



Integrative Approach to Weight Loss

James P. Nicolai, MD
 St. Francis Weight Loss Center
 10 May 2010

- An overview...
- A couple of *apologies*...
 - The *Do's* and *Don't's*
 - My story.
 - A *rant* about **Lifestyle**
 - **Lifestyle is the Pill!**
 - Integrative Medicine is **Lifestyle Medicine (and a bag of pistachios!)**
 - Deliver **the goods**

- *My apologies...*
 - *Jill couldn't be here*
 - *I changed things around a bit...*

What I'd Rather **NOT** Do...

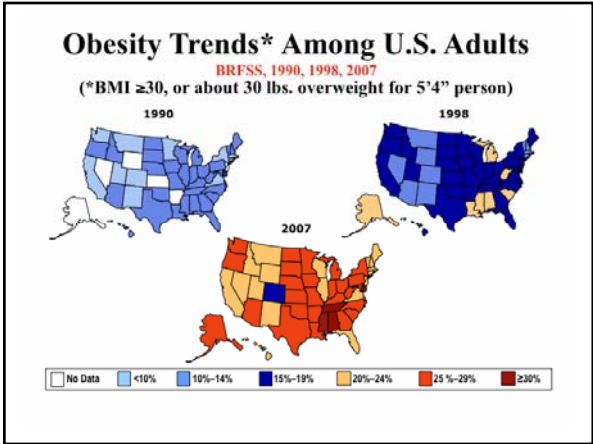
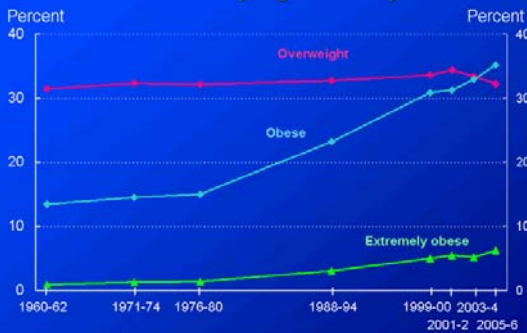


Figure 2. Trends in overweight, obesity and extreme obesity, ages 20-74 years



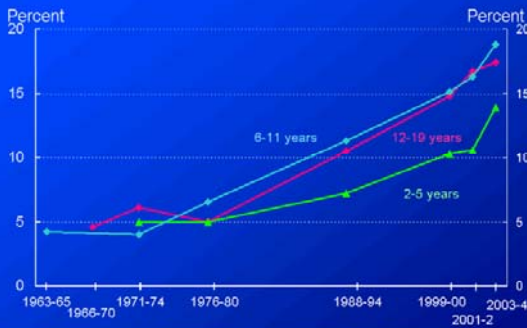
Note: Age-adjusted by the direct method to the year 2001 (U.S. Bureau of the Census using age groups: 20-30, 40-50 and 60-74 years. Pregnant females excluded. Overweight defined as $25 < \text{BMI} < 30$, obesity defined as $\text{BMI} \geq 30$, Extreme obesity defined as $\text{BMI} \geq 40$.)

Increase in Overweight Prevalence (%) Among U.S. Children & Adolescents

AGE	1971 - 1974	1976 - 1980	1988 - 1994	1999 - 2000	2001 - 2002	2003 - 2004
2 - 5	5	5	7.2	10.3	10.6	13.9
6 - 11	4	6.6	11.3	15.1	16.3	18.8
12 - 19	6.1	5	10.5	14.8	16.7	17.4

CDC, National Center for Health Statistics, National Health and Nutrition Examination Survey

Trends in Child and Adolescent Overweight



Note: Overweight is defined as BMI \geq gender- and weight-specific 95th percentile from the 2000 CDC Growth Charts. Source: National Health Examination Surveys II (ages 6-11) and III (ages 12-17), National Health and Nutrition Examination Surveys I, II, III and 1999-2004, NHANES, CDC.

Cost of Obesity Related Illness in the U.S.

Average \$ Cost	1987	2002	% Increase
Normal Weight	\$1,512	\$2,210	46 %
Obese	\$1,784	\$3,454	94 %
% Difference	15 %	36 %	48 %

Cost in years of life lost:

- average of 7.1 years of life for women
- average 5.8 years of life for men

Not JUST lives, but also dollars...

- by 2018 over 100 million Americans will be obese
- we will be spending roughly \$340 billion annually on obesity, a tripling of current levels
- per capita spending will rise from \$361 to over \$1400 a year

<http://www.fightchronicdisease.org/pdfs/CostofObesityReport-FINAL.pdf>
 - November, 2009

“Eat all you want and still lose weight.”





O-W-C-H; this won't hurt a bit...

<http://www.turnthetidefoundation.org/owch.htm>

On-line Weight Management Counseling for Healthcare Providers; National Obesity Action Forum, Washington, DC; 6/06

*Katz DL. Behavior Modification in Primary Care: the Pressure System Model. *Prev Med.* 2001;32:66-72

*Katz DL, Shuval K, Comerford BP, Faridi Z, Njike VY. Impact of an educational intervention on internal medicine residents' physical activity counseling: the Pressure System Model. *J Eval Clin Pract.* 2008;14(2):294-9

Definitions of Overweight and Obesity

BMI >		Body Mass Index																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Children

- Growth charts show the weight status categories used with children and teens.
- www.cdc.gov/nchs/about/major/nhanes/growthcharts/charts.htm

Weight Category	Percentile Range
Underweight	<5 th percentile
Healthy weight	5 th - 84.9 th percentile
At risk of overweight	85 th - 94.9 th percentile
Overweight	≥ 95 th percentile

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Health Effects of Obesity

- Medicare reclassified obesity as a chronic disease in July, 2004.
- Evidence shows that obesity and Type 2 diabetes are inflammatory states.
- Co-morbidities concurrent with obesity lead to increased morbidity and mortality.
- Prevalence of high blood pressure, high cholesterol and low HDL escalates with increasing BMI.
- A 10% weight loss can improve some co-morbidities including type 2 diabetes and hypertension. Surgical removal of adipose tissue does not improve metabolic parameters.

http://obesity.complimentary.com/obesity/obesity/Health_Effects.html
 Spiegelman. Adipocytes as regulators of energy balance and glucose homeostasis. *Nature* 2006 vol:444, 7121-747-53
 N Engl J Med. 2004;350:2542-2544, 2349-2357

Obesity = Increased Risk

- Endometrial, colorectal, prostate, pancreatic, breast, esophageal and renal cell cancers
- Hypertension, cardiovascular disease, DVT, CVA
- Osteoarthritis, rheumatoid arthritis, gout, carpal tunnel syndrome, low back pain
- Type 2 Diabetes; Gall bladder disease
- Menstrual abnormalities, infertility, stress incontinence
- Asthma, sleep apnea, respiratory impairment

• The incidence of co-morbidities related to obesity and overweight. *BMC Public Health* 2009, Mar 25:9:88
 • Callee et al. Obesity, recreational physical activity, and risk of pancreatic cancer in a large U.S. Cohort. *Cancer Epidemiol Biomarkers Prev*, 2005 Feb;14(2):459-66
 • Callee et al. Body mass index, weight change, and risk of prostate cancer in the Cancer Prevention Study II Nutrition Cohort. *Cancer Epidemiol Biomarkers Prev*, 2007 Jan;16(1):53-9
 • A prospective study of waist circumference and body mass index in relation to colorectal cancer incidence. *Cancer Causes Control*, 2008 Sep;19(7):783-92
 • Callee et al. The role of body weight in the relationship between physical activity and endometrial cancer: results from a large cohort of US women. *Int J Cancer*, 2008 Oct 15;123(8):1879-85
 • Maguire M. Impact of obesity on women's health. *Fertility and Sterility*, May 2009 Vol 91, Issue 5.
 • American Obesity Association

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Prevalence of Medical Condition by BMI for Women

Medical Condition	Body Mass Index			
	18.5 – 24.9	25 – 29.9	30 – 34.9	≥40
	Prevalence Ratio (%)			
Type 2 Diabetes	2.38	7.12	7.24	19.89
Coronary Heart Disease	6.87	11.13	12.56	19.22
High Blood Pressure	23.26	38.77	47.95	63.16
Osteoarthritis	5.22	8.51	9.94	17.19

Source: NHANES III, 1988 - 1994

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Obesity and Mortality

- Obesity is associated with increased overall mortality.
- Mortality was found to be lowest at BMI of 22.5-25. Each 5 kg/m(2) higher BMI was on average associated with about 30% higher overall mortality.

• Whitlock G, Lewington S, Sherliker F, et al. Body-mass index and cause-specific mortality in 900 000 adults: collaborative analyses of 57 prospective studies. *The Lancet* 2009; 373 (9669):1083-96

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Risk Factors for Obesity Associated Disease

Non-modifiable Risk Factors:

- Age – men over 45, women over 55 or after menopause.
- Gender – greater risk for men than women who are pre-menopausal.
- Family History - first degree blood relative who experiences heart disease or stroke before the age of 55 years in a male and 65 years in a female.

Modifiable Risk Factors:

- Physical inactivity
- Poor nutritional habits
- High cholesterol
- High blood pressure
- Diabetes mellitus
- Cigarette smoking

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Abdominal Obesity

- The presence of excess fat in the abdomen is an independent risk factor for morbidity and mortality.
- Waist circumference is strongly correlated with abdominal fat and provides a clinically acceptable measurement of abdominal fat content.
- Waist circumference and BMI should be included in clinical assessment.
- Risk of obesity and associated diseases is increased if waist circumferences are:
 - >40 inches for men
 - > 35 inches for women

Drepsen JP. Abdominal obesity: the most prevalent cause of metabolic syndrome and related cardiometabolic risk. European Heart Journal 2006; 8: B4-B.12. 24

Disease Risk Relative to Weight and Waist Circumference

Class	BMI (kg/m ²)	Normal Waist Circumference	Increased Waist Circumference
Underweight	<18.5	---	---
Normal	18.5 – 24.9	---	---
Overweight	25 – 29.9	Increased	High
Obese I	30 – 34.9	High	Very High
Obese II	35.9 – 39.9	Very High	Very High
Obesity III	≥ 40	Extremely High	Extremely High

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My Story...

- James P. Nicolai, M.D., integrates alternative medicine into his approach to weight loss management.
- Dr. Nicolai, a member of the [American Society of Bariatric Physicians](#), is a board-certified family practitioner and a graduate of the [Integrative Medicine Fellowship at the University of Arizona in Tucson](#). Under the direction of Dr. Andrew Weil, this fellowship is the first of its kind to provide specialized training in integrative health care.



Dr. Nicolai, a graduate of the Indiana University School of Medicine, has a special interest in whole-person medicine, addressing the mind, body and spiritual needs of each patient.

His expertise is in combining conventional medicine with the use of Complementary and Alternative therapies, including:

- herbs and other botanicals
- vitamins and supplements
- nutritional counseling
- lifestyle management
- [stress reduction](#) - especially with mind-body therapies like guided imagery and clinical hypnosis.

Dr. Nicolai is a member of the St. Francis Medical Group and is an in-network physician with:

- Aetna
- Anthem
- Cigna
- Encore
- St. Francis Health Network
- Medicare
- Unicare
- Refer to your plan guidelines regarding covered services.

Lifestyle and Chronic Disease

□ Chronic diseases that affect 160 million Americans account for 78% of our \$2.1 trillion in annual health care costs

□ *Lifestyle* and environmental factors – our diet, sedentary lifestyle, smoking and chronic stress – are the most important underlying causes of these diseases

There is *Lifestyle*... and everything else!

▪ McGinnis JM, Foege WH. Actual causes of death in the United States. JAMA. 1993;270:2207-12

▪ Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. JAMA. 2004;291:1238-45

▪ Strong K, Mathers C, Leeder S, Beaglehole R. Preventing chronic diseases: how many lives can we save? Lancet. 2005 Oct 29-Nov 4;366(9496):1578-82

▪ Epping-Jordan JE, Galea G, Tukuitonga C, Beaglehole R. Preventing chronic diseases: taking stepwise action. Lancet. 2005 Nov 5;366(9497):1667-71

Doctors don't **DO** Lifestyle!

- Don't *Learn* it!
- Don't have *time* for it!
- Don't get *paid* for it!

Healthy living is the best revenge: findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam study.

Arch Intern Med. 2009;169(15):1355-1362

Healthy Living: The Best Revenge!

- Relative risk-reduction of developing major chronic diseases
- 23,000 adults in Germany
- **4 Healthy Lifestyle Behaviors:** not smoking, exercising 3.5 hours a week, keeping a healthy weight (BMI<30), healthy diet [fruits, veggies, beans, whole grains,nuts, seeds and low meat consumption]
- Participants with all 4 factors had a 78% lower risk of developing a chronic disease: 93% diabetes, 81% heart attacks, 50% strokes, 36% cancers **were prevented!**

Doctors *can*
and **must DO** Lifestyle!

Lifestyle Medicine is not just about *preventing* chronic diseases but also about *treating* them, often more effectively and less expensively than relying on drugs and surgery.

Rescuing Health Reform:

Why Doctors Should Practice Lifestyle Medicine

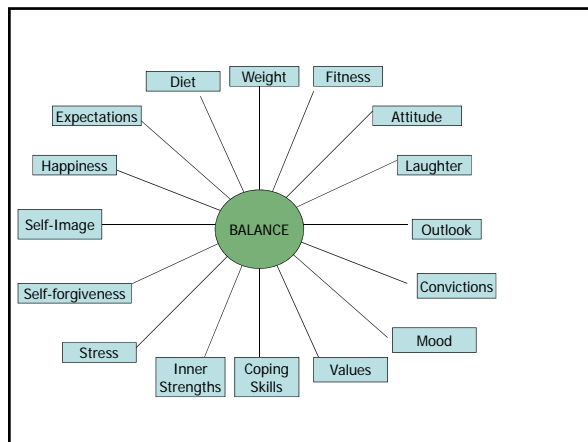
Mark Hyman, MD, Dean Ornish, MD and Mike Roizen, MD

<http://www.acpm.org/LifestyleMedicine.htm>

- Extensive literature review on Lifestyle Medicine – *the practice of changing health behaviors to promote health and prevent and treat disease*
- Summarizes evidence supporting lifestyle interventions, reimbursement trends, related practice patterns, and relevant organizations
- Panel includes reps from ACPM, AAFP, AAP, American College of Physicians, AMA, American Osteopathic Association, ACLM, American College of Sports Medicine

Integrative Medicine is...

Healing oriented medicine that takes account of the whole person (body, mind, and spirit), including all aspects of lifestyle. It emphasizes the therapeutic relationship and makes use of all appropriate therapies both conventional and alternative.



Lifestyle and CHANGE

- Change has a considerable psychological impact on the human mind.
- To the fearful it is threatening because it means that things may get worse.
- To the hopeful it is encouraging because things may get better.
- To the confident it is inspiring because the challenge exists to make things better.

- King Whitney Jr.

Human beings, by changing the inner attitudes of their minds, can change the outer aspects of their lives.

William James (1842 - 1910)

We are what we think we are!

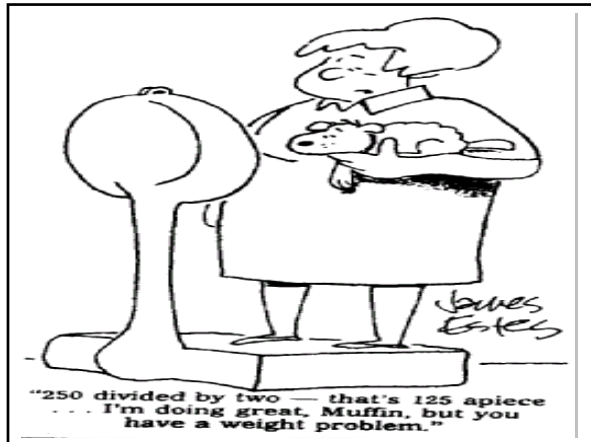
Process of Change

- **Pre-contemplation** – Do I Have a Problem
- **Contemplation** – Why, How, What
- **Action** – Plan - Attitude
- **Maintenance** - Perverserence
- **Termination** (SUCCESS)

Weight Management – Diet Pre-contemplation Stage

Do I Have a weight problem?
How do I know?

Body Mass Index
Waist Circumference



Contemplation But why change?

Risk levels according to BMI and waist circumference

Relative risk* vs normal BMI and waist circumference

	BMI	Obesity Class	Men <40 in Women <35 in	Men >40 in Women >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	III	Extremely High	Extremely High

* Relative risk for developing type 2 diabetes, hypertension and cardiovascular disease.
 † Increased waist circumference can also be a marker for increased risk even in persons of normal weight.

Source: National Heart, Lung and Blood Institute, Bethesda, Md.

Contemplation: Are You Ready to Make a Change??

It's not that some people have willpower and some don't. It's that some people are ready to change and others are not.

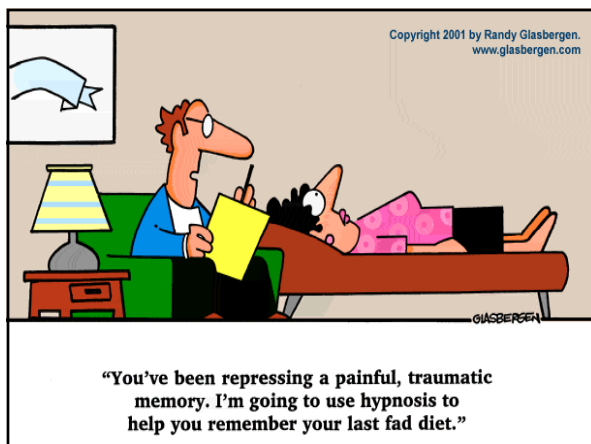
James Gordon, M.D.

Contemplation: Making the decision to change

Introspection: Why am I overweight?

- Genetics?
- Environmental Factors?
- Medical problems?
- Medications?
- Reasons for eating?
- Binge Eating?
- Emotional Issues to address?
- What has kept me from succeeding in the past?
- Accept responsibility?

*Only I can change my life.
No one can do it for me.
Carol Burnett (1936 -)*



ACTION Stage

- Develop reasonable goals
- Develop a plan
 - Diet
 - Exercise
 - Behavioral modification
- Work on one day at a time
- Accept you humanness

Medical Weight Loss (Lifestyle Management) Program

- Consultation 1
- Consultation 2
- 8-10 Weekly Visits
 - Remeasure & Reassess
- 8-10 Bi-Weekly Visits
- Maintenance: 2-4 weeks as needed

What's in a visit?

- Body Composition Weigh-in
- Vitals: BP, HR, BMI, Weight assessment
- Medical assessment (15-30 minutes)
- Ancillary staff: dietary, exercise/trainer, counselor-emotional management (20-45 minutes)
- *Positive and Proactive*
- *Goal-oriented*

What else ya got?

- Monthly Support groups
- Website Blog
- Phone consultations
- Exercise classes
- Cooking classes
- LEARN Program (10 weeks)
 - RD supervised

Reimbursement?

- Medical monitoring – covered
 - Medicare reclassified obesity as a chronic disease in 2004
 - Also defined Metabolic Syndrome as disease
- Dieticians – sometimes/for a time period
- Counselors (MSW) – maybe
- Personal trainers – nope!

Consultation 1

- Medical History, Weight History, Physical Examination, Blood Work Analysis, EKG, Urinalysis, Bio-impedance (BMR), Body Composition Analysis, BMI, Nutritional Analysis, Psychological Readiness Profile
- Personal Goals/Motivation

Am I Overweight?

Body Mass Index (BMI)

Weight (lbs) / Height (inches squared) x 703

BMI	
19-24.9	Ideal Weight
25-29.9	Overweight
30-34.9	Grade 1 Obesity
35-39.9	Grade 2 Obesity
≥ 40.0	Grade 3 Obesity

Waist Circumference

Males < 40 inches

Females < 35 inches

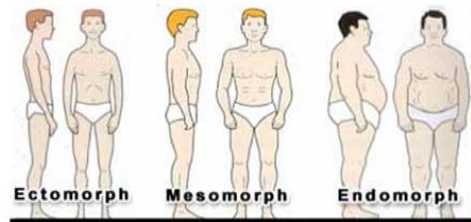
Medical History

- Hypertension
- Insulin Resistance
- Diabetes Type II
- Metabolic Syndrome
- Elevated Cholesterol
- Elevated Triglycerides
- Low HDL
- Depression
- Coronary Artery Disease
- Strokes
- Congestive Heart Failure
- Sleep Apnea
- Asthma
- Osteoarthritis
- Infertility

Integrative Interview (60 minutes)

- Why here and why now?
- Who are you? (personality/motivation)
- How did you get here?
- What is your story? (family, events)
- Has anything worked before? What have you tried?
- Energy levels? Stress levels? (Emotional Eating)
- What/Who do you rely on for Support?

Consultation 1: Measurement



Consultation 1: Lab Tests

- CBC with Differential
- Comprehensive Metabolic Profile (Fasting BMP, LFTs)
- Fasting Lipid Panel
- Fasting Insulin, Hgb A1-C
- hsCRP
- 25 (OH) Vitamin D

Counsultation 2

- Review the data
- Establish individualized treatment plan
- Risk analysis report
- Weight loss goals and plan
- Introductory education with dietician
- Exercise goals
- Medications/Supplements

ATP III: The Metabolic Syndrome

Diagnosis is established when ≥ 3 of these risk factors are present

Risk Factor	Defining Level
Abdominal obesity (Waist circumference)	
Men	>102 cm (>40 in)
Women	>88 cm (>35 in)
TG	≥ 150 mg/dL
HDL-C	
Men	<40 mg/dL
Women	<50 mg/dL
Blood pressure	$\geq 130/\geq 85$ mm Hg
Fasting glucose	≥ 110 mg/dL

- Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. JAMA 2001;285:2486-2497.
- <http://www.nhlbi.nih.gov/guidelines/cholesterol/>

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DPP

Prevalence of Metabolic Syndrome

- 53% of participants were determined to have metabolic syndrome at baseline.
- Lifestyle intervention and Metformin reduced development of the syndrome in the remaining participants (lifestyle intervention 38%; Metformin 23%).
- Conclusion: Lifestyle changes may reverse metabolic syndrome and diabetes risk.

* Orchard T, Temprosa M, Goldberg R. The effect of metformin and intensive lifestyle intervention on the metabolic syndrome: the Diabetes Prevention Program randomized trial. Annals of Internal Medicine:2005 vol:142 iss:8 pg:611 -9

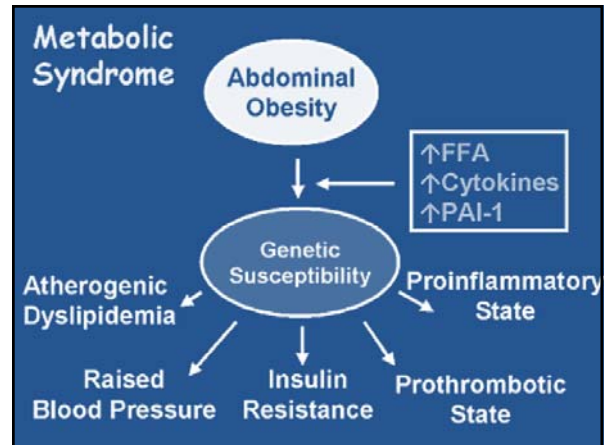
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Clustering of Risk Factors in the Metabolic Syndrome

Includes risk factors not routinely measured:

- Insulin resistance
- Small dense LDL
- Endothelial dysfunction
- Abnormal sympathetic nervous system activity
- Pro-thrombotic markers—PAI-1, fibrinogen
- Pro-inflammatory markers such as CRP

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Medications/Supplements

- Metformin 500-1000 mg twice daily
- Lovaza 2 grams (EPA/DHA) twice daily
- Combined T3/T4 preparations
- Supplemental Vit D [25 (OH)vit D < 32; goal 50 ng/ml]
 - Ergocalciferol (Vit D2) 50000 IU 1-2 times weekly
 - Vit D3 5000 IU daily
- Phentermine (Adipex) 37.5 mg
 - 1/2 - 1 tablet daily (in the morning - until noon)
 - Approved by FDA for long term use in patients with BMI > 30 without risk factors or BMI > 27 with risk factors (HTN, CHD, Type 2 DM, dyslipidemia, sleep apnea)
 - Side effects: increased HR, BP, increased energy, insomnia, irritability (NE agonist)

Other Supplements

- High potency multivitamin-mineral with B-50 complex, 1-2000 IU vit D3
 - Insurance against gaps in the diet
 - Low Energy
 - Look for the *Step up/Step off!*
- New Chapter Holy Basil (*Ocimum sanctum*)
 - Cortisol/Anti-inflammatory
 - 2 capsules one-time daily
- Fish oil (if no dice to Lovaza)
 - Nordic Naturals ProEPA
 - New Chapter WholeOmega Alpha-lipoic acid/acetyl-L-carnitine
- Green/oolong/white tea (*Camilla sinensis*)
- Tonics: siberian ginseng, ashwaganda, cordyceps

Reasonable goals

- Long term goals
 - 10% weight loss +
- Short term goals
 - 1 to 2 pounds per week
- Remember that weight loss is a journey – there are no quick fixes

My doctor told me to stop having intimate dinners for four. Unless there are **three** other people.

Orson Welles
(1915 – 1985)

PLAN

- Diet – Healthy Eating
 - Must Eat
 - Regular Eating Pattern
 - Portion Control
 - Calorie restriction of 500-1000 calories per day
 - Balanced eating
 - Restriction – according to *Andy's Rules*

Anti-Inflammatory Diet



Andy's Rules!

- Avoid refined, processed, manufactured foods
- Eat good fats and avoid bad fats
- Eat slow-digesting carbohydrates
- Eat plenty of fruits and vegetables
- Enjoy a variety of health-protective spices, condiments and beverages
- Get lots of regular physical activity

DIET

- Energy requirements???
- Multiply weight x conversion factor
- Conversion Factors

– BMI 20-25	12.5
– BMI 25-30	11.5
– BMI 30-35	10.5
– BMI 35-40	9.5
– BMI 40-45	9.0
– BMI 45-50	8.5
– BMI 50-55	8.0
– BMI 55-60	7.5
– BMI > 60	7.0

Diet

Example – BMI 37.5

Weight (pounds) x 9.5 = calories per day
Assumes normal daily activity

Add Exercise component

DIET – Energy Requirements

Exercise Component:

Multiply	
x 1.0	No additional exercise
x 1.05	Exercise 3x per week for 30-45 minutes
x 1.10	Exercise 4x-6x per week for 30-45 minutes
x 1.20	Exercise 4-6x per week for greater than 1 hour

Caloric Requirements:

Weight (pounds) x conversion factor x
exercise component
= Total daily maintenance requirements

Example:

Weight = 165 pounds - BMI = 27.5
Exercises 3 days per week for 30 minutes

$165 \times 11.5 \times 1.05 = 1992$ calories per day

Diet Level

500 to 1000 calorie deficit per day
500 calories deficit = 1 pound of fat loss/week

Previous example:

$1992 - 500 = 1492$ calories per day

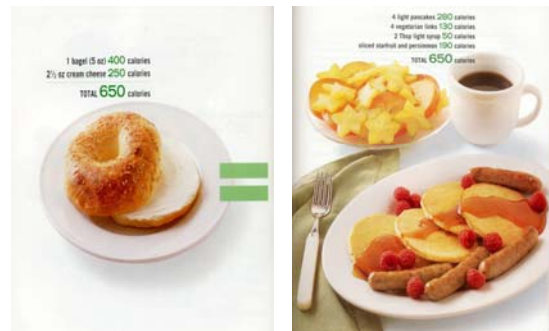
WARNING:

DO NOT GO BELOW 1200 CALORIES PER DAY

Eat Wiser not Less



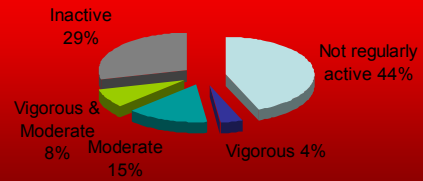
Eat Wiser not Less



PLAN

- EXERCISE
 - What are my barriers to exercise?
 - How much? How often
 - What kind?
 - What do I enjoy?

Physical Activity US Adults



Health Benefits of Exercise

- | | |
|-----------------------------|--|
| ■ Weight Loss | ■ Reduces Stress |
| ■ Increased metabolism | ■ Improves Mood |
| ■ Lowers Blood Pressure | ■ Decreases osteoporosis |
| ■ Lowers Cholesterol | ■ Improves Mental Function |
| ■ Lowers Triglycerides | ■ Protective against Alzheimer's Disease |
| ■ Raises HDL | ■ Better sleep |
| ■ Improves Lung Function | ■ More Energy/ Less fatigue |
| ■ Improves Insulin Function | ■ Improved digestion |
| ■ Better balance | ■ Improved Immunity |
| ■ Less Leg swelling | |

PLAN

- Behavioral Modification
 - Stress Eating
 - Stimulus Control – Modify your environment
 - Awareness and Accountability – record keeping
 - Craving Control
 - Give to yourself
 - Self Talk
 - Support

Maintenance: Prevention of Relapse

- Lapse versus Relapse
- Exercise
- Continued care with Health care provider
- Stress reduction

Have patience with all things, but chiefly have patience with yourself. Do not lose courage in considering you own imperfections but instantly set about remedying them - every day begin the task anew.

[Saint Francis de Sales](#)

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"You're spending the best years of your life doing a job that you hate so you can buy stuff you don't need to support a lifestyle you don't enjoy. Sounds crazy to me!"

Lifestyle is the Pill

- High-science
- High-touch
- Low-tech
- Low cost

According to analysts from the Cleveland Clinic, if lifestyle treatments were applied to all patients with CV disease, diabetes, metabolic syndrome (obesity), prostate cancer and breast cancer, than net health expenditures could be reduced by \$930 billion over 5 years.

A difference, to be a difference...
must make a difference.

Gertrude Stein



Thank you!

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