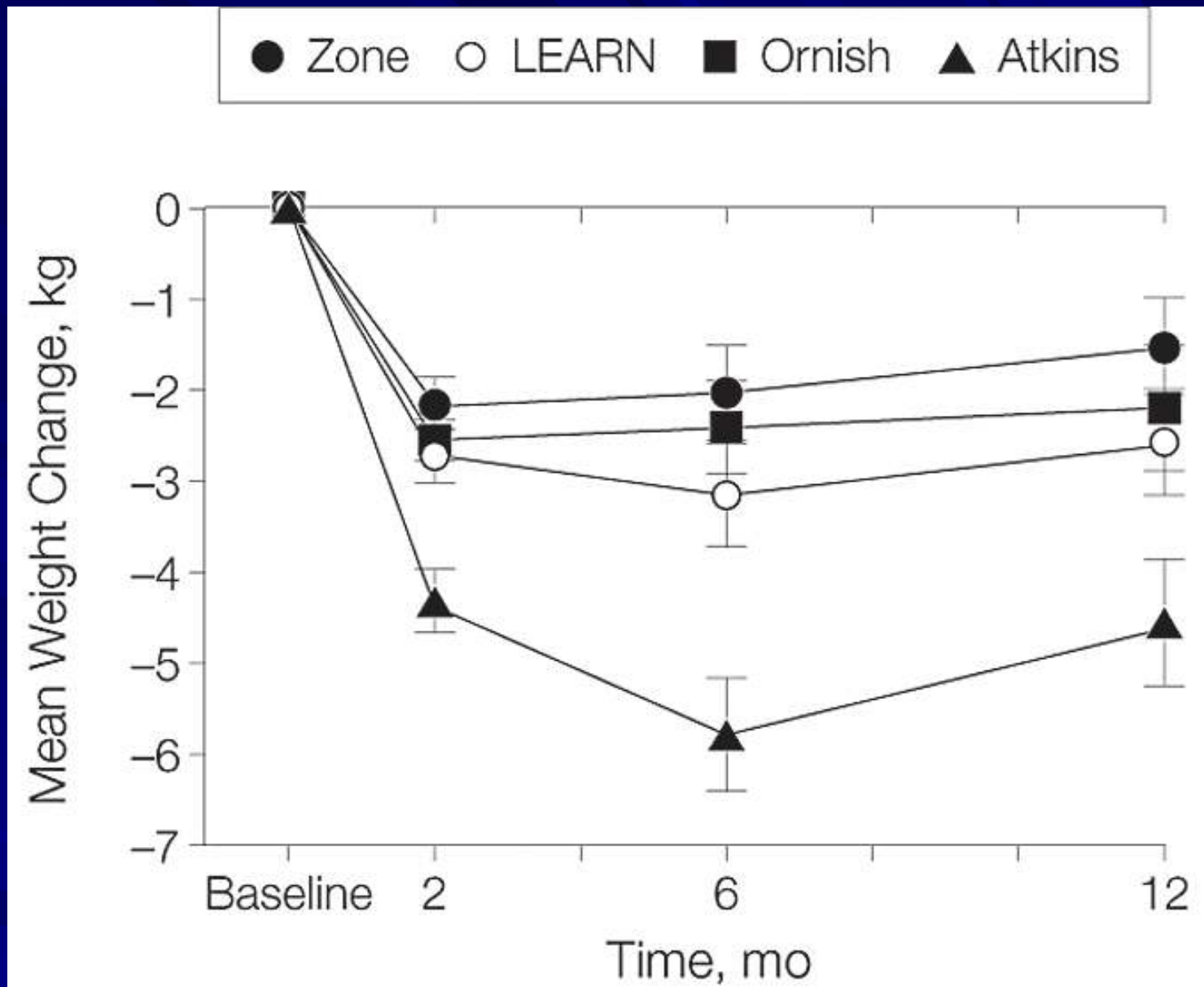
- To compare 4 weight-loss diets representing low to high carbohydrate intake for effects on weight loss and related metabolic variables
- Atkins (very low in carbohydrate), Zone (low in carbohydrate), LEARN (Lifestyle, Exercise, Attitudes, Relationships, and Nutrition; low in fat, high in carbohydrate, based on national guidelines), and Ornish (very high in carbohydrate)

■ Design, Setting, and Participants

- 12 month randomized trial conducted in US among 311 free-living, overweight/obese (BMI 27-40) nondiabetic, premenopausal women

■ Intervention

- Followed the Atkins (n = 77), Zone (n = 79), LEARN (n = 79), or Ornish (n = 76) diets and received weekly instruction for 2 months, then an additional 10-month follow-up.



Gardner et al. JAMA. 2007;297:969-977

Secondary outcomes

Gardner et al. JAMA. 2007;297:969-977

■ Lipid

- Statistically significant findings for HDL-C and triglycerides favored the Atkins group at all time points,

■ Insulin, Glucose, and Blood Pressure Outcomes

- No difference for fasting insulin or fasting glucose concentrations among all groups
- decrease in mean blood pressure levels was largest in the Atkins group at all time points. At 12 months, the decrease in systolic blood pressure was significantly greater for the Atkins group than for any other group.

Comparison of Weight-Loss Diets with Different Compositions of Fat, Protein, and Carbohydrates

Sacks et al. N Engl J Med 2009;360:859-73.

- randomly assigned 811 overweight adults to one of four diets;
- the targeted percentages of energy derived from fat, protein, and carbohydrates
 - 20, 15, and 65%;
 - 20, 25, and 55%;
 - 40, 15, and 45%;
 - 40, 25, and 35%
- group and individual instructional sessions for 2 years

Comparison of Weight-Loss Diets with Different Compositions of Fat, Protein, and Carbohydrates

Sacks et al. N Engl J Med 2009;360:859-73.

■ Results

- At 6 months, participants assigned to each diet had lost an average of 6 kg (7% of initial wt), they began to regain weight after 12 months
- By 2 years, weight loss remained similar in diet with
 - 15% protein vs. 25% protein (3.0 and 3.6 kg, respectively);
 - 20% fat vs.40% fat (3.3 kg for both groups);
 - 65% CHO vs.35% carbohydrates (2.9 and 3.4 kg, respectively)

■ Satiety, hunger, satisfaction with the diet, and attendance at group sessions were similar for all diet

■ Attendance was strongly associated with weight loss (0.2 kg per session)

■ The diets improved lipid-related risk factors and fasting insulin levels.

■ Conclusions

- Reduced-calorie diets result in clinically meaningful weight loss regardless of which macronutrients they emphasize.

Weight reduction diet composition for diabetes (ADA, Diabetes Care Vol. 31, Suppl. 1, 2008)

- “ either low-carbohydrate or low-fat calorie-restricted diets may be effective in the short term (up to 1 year)
- “ For patients on low-carbohydrate diets, monitor lipids profiles, renal function and protein intake (in those with nephropathy), and adjust hypoglycemic therapy as needed”

An Estimated 20-50% of Pets are Seriously Overweight

Obesity is the number one nutritional disorder among cats and dogs. Studies suggest that approximately 25% of cats presented to veterinary clinics are overweight.¹ Obesity in animals is not natural, and is extremely rare in their natural environment. Humans have created this condition.²



家住青島市重慶南路的徐繼榮，家有一隻超級肥貓，已經九歲，體重達 15 公斤，腰圍有 68 厘米 (27 吋)，平時不愛吃魚只愛吃肉，一天能吃一個饅頭和半碗雞心，也喜歡吃生豬肉，當然更愛主人替牠搗肚皮。

新華社

41磅胖貓日食2公斤碎肉

大部份人看到六歲的「米克什」，準會嚇一跳，因為這隻黑白雙色的家貓實在太有「份量」了：牠足有十八點五公斤（四十一磅）重，是一般貓的六倍，幾乎可以刷新世界紀錄。

「米克什」上周四入住德國柏林一家動物庇護中心，因為牠的主人要搬到護理院生活。庇護中心職員說，「米克什」的主人每天都給牠吃兩公斤免治碎肉，結果令牠變成超級胖貓。

影響心臟關節要減肥

「這可說是虐畜。」獸醫巴特爾說：「米克什」的關節和心臟都有毛病，也不能自己清潔毛皮，因此太黏了，坐不了三四秒已累壞了，因為



肥貓「米克什」胖得懶動。路透社

牠的心臟已不能正常運作，牠也不能如常呼吸。」巴特爾已安排「米克什」節食減肥，一般貓體重應是三至六公斤，每天進食不超過三百克食物。

《健力士世界紀錄大全》發言人說，現在已不再接受最胖貓兒的挑戰，但舊紀錄中最重的胖貓來自美國，有十八點五公斤。路透社

¹WJ Burkholder, Texas A&M University
²Pets Corner, Amazing Facts

What is Practical?

- A decrease in calorie intake is the **MOST** important component of weight loss and maintenance.
- Formulas are an estimate not exact science
- Research shows most overweight patients can lose weight on **1200-1500 kcal/day**

