Mark P. Kelly, Ph.D. ACE-PT, CSCS

- Exercise Physiologist with ACE
- Doctorate in Exercise Physiology and Education Administration
- M.S.-Masters in Physiology
- Masters in Exerercise Physiology
- Exercise Science Specialist/CPT- NFPT
- Chief Scientist for over 10 exercise studies
- Nationally ranked duathlete (93)
- Intercollegiate Bowler
- Currently competitive mud runner/ trail racer/ baby chaser

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Learning Objectives

1. Understand the evolution in approaches to weight loss from isolated to a holistic, dynamic approach
2. Define what overweight or obese is and how to measure it using different methods
3. Learn why weight loss programs either work or fail, counters to failures, and what winning losers are doing
4. Learn exercise strategies for weight loss
5. Learn eating strategies for weight loss
6. Learn the alternative (medical) approaches to weight loss and what the future holds to combat this issue

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Strategies to Battle the Bulge

- **Old Methods- Gutting it Out to get the Gut In**
  - Eat less- to the point of starvation
  - Move more
- **Somewhat Modern Methods- Shotgun Approach**
  - Eat less carbohydrates
  - Eat more protein
  - Exercise a lot
- **More Up to Date- Optimize Internal Environment**
  - Eat lower glycemic foods
  - Exercise with high-intensity, interval training
  - Gain muscle to increase metabolic rate- lower Metabolic Syndrome
  - Supplements to counter visceral adiposity, and carbohydrate absorption and balance hormones and lower stress levels

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Newer Strategies to Combat the Fat

- Exercise regularly- The best fat burning exercises are not necessarily the biggest overall calorie burners (remember to keep the heat in the NEAT)
- Strength/Metabolic (HIIT) training for weight loss
  - **Hits** big muscles and uses them a lot
  - Compound exercises performed quickly- high calorie burn
- **Get 8 hours of sleep- Keep cortisol down**
- **Don't just sleep in bed…** sex actually stimulates satiety! It burns some calories to boot
- Stay fully hydrated for optimal fat burning
- Eat fat burning and inflammation lowering foods- those with high thermic, low inflammatory effect

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Choose to Lose- Refrain from the Gain

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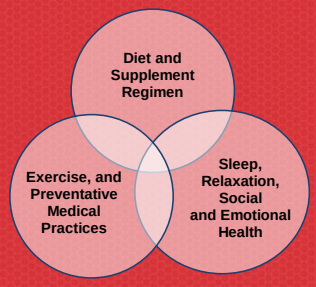
Holistic Weight Management



- Dietary Intake
- Exercise
- Endocrine
- Psychological
- Sociological
- Epigenetics
- Surgery

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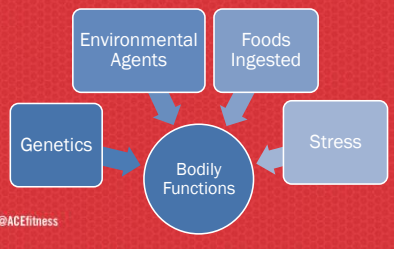
Systems Biology Approach with Nutrition

- *"Systems biology…is about putting together rather than taking apart, integration rather than reduction. It requires that we develop ways of thinking about integration that are as rigorous as our reductionist programs, but different….It means changing our philosophy, in the full sense of the term"*

Noble, Dennis (2006). The music of life: Biology beyond the genome. Oxford: Oxford University Press. pp. 176



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Gut Check- Hunger vs Satiety

Hunger

- Lack of water
- Lack of sleep
- Obesogens- environmental agents
- Hormones- Ghrelin, NPY

Satiety

- Proper hydration
- Sleep
- Social Interaction
- Hormones- Leptin, CART

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Understanding Some Definitions

- Body Mass Index (BMI)- A measure of the weight to height ratio (kg/m^2) a conversion for English units=
  - (wt [lbs] x703)/ (ht^2) *in.* used to determine over weight and obese classifications
  - Body Fat % (%BF)- Ratio of fat weight to total weight.
    - If someone has 25 lbs of fat weighs 150 lbs= 25/150= 16.66%.
    - A 200 lb woman has 60 lbs of fat- not obese, a man would be.
- Waist to Hip ratio (WHR)- circum waist: circum hip.
  - Very important because of insulin resistance risk
  - Location, location, location- it does matter
- Ideal Body Weight- What is it? Can it vary?

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Body Fat Charts- Male and Female

ACE Body Fat % Chart		
Description	**Women**	**Men**
Essential fat	10-13%	2-5%
Athletes	14–20%	6-13%
Fitness	21–24%	14–17%
Average	25–31%	18–24%
Obese	32%+	25%+

Table 8-5: pg. 184 ACE Personal Trainer Manual
Table 11-3- Health Coach pg. 295

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Percentile Ranks- %BF- Gender & Age

	Age (years)				
Percentile (Men)	20–29	30–39	40–49	50–59	60+
90	7.1	11.3	13.6	15.3	15.2
80	9.4	13.9	16.3	17.9	18.4
70	11.8	15.9	18.1	19.8	20.3
60	14.1	17.5	19.6	21.3	22.0
50	15.9	19.0	21.2	22.7	23.5
40	17.4	20.5	22.5	24.1	25.0
30	19.5	22.3	24.1	25.7	26.7
20	22.4	24.2	26.1	27.5	28.5
10	25.9	27.3	28.9	20.3	31.2
Percentile (Women)	20–29	30–39	40–49	50–59	60+
90	14.5	15.5	18.5	21.6	21.1
80	17.1	18.0	21.3	25.0	25.1
70	19.0	20.0	23.5	26.6	27.5
60	20.6	21.6	24.9	28.5	29.3
50	22.1	23.1	26.4	30.1	30.9
40	23.7	24.9	28.1	31.6	32.5
30	25.4	27.0	30.1	33.5	34.3
20	27.7	29.3	32.1	35.6	36.6
10	32.1	32.8	35.0	37.9	39.3

(Table 8-6- pg. 184 ACE Personal Trainer Manual 4th Ed.)

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Disease Risks Associated with Overweight & Obese BMIs and Waist Circumference

		Disease Risk* Relative to Normal Weight and Waist Circumference		
	BMI	Obesity	Men 102 cm (40 in) or less	Men > 102 cm (40 in)
	(kg/m²)	Class	Women 88 cm (35 in) or less	Women > 88 cm (35 in)
Underweight	< 18.5		-	-
Normal	18.5 - 24.9		-	-
Overweight	25.0 - 29.9		Increased	High
Obesity	30.0 - 34.9	I	High	Very High
	35.0 - 39.9	II	Very High	Very High
Extreme Obesity	40.0 +	III	Extremely High	Extremely High

http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/bmi_dis.htm

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The Apple (Android Obesity) vs. The Pear (Gynoid Obesity) SCAT vs VAT- WHR

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Ideal Body Weight (IBW)

- Ideal body weight typically 18.5-25 BMI
- Factors to consider for ideal body weight
  - Have you ever been thin?
  - What is your frame size? thin, medium, large
  - Do you feel "healthy" at lower "ideal" weights?
  - *www.ACEfitness.org/HealthCoachResources*

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Rough Estimate and Body Fat% Method to Determine IBW

- Two Methods
  - Rough Estimate: Women 100lbs (5ft) + 5 lbs/in., Men-106 lbs+ 6#s/in.
    - Need to Add 10% for Large frame and Subtract 10% for small framed
  - Lean Body Mass/(1- Desired Body Fat Percentage)
    - *Lean Body Mass (LBM)= Your Body Weight – (Your Body Weight x Your Current Body Fat Percentage)*

Example

- Frank who is 200 pounds and has 22% body fat
- Using this information, we know that his LBM is 156 pounds and the amount of body fat he has is 44 pounds
- So keeping his LBM at 156 pounds, Frank needs to drop 16 pounds of fat to reach his desired body fat percentage of 15%
- His ideal weight is 184 pounds in this scenario. Here's how Frank's ideal body weight calculation looks:
  - 156/(1-15%) = **184 pounds**

@ACEfitness *http://www.healthycalculators.com/body-weight.php*

Why Most Weight Loss Programs Fail

- Low adherence
- Most diets restrict your caloric intake so much that metabolism slows down (Leibel, Rosenbaum & Hirsh, 1995)
- Low calorie dieting may result in depression
- Most diets don't encourage lifestyle change
- Low Calorie Diets or Very Low Calorie Diets (VLCD) cause a loss of lean body weight
- Exercise is not part of the program

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Counters to Failing Weight Loss

- MAKE A COMMITMENT. SMART Goals- is the only way!
- Make sure calorie deficit is only 500-750 per day
- Engage in meaningful relationships with people who truly care for you
- Learn to eat the right foods which are easy to obtain
- Exercises with intense and frequent resistance (HIIT) have been shown to maintain lean body tissue
- Exercise is not only recommended but it is essential
- Keeping the focus on the positive, keeping the changes small, gradual, and progressive- feeding self-efficacy

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What has NOT WORKED with Weight Loss

- Fasting
- Quick fixes other than diet or exercise
- Hypnosis
- Very low fat diets
- Drinking more water or diet sodas
- Extreme diets- including food combining/ timing
- Low intensity, long duration exercise only
- Energy supplements- carries CV risk

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10 Myths with Weight Loss

1. You don't have to Count Calories
2. Always eat breakfast
3. Eat three times a day- don't snack
4. Carbohydrates make you fat
5. Avoid fats
6. Cut out desserts
7. Don't worry about dieting- just exercise
8. Don't weigh yourself
9. Never eat at night
10. No snacking between meals

@ACEfitness From Madelyn Fernstrom- Today show interview 2006

Weight Loss, WHAT'S IN IT FOR ME…

- Lower Risk For Many Diseases and Conditions
- Improved Appearance
- Improved Health, Energy, Stamina
- Greater Mental Clarity
- Feeling of Accomplishment, Control, and Self-esteem
- Improve Overall Quality of Life
- Less Joint Problems and Lower Back Injuries

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Winning Losers- NWCR Facts

- **The National Weight Control Registry participants**
  - Have lost an average of 33kg (72 lbs), and have maintained loss for at least 5.5 yrs
  - 80% women- 45 yrs., 20% men- 49 yrs.
  - Actual range on all variables quite wide (highly variable)
- **What worked/ is working for them:**
  - About ½ (45%) did it on their own, others used a program
  - 90% exercise, an average of 1hr per day
  - 78% ate breakfast every day
  - 75% weigh themselves at least once a week
  - 62% watch less than 10 hours of TV per week
- **General Trends**
  - 94% increased physical activity with walking
  - 98% Modified food intake somehow. Most eat a low calorie, low fat diet, and maintain consistency all week and weekend
  - Maintainer's levels of depression, disinhibition, and distress were lower, and binge eating and purging rates were similar to community samples

@ACEfitness *http://www.nwcr.ws/Research/default.htm*

Exercise Strategies for Weight Loss

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Impact Of Exercise on Weight Loss?

- Massive meta-study from Dr. Wayne Miller looked at 493 weight loss studies from 1969- 1994
- Across all studies averaged for a 15 week program:
  - Exercise alone- about 7 lbs avg. total
  - Diet alone- cut about 17 lbs avg. total
  - Diet and exercise combined- about 20 lbs. average

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Impact Of Exercise on Weight Loss?

- Appalachian State University **12 week** study found that aerobic exercise had little effect on body composition in obese women
  - 91 obese women split into 4 groups:
    1. **control group**- neither diet or exercise
    2. **aerobic exercise only**- 45 min/d, 5d/wk (restricted)
    3. **diet**- 1200-1300 calories/d
    4. **both diet and exercise**
- Results (amounts lost in comparison to control)
  - Exercise only- lost 3 lbs. (with almost 4h/wk exercising)
  - Diet alone- lost 15 lbs.
  - Diet + Exercise- lost 16 lbs. (only 1 more than diet alone)

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Impact Of Exercise on Weight Loss?

HERITAGE Family Study

- **Largest, well-controlled study of this kind**
  - 557 men and women, ages 16-65 y, black and white races
- **Exercise**- 3d/wk, 20 wks, with increasing duration/intensity
  - Start: 55% VO2max, 30 min/session, to 75%VO2max for 50 min (held the last 6 weeks of study)
  - Body composition and distribution was measured by:
    - a) skinfold, b) circumference, c) hydrostatic, d) CT scan
- **Results**
- **Conclusion**

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Wilmore, JH., Despres, JP., Stanforth, PR., Mandel, S., Rice, Gagnon, J., Leon, A.S., Rao, DC., Skinner, JS., Bouchard, C. (1999). Alterations in body weight and composition consequent to 20 wk of endurance training: The HERITAGE Family Study. Am. J. Clinical Nutrition., v.70 (3), 346-352

Why Exercise is Less Effective than Predicted

Exercise

- Burns few calories
- Causes additional hunger
- May cause lower RMR

Counters to Exercise

- Diet adjusted
- NEAT lowered

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Other Studies on the Effect of Exercise on Weight Loss

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Studies on the Effect of Weights… on Weight!

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Aerobic vs. Resistance Exercise…and the winner is… BOTH

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Intensity Used During Exercise

- The exercise intensity affects the energy source
  - Higher Intensity- higher proportion of carbohydrates
  - Lower Intensity- higher proportion of fats
- The exercise intensity affects EPOC (after burn)
  - The higher intensities prolong EPOC- still minor overall effect, however
- The high resistance exercise that causes muscle breakdown will:
  - Induce greater growth hormone
  - Induce long term change in RMR (albeit small)

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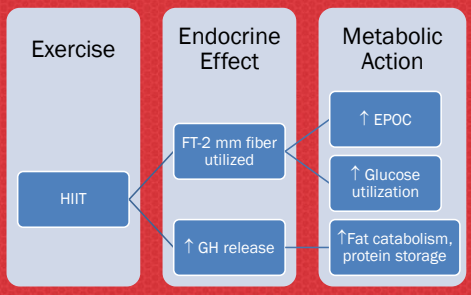
Endocrinological Effects of Exercise



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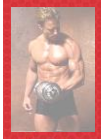
Six Types of Exercise Training
(a hierarchy for weight loss)

1. High Intensity Resistance Training-with minimal rest
   - This utilizes the hypertrophy principle and elevates the metabolic rate enough for significant EPOC.
2. Moderate - High Intensity Resistance Training w/ moderate rest
   - This enables greater recovery and thus greater forces to be generated. Theoretically the muscle mass increase would be greater but calories burned/time and EPOC may be reduced
3. High Intensity Anaerobic Interval Training (HIIT)
   - This type of training will burn a lot of calories and sustain the EPOC for the maximum rate amount of time. The most difficult type of exercise to perform



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Six Types of Exercise Training

4. High Intensity Aerobic Interval Training
   - This form of exercise burns a lot of calories, improves aerobic capacity and enhances fatty acid oxidative capacity in skeletal muscle
5. Steady State Moderate Intensity Aerobic Training
   - This type of training is what most engage in to lose weight yet it may be only moderately effective at best. Good for burning calories however
6. Steady State Low Intensity Aerobic Training
   - This is good for recovery from the other forms of training but will not yield any fat loss and does not significantly cause a training effect in any of the systems

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Most Bang for your Buck- Types of Exercise for Max Weight Loss

- There are no "secrets"- period- end of story
- Burning calories- not fat (in particular) should be your focus. High intensity exercise has the potential to:
  - 1) burn more calories per minute
  - 2) burn more calories after- "EPOC or afterburn"
  - 3) put on muscle mass to raise metabolic rate at all times
- Weight bearing exercise generally better (harder)
- Big muscles- legs, back should be utilized
- Going on very long workouts every so often will "train" (enhance) fat metabolism
- Outdoor activities allow for greater temperature regulation and psychological enhancement

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Periodization of Weight Loss Training

- Can you have the best of all worlds at once?
  - Not likely. Trying to keep your muscle while losing fat is not practical (possible but very difficult)
- Periodization- to emphasis a particular training goal or physiological system (eg. Endurance vs Speed/Strength)
  - Try to lose fat and hang onto or minimize muscle lost
  - Try to gain muscle and minimize fat gained
- Proportioned workouts depending on goal
  - If early in fat loss program- most time on fat loss 4 wks:1wk or workouts 4 cardio to 1 workout lifting
  - If later in program (plateaus occurring) more time on muscle gain 3:2. Some high intensity workouts may count for both
  - Important to carefully monitor "body composition" not weight

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Does Exercise Help with Long Term Weight Loss?

1. Exercise helps increase the overall TDEE
   - Longer lasting increase in RMR, capacity to perform work, EPOC
2. Exercise reduced the decrease in lipolysis with caloric decreases.
   - Metabolic alterations- improved enzyme function, more mitochondria, better transport mechanisms
3. Those who exercise tend to eat more fruits & vegetables (Emmons et al.)
4. Exercisers make changes to intake, especially fat intake (Klem et al, 1997; Jakicic et al, 2002)
5. Reduced stress and desire to exercise more
6. Increased self-image, and self-efficacy in other areas of challenge
7. Genetic alterations- almost a reprogramming

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Dietary Strategies for Weight Loss

1. Eat or Absorb Less
   a. Appetite Suppressant
   b. Absorption Blocker
   c. Conversion Inhibitors
   d. Satiety Enhancement
2. Burn More Calories
   a. Stimulate sympathetics (thermogenesis)
   b. Increase vitamins/minerals associated with metabolism
   c. Raise RMR (Raise GH and Testosterone Activity)
      Arginine, Orthine, OKG & BCAAs- Isoleucine, leucine, glutamine, GABA, Lysine
3. Decrease Fuel Storage (Anabolism)
   a. Minimize Insulin Spikes
   b. Block/Lower Cortisol secretions

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Popular Dietary Strategies to Combat the Fat

- Low food, High Stimulant- Likely does more harm than good
- Low Carb, Higher Protein (v1 or v2)- Atkins
  - Diets are focused on lowering the "net carb"
  - to slowly adding back until wt loss stops or slows- *critical carb level.*
- South Beach Diet- similar phases but only 3
  - **Phase 1-** The shortest and strictest stage with low carbohydrates and should only be initiated by those with significant weight to lose
  - **Phase 2-** People with only 10 lbs to lose can start in this phase
  - **Phase 3-** This phase used once you reach your healthy weight
- Over-consumption Diet (experiment- Bray 2012)
  - *Three levels of protein in diet conditions had no effect on amount of weight gained. Calories alone was the key to weight lost.*

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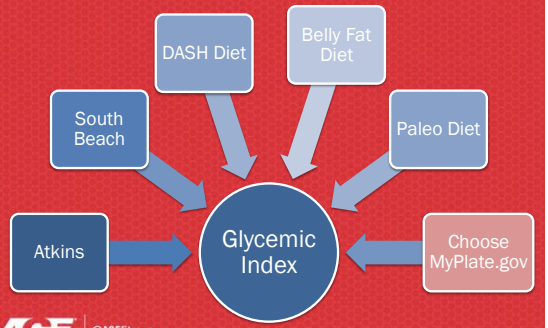
All Popular Diets Converging



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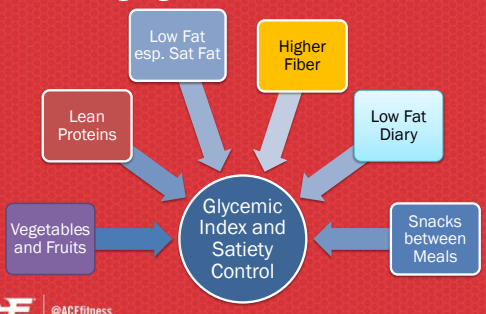
Characteristics of Effective Diets Converging on Central Factors



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www.ChooseMyPlate.gov (USDA sponsored website)

Weight Management

- Learn What You Currently Eat and Drink
- What To Eat and Drink
- Make Better Choices
- Eat the Right Amount of Calories for You
- Decrease Portion Sizes
- Eat Fewer Empty Calories
- Focus on Foods You Need
- When Eating Out, Make Better Choices
- Cook More Often at Home
- Increase Physical Activity
- Decrease Screen Time

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Position of the ADA and DC: Health Implications of Dietary Fatty Acids

American Dietetics Assoc.-ADA; DC Dietitians of Canada

- Dietary fat for the adult population should
  - provide 20% to 35% of energy
  - emphasize a ↓ in sat. fatty acids and *trans*-fatty acids
  - Emphasize an ↑ in (ω)n-3 polyunsaturated fatty acids.
- Recommend a **food-based approach** for achieving these fatty acid recommendations;
  - diet high in fruits and vegetables, whole grains, legumes, nuts and seeds, lean protein (lean meats, poultry, & low-fat dairy products)
  - fish (high in n-3 fatty acids)
  - use of non-hydrogenated margarines/ oils

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Does the Type of Calorie Consumed Used Affect Weight Loss Differently?

- A calorie is a calorie is a calorie- energetically only
- Calories (sources) vary greatly in metabolic effects
  1. **Satiety factor-** Protein> Carb> Fat per calorie
  2. **Insulin secreted-** Carb> Fat> Protein per calorie
  3. **Ketogenic response-** Fat and protein only stimulate ketosis. Carbohydrate inhibit it. Good or bad?
  4. **Adipokines and other hormones or transcription factors-** are affected by macronutrient profile- especially simple sugars and amino acid content.

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The Quality of Calories ARE Different

- **Study (June, 2012) in JAMA-** looked at 3 different macronutrient compositions and glycemic loads on energy expenditure following weight loss
  1. Low fat diet- 60% carbohydrate, 20% fat, 20% protein
  2. Low glycemic index diet- 40% carb, 40% fat, 20% protein
  3. Very low carbohydrate diet- 10% carbohydrate, 60% fat, 30% protein
- **Results**
  - Low carb burned 350 Cal/d more than low fat group (isocaloric diets)
  - However low carb had highest CRP (inflammatory marker) and 24 cortisol levels- which contribute to visceral adipose tissue
  - Low fat diet was worse for insulin resistance, HDL chol, triglycerides (all symptoms in Metabolic Syndrome)
  - 50-25-25 (+/- 5%) – high fiber, low glycemic, lean & varied proteins

ACE @ACEfitness *Ebbeling, C.B. et al. (2012). Effects of Dietary Composition on Energy Expenditure During Weight Loss Maintenance. JAMA. 2012; 307(24); 2627-2634*

HFCS- A 4-letter word?

- High fructose corn syrup consumption has jumped from about 0 in 1960 to 63 lbs. or 128,000 calories
- Because insulin is not released by pancreas with fructose consumption the brain does not recognize HFCS (calories) and little to no satiety effect from leptin production (i.e. a calorie is NOT a calorie metabolically)
- A lot of data provided by www.sweetsurprise.com to counter that HFCS causes obesity or diabetes and they cite studies from JAMA, US CDC, ADA and the USDA!
- Dr. Mark Hyman (www.drhyman.com) - met with national experts in nutritional biochemistry- Dr. Bruce Ames & Dr. Jeffrey Bland- conclude HFCS- triggers body wide obesity & inflammation and possibly triggers diabetes
  - *http://www.huffingtonpost.com/dr-mark-hyman/high-fructose-corn-syrup-dangers_b_861913.html*

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HFCS Studies- 5 Dangers

- Rats fed HFCS gained fat 300% more quickly than those fed an equal (or greater) amount of fruit-derived sugar (Princeton University, 2010).
  - Abnormal increases in body fat gain especially in abdomen
  - Rise in circulating triglycerides
  - Bart Hoebel- a Psychology Professor at Princeton- statement
- Increased risk of developing diabetes- carbonyls & ECGCs
- Hypertension and elevated "bad" cholesterol
- Liver damage
- Mercury exposure- a study from Environmental Health (2009) found Mercury in 50% of the samples tested.

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Sugar Recommendations- Effects

- American Heart Association
  - 100 calories (6 teaspoons) for women
  - 150 calories (9 teaspoons) for men
- USDA 2010 recommends for more than 5-15% of total calories come from sugars or solid fats
- The Dietary Guidelines Advisory Comm.- in Dietary Guidelines for Americans stated not more than 25% of total energy intake
- Most Americans get 33 tspns or 355 cal/d- of sugar
- Sugar can raise triglycerides
- Sugar does not provide nutrients- displaces food that may provide nutrients. Look for "ose" words, as well as cane or fruit juice concentrates

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Eat This, Not That! *Not a News Flash*

1. Vegetables- esp. colorful or phytochemical rich
2. Fruits – esp. colorful and less sweet
3. Nuts- esp. those with linolenic acids- flax, walnut, pecans
4. Beans
5. Whole Grains- less processed the better

Not That

1. High sugar-esp. high fructose corn syrup
2. High saturated fat- esp. trans fat
3. Processed foods- esp. french fries, cured meat
4. Calorically dense foods, esp. nutritional sparse
5. BBQ or charred meats

The list above was formed by Mark Kelly, Ph.D. and does not express specific recommendations by ACE or books using a similar title.

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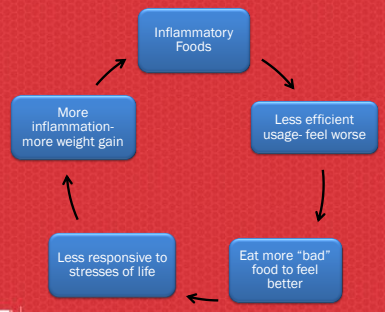
Vicious Cycle



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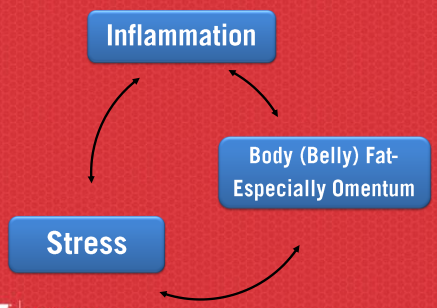
Vicious Interplay



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Fighting Inflammation with Food

- Nuclear Factor kappa B (NF-kappa B) triggers inflammation and reduces glucose absorption (Bad guy)
- Perioxisome Proliferator-activated receptors (PPARs) have an anti-inflammatory effect (Good Guy)
- Helpful foods-
  - **top shelf**: Omega 3s, Green Tea
  - **middle shelf-** Beer (in moderation) and tumeric (curcumin), red wine (resveratrol)
  - **bottom shelf-** anti-oxidants via isoflavones, lignans, polyphenols, glucoinsolates, carnosol, cocoa, and quercetin

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You on a Diet: The Owner's Manual for Waist Management. Roizen, M.F. & Oz, M.C. (2006). Free Press, NY.

Promising Supplements for Weight Loss

(Jeukendrup & Randall, 2011)- findings

1. L-carnitine- may enhance transport of LC-fatty acids
2. Caffeine- enhances metabolism at rest and low-intensity exercise, but only slightly
3. Fucoxanthine- carotenoid in edible brown seaweed
4. Conjugated linoleic acid (CLA)- higher doses- some effect
5. Taurine- amino acid used in muscle metabolism

The American Council on Exercise does not advocate the use of any supplement and does not endorse specific dietary planning by its affiliates

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Office of Public Health Genomics

Genomics Translation

- Family History Public Health Initiative
- Understanding the smaller roles of given genes in obesity and the interaction of the genes on each other

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New Therapies for Old Problems

New Obesity Drugs
1) Qsymia (Qnexa)
2) Belviq- coming soon
3) Contrave- coming soon

All drugs mentioned have small effects on total body weight (5-10% avg) but this is significant health effect. They also have side effects

Before-after: leptin therapy

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Bariatric Surgery- The Facts

NEJM (August 2012)

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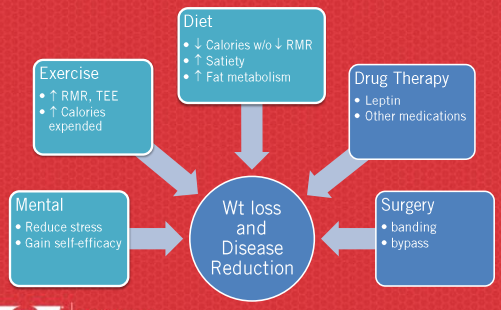
Weapons of Fat Mass Destruction



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Conclusions- Final Points

1. Many changes and evolutions are occurring in weight management
2. Current views in weight management are more holistic and dynamic than before
3. Many psychological techniques are needed to empower people to change lifestyle behaviors
4. Exercise is a very effective tool in maintaining long-term weight loss and reducing risk factors
5. Dietary views have evolved and simply modulating calories and macronutrient compositions is no longer an effective strategy.
6. Some supplements and food choices are helpful in weight loss
7. New obesity drugs and hormone therapies hold promise
8. Bariatric surgery has greater benefits for medical purposes over the cosmetic ones

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"Any intelligent fool can make things bigger, more complex and more violent.

It takes a touch of genius - and a lot of courage - to move in the other direction..."

~ Albert Einstein

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