

# Obesity: The Way Out for the Rest of Your Life!



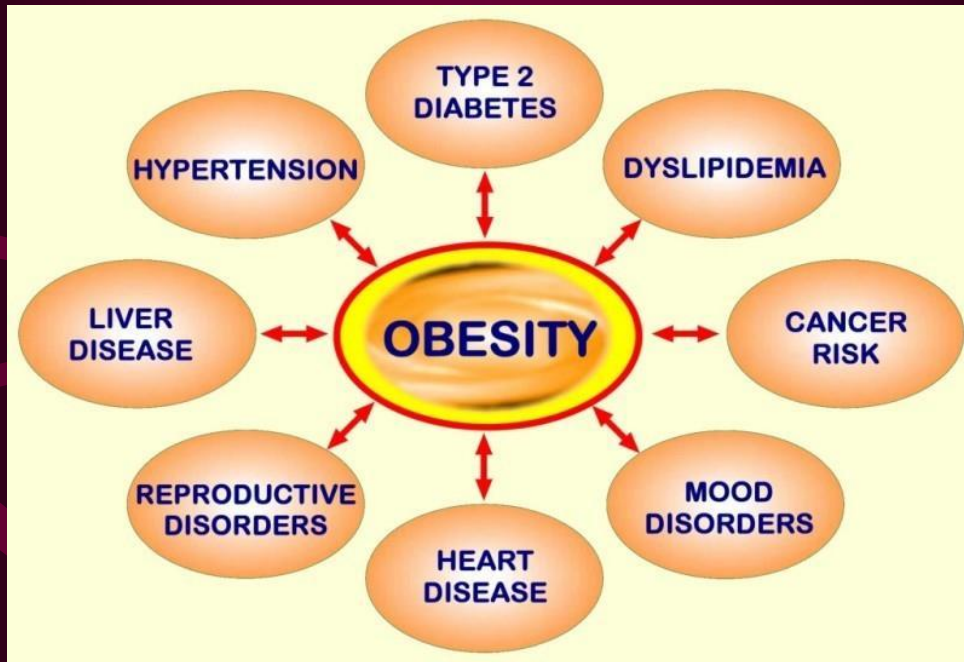
## Obesity Defined

BMI classification	
Underweight	$< 18.5$
Normal range	18.5 - 24.9
Overweight	$\geq 25.0$
<i>Preobese</i>	25.0 - 29.9
Obese	$\geq 30.0$
<i>Obese class I</i>	30.0 - 34.9
<i>Obese class II</i>	35.0 - 39.9
<i>Obese class III</i>	$\geq 40.0$

# Body Mass Index (BMI)

Height (ft/in)	Normal					Overweight					Obese 1					Obese 2					Obese 3						
	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
4'10"	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186	191	196	201	205	210	215
4'11"	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193	198	203	208	212	217	222
5'0"	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199	204	209	215	220	225	230
5'1"	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206	211	217	222	227	232	238
5'2"	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213	218	224	229	235	240	246
5'3"	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208	214	220	225	231	237	242	248	254
5'4"	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	206	215	221	227	232	238	244	250	256	262
5'5"	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234	240	246	252	258	264	270
5'6"	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241	247	253	260	266	272	278
5'7"	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249	255	261	268	274	280	287
5'8"	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230	236	243	249	256	262	269	276	282	289	295
5'9"	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236	243	250	257	263	270	277	284	291	297	304
5'10"	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271	278	285	292	299	306	313
5'11"	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279	286	293	301	308	315	322
6'0"	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287	294	302	309	316	324	331
6'1"	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295	302	310	318	325	333	340
6'2"	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303	311	319	326	334	342	350
6'3"	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311	319	327	335	343	351	359
6'4"	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320	328	336	344	353	361	369

# Obesity Related Diseases

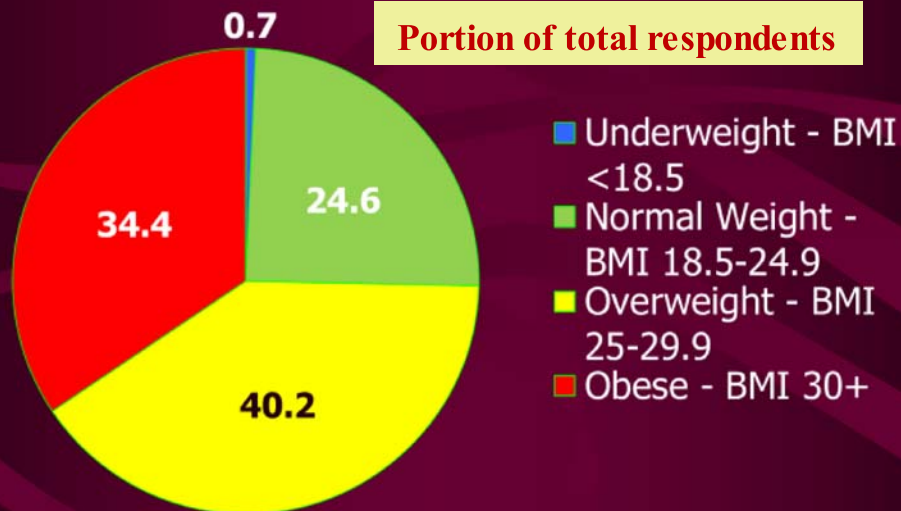


## Obesity and our Leading Causes of Death

LEADING CAUSES OF DEATH, Bermuda 2014	MODIFIABLE RISK FACTORS						
	Overweight & obesity	High Blood Pressure	High Blood Cholesterol	Tobacco Use	Physical Inactivity	High Blood Glucose	Poor Diet
1. Cancers	X	X	X	X	X	X	X
2. Heart Disease	X	X	X	X	X	X	X
4. Dementia Alzheimer's	X	X	X	X	X	X	X
5. Diabetes	X	X	X	X	X	X	X
7. High Blood Pressure	X	X	X	X	X	X	X
8. Renal failure/ CKD	X	X	X	X	X	X	X

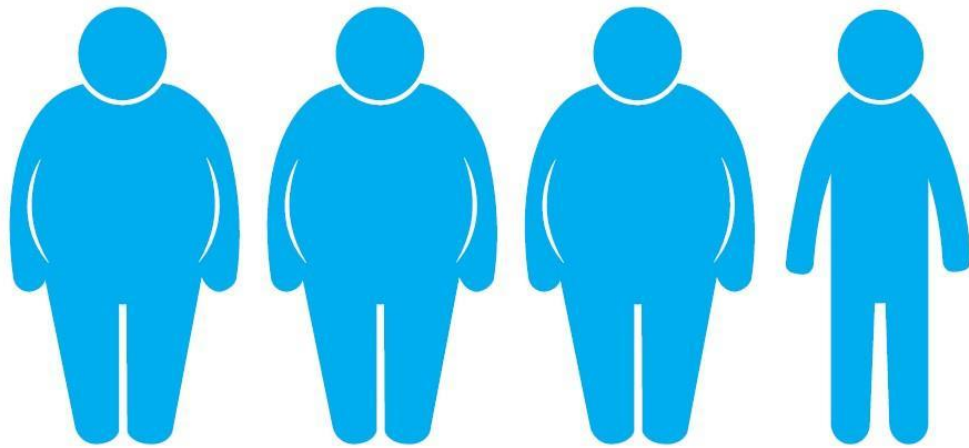
### 3. Cerebrovascular Accidents (strokes)

## OVERWEIGHT & OBESITY

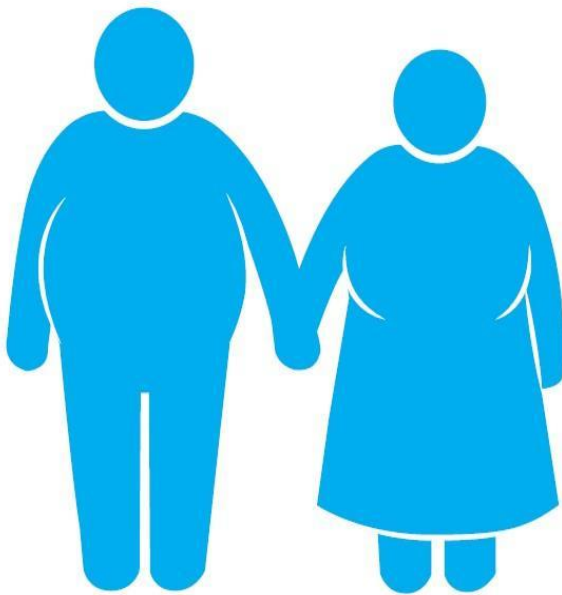


95% CI: 17.5- 31.7

SOURCE: STEPS 2014 Report



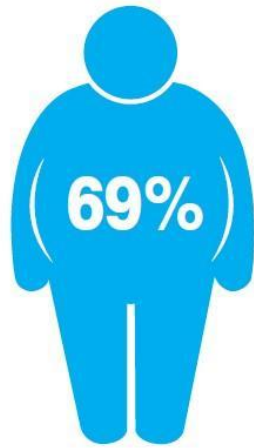
**THREE** OUT OF **FOUR** ADULTS  
IN BERMUDA ARE  
**OVERWEIGHT OR OBESE**



**79%** OF **MEN**  
**AND**  
**70%**  
OF **WOMEN**  
IN BERMUDA  
ARE  
**OVERWEIGHT**  
OR **OBESE**



# PERCENTAGE OF ADULTS WHO ARE OVERWEIGHT OR OBESE.



**18-44**  
YEARS OLD

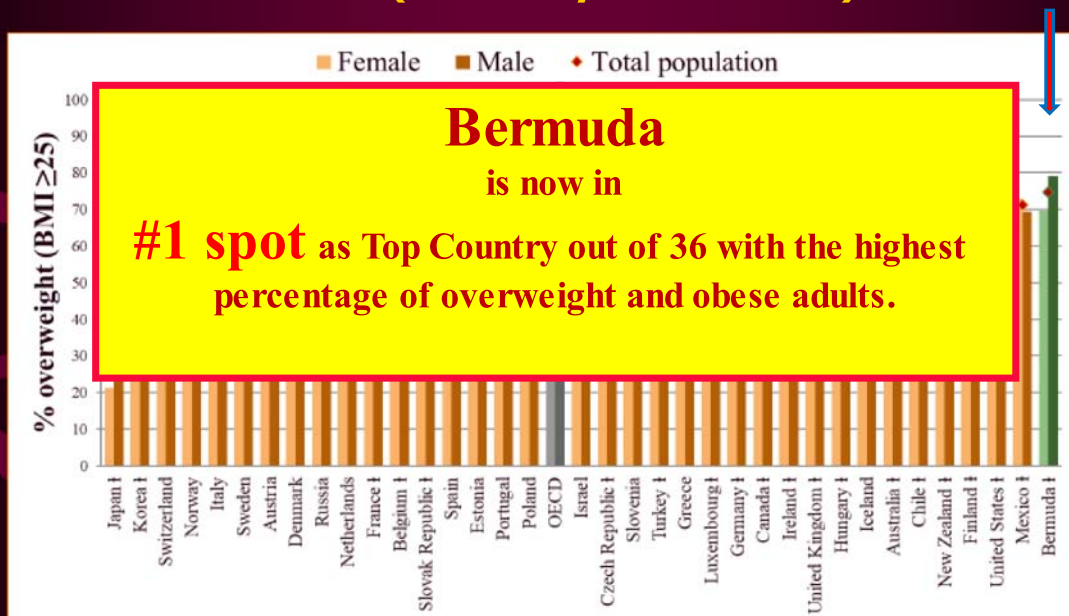


**45-59**  
YEARS OLD



**60+**  
YEARS OLD

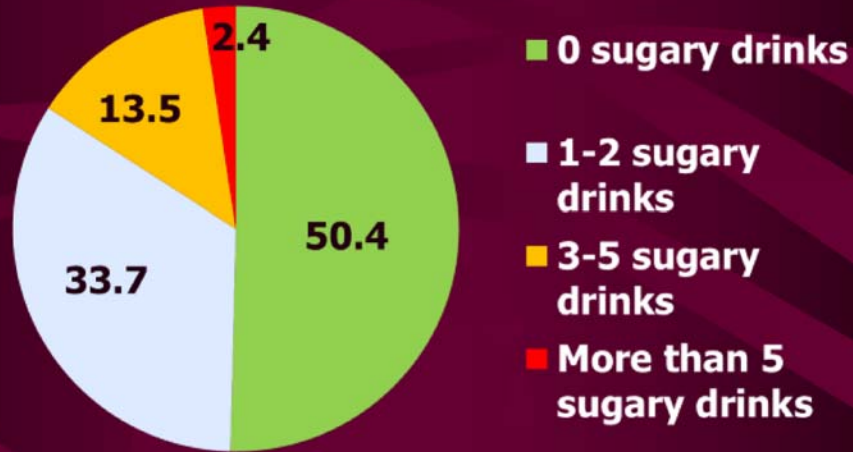
## Overweight/Obesity Prevalence (BMI ≥25) 2014 (or latest year available)



SOURCE: Health in Review, 2016 (MOHS) unpublished

## Poor Dietary Habits

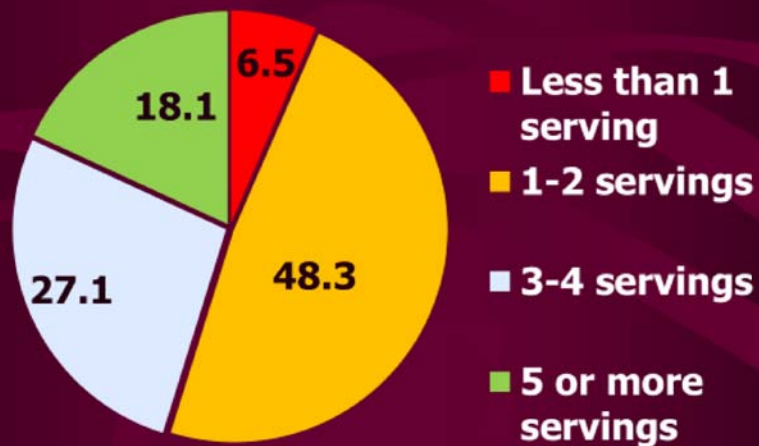
5 out of 6 drink sugary drinks/day



SOURCE: Bermuda STEPS Survey 2014

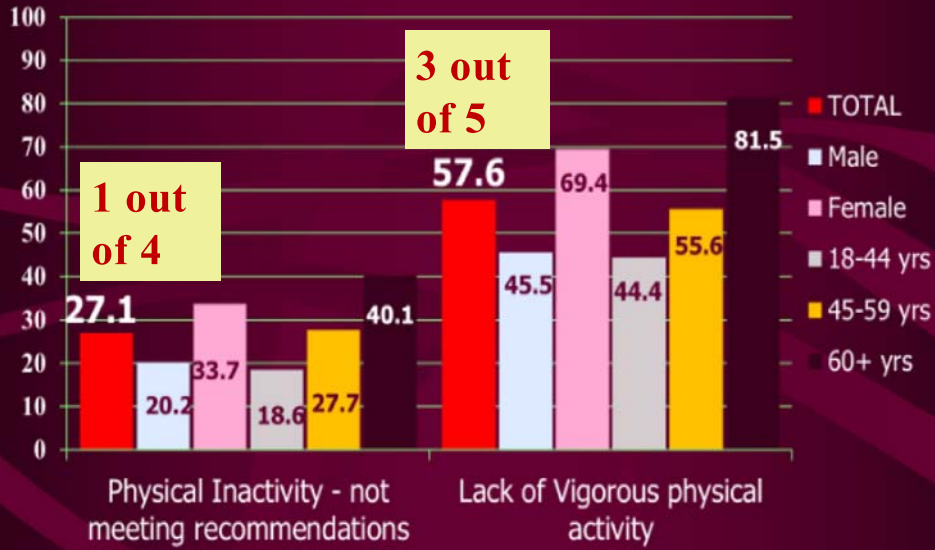
## Poor Dietary Habits

4 out of 5 do not eat enough fruits & veggies



SOURCE: Bermuda STEPS Survey 2014

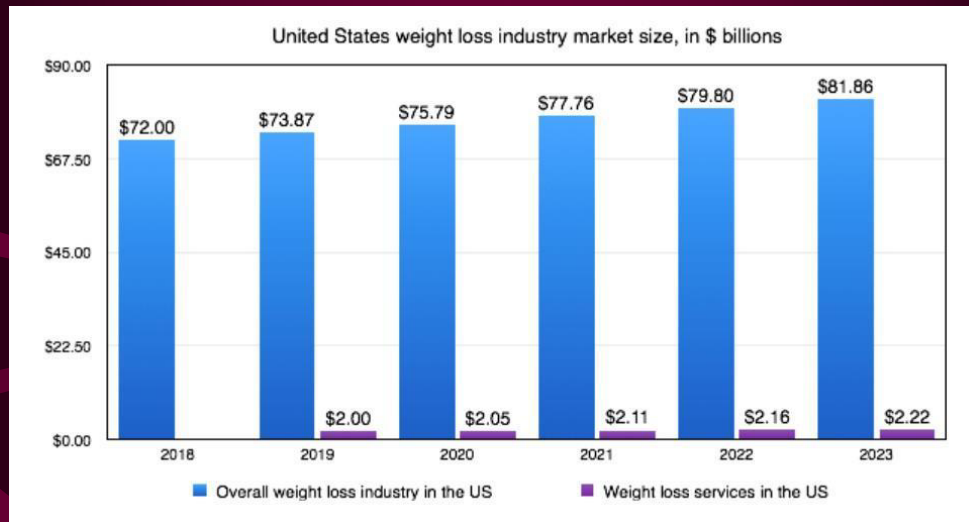
# Physical Inactivity



SOURCE: STEPS 2014 Report

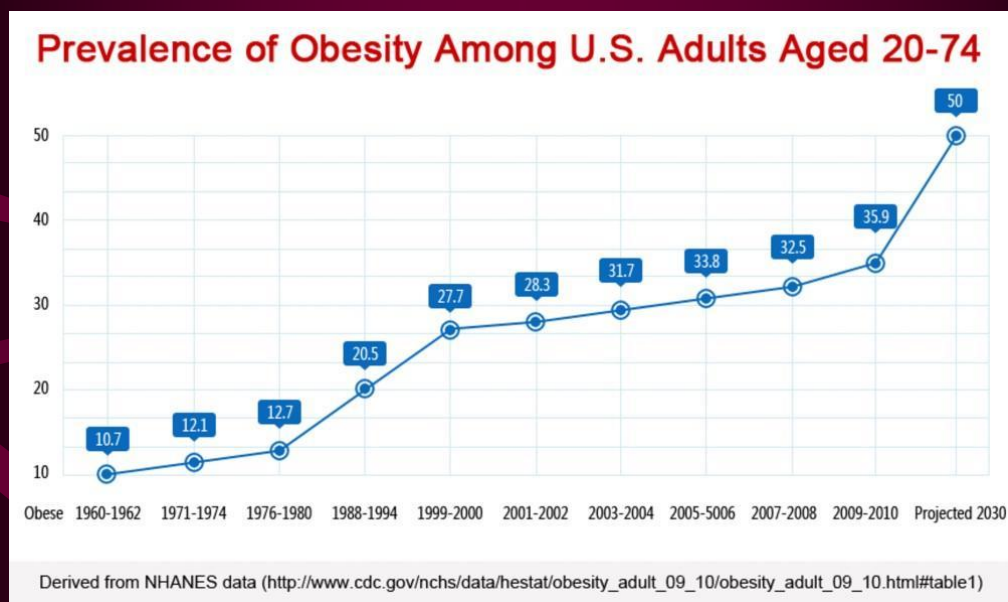


## Weight Loss - A Multi-Billion Dollar Market



It is projected to grow at 2.6% annually through 2023!  
<https://mhojhosresearch.com/2020/04/20/weight-loss-products-and-weight-loss-services-market-size-in-the-united-states/>

## Dismal Projections for Obesity





## Calorie Counting and Portion Control

Eat what you want, **just eat less** to create a calorie deficit. Unfortunately, it almost always **leads to hunger** because of **insufficient food intake**.



This leads to **dissatisfaction** and **reverting back** to old eating habits.

A more effective approach may be to shift the emphasis from restriction to more-positive messages related to increasing intake of healthy low-energy-dense foods. Data

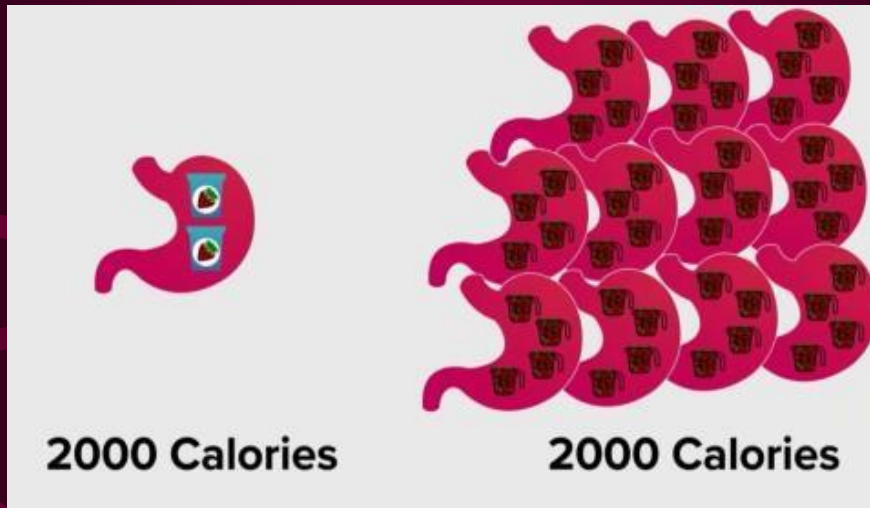
*Am Jour Clinical Nutr 83(6) 1362-8*

## Cups of Food in a Full Stomach



Gastric stretch receptors detect the **distension of the stomach wall** in the presence of food, which directly **stimulates neuronal pathways** to the brain to **trigger satiation** and **reduced appetite**.

## Strawberry Ice cream vs Strawberries



**2 cups of strawberry ice cream = 44 cups of strawberries = 11 stomach fills of strawberries.**

## Stomachfuls to Fit 2,000 Calories



Chopped Broccoli



Watermelon Balls



Apple Slices



Sweet Potato Cubes



Oatmeal



Chickpeas



Eggs



Tuna



Chicken



Cashews



Cheese



M & m's

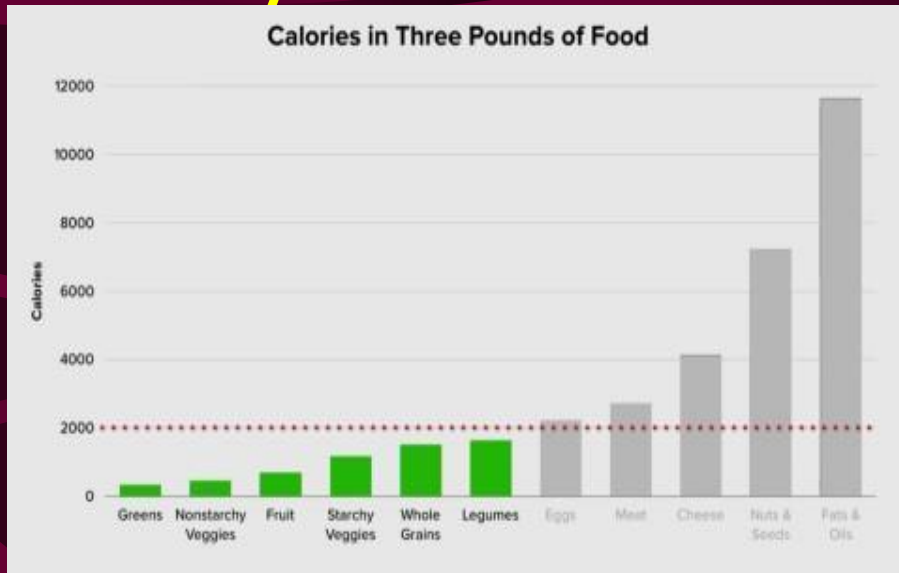


Cookies



Butter

## What you Eat Matters Most



Three pounds of food is what the average American eats a day.

## Oil vs. Berries



These 2 meals have the same number of calories. The 1 tablespoon of oil has the same number of calories as 2 cups of berries.

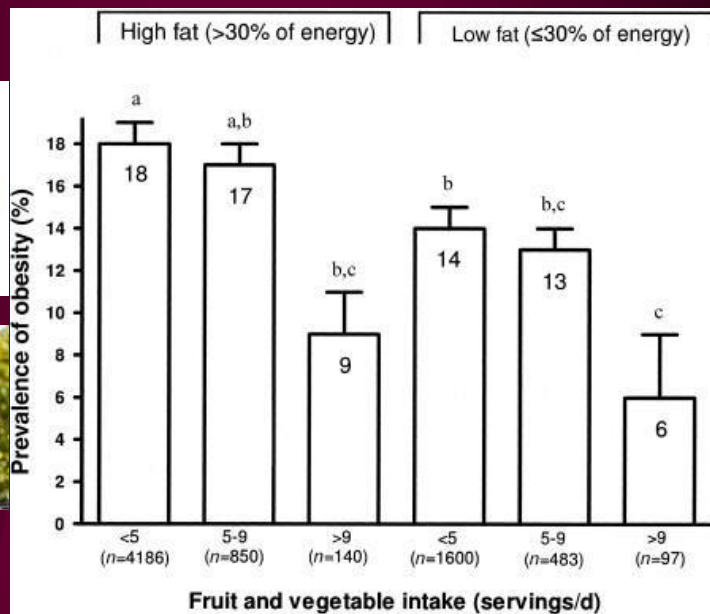
## Fat vs. Fruit and Vegetables



Men and women eating a **low-energy-dense diet** had **lower energy intake** ( $\approx 425$  and  $275$  kcal/day less, respectively) **than** did those eating a **high-energy dense diet**, **even though they consumed more food** ( $\approx 400$  and  $300$  grams/day more, respectively).

Ledikwe J H et al. Am J Clin Nutr 2006;83:1362-1368

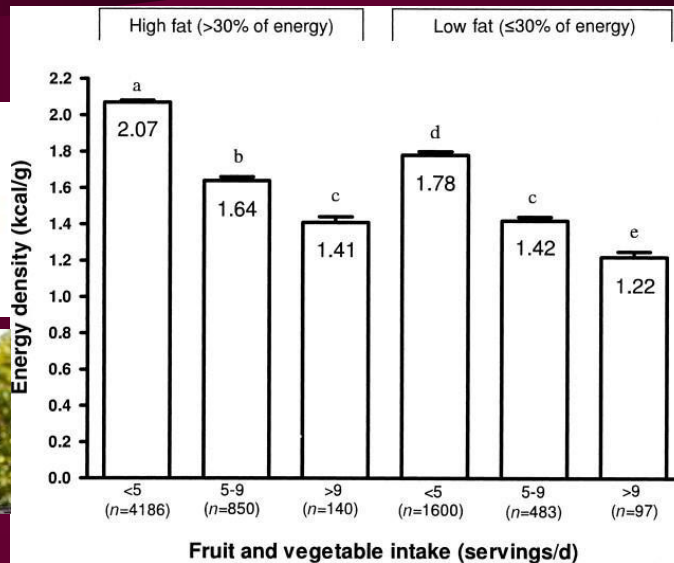
## Fat vs. Fruit and Vegetables



Ledikwe J H et al. Am J Clin Nutr 2006;83:1362-1368



## Fat vs. Fruit and Vegetables



The low fat group that consumed **> 9 servings of fruit and vegetables per day**, ate **520 calories per pound** consumed.

## Processed Food vs. Whole Plant Food



**Refined Diet:** Non-fat Greek yogurt, baked chips, sugar free diet lemonade and a turkey sandwich.

**Unrefined Diet:** South West Salad, beans, nuts, avocado and whole kernel corn.

## Processed Food vs. Whole Plant Food



The diets were matched for calories etc. but **people ate more calories on the processed diet.**

**Refined Diet:** Gained 2 pounds in 2 weeks.

**Unrefined Diet:** Loss 2 pounds in 2 weeks.

## The Traditional Hawaiian Diet Study

**Eat until satisfied of** taro (a starchy root-like potatoes), poi (a mashed form of taro), sweet potato, yams, breadfruit, greens (fern shoots and leaves of taro, sweet potato, and yams), fruit and seaweed. Food was served either **raw or steamed.**

**Limited amounts of** fish and chicken (**5 to 7 ounces** <10% of calories in the diet from fat).

*Am J Clin Nutr 1991;53:1647S-51S*



## Average Changes in Health Risk Factors in 21 Days

TABLE 1

Average energy intake of participants before the program (preprogram diet) and during the program (Hawaiian diet)

	Preprogram diet,	Hawaiian diet,
Total daily energy	10.86 MJ (2594 kcal)	6.57 MJ (1569 kcal)
Fat	830 [32%]*	99 [7%]
Carbohydrate	1323 [51%]	1233 [78%]
Protein	441 [17%]	237 [15%]

\* Percent of energy given in brackets.

Total cholesterol -72 mg/dl  
LDL cholesterol -40 mg/dl  
Triglycerides -98 mg/dl  
Blood Sugar -189.5 mg/dl  
**Body weight -17 pounds**



## Average Changes in Health Risk Factors in 21 Days

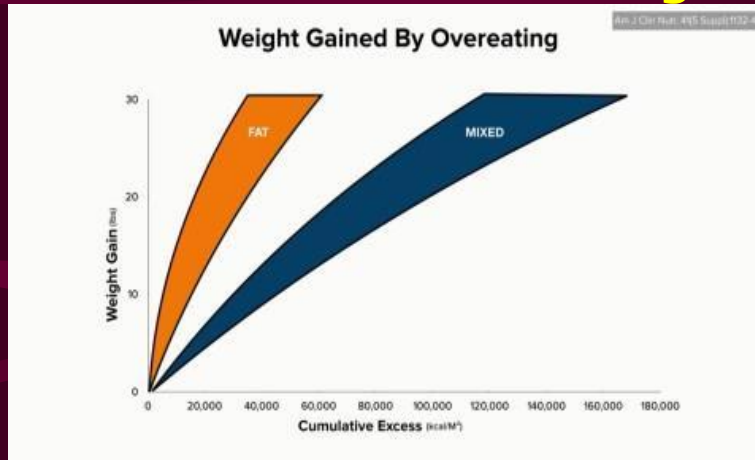
There **calorie intake** went from 2,714 to 2087 kcal/day or **-627 kcal**.

The **apparent satiety** despite the decrease in energy intake in this diet may be **due to participants eating 1/3 of a pound more food** than before going on this program.

**They ate more food yet still lose significant body weight.** It's all about the whole plant foods.

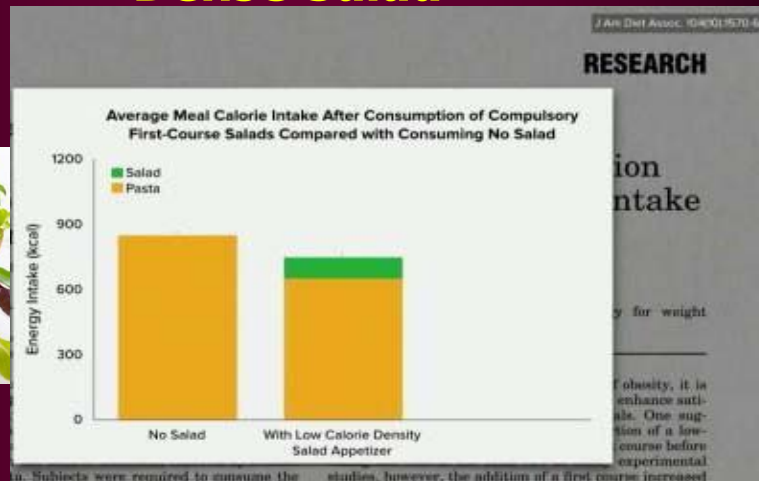


## Excess Fat Calories and Weight Gain



The amount of excess calories needed to gain 30 pound in **lean people with added fat (40,000** extra calories) vs **mixed diet in lean people (140,000** extra calories) without extra fat.

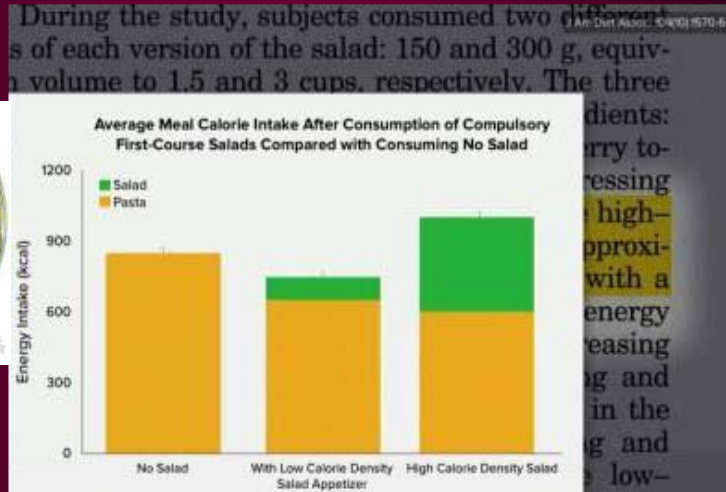
## Preloading a Meal with a Low-Calorie Dense Salad



They ate **200 few calories of pasta** by starting the meal with a low-calorie dense salad of lettuce, tomato, cucumber and celery.

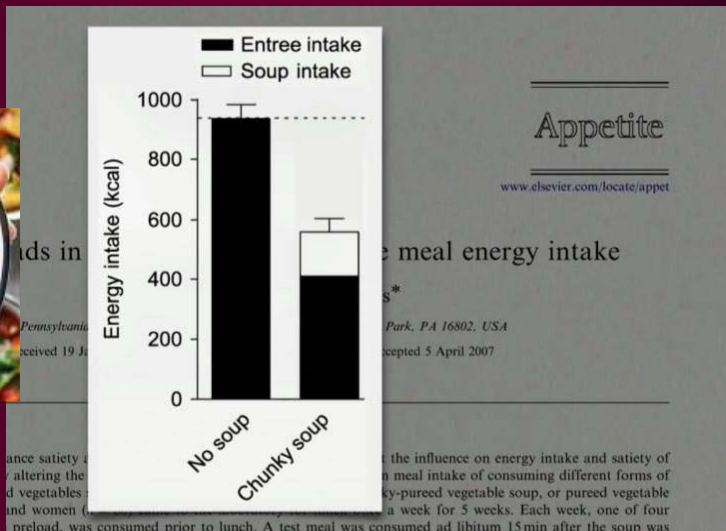


## Preload a meals with a High-Calorie Dense Salad



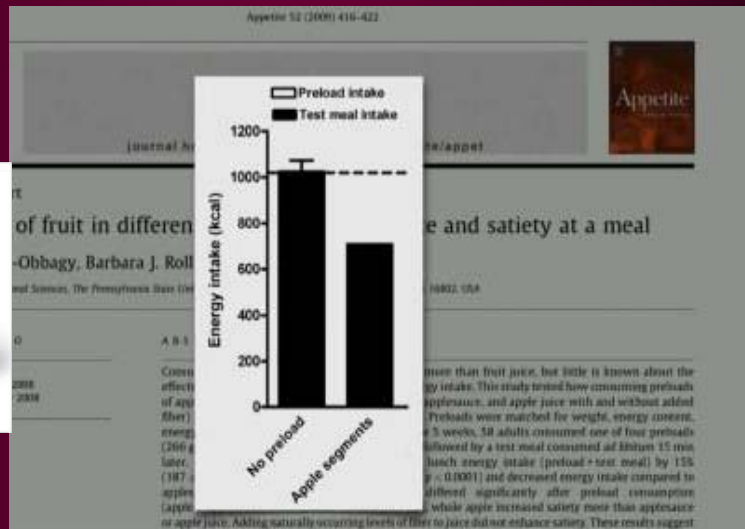
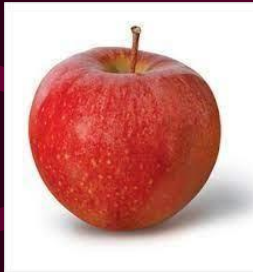
They added a high fat dressing and cheese to the salad which increased the meal calories by **200**.

## Preloading a Meal with a Chunky Soup



They **ate 300 less calories** of the entrée by consuming a chunky vegetable soup (175 calories).

## Preload a Meal with a Large Apple



Study participants **consumed 300 calories less** in a meal if they started the meal with one large apple.

## The Best Foods to Preload a Meal

### Calories Per Cup

#### Negative Calorie Preloading

< 100 calories/cup	< 300 calories/cup	300 - 600 calories/cup	> 600 calories/cup
most fresh fruit most vegetables	avocados & bananas starchy vegetables pasta & whole grains beans, lentils & chickpeas yogurt seafood & wild game	dried fruit french fries & onion rings bread fried tofu eggs beef, pork & poultry	nuts & nut butters oil chocolate soynuts cheese bacon

To reduce calorie intake in a meal preload (from the first column) with **1-2 cup** of calorie dilute food.

# Water and Energy Density

## UNIFYING PRINCIPLE OF DIETARY PATTERNS: ENERGY DENSITY

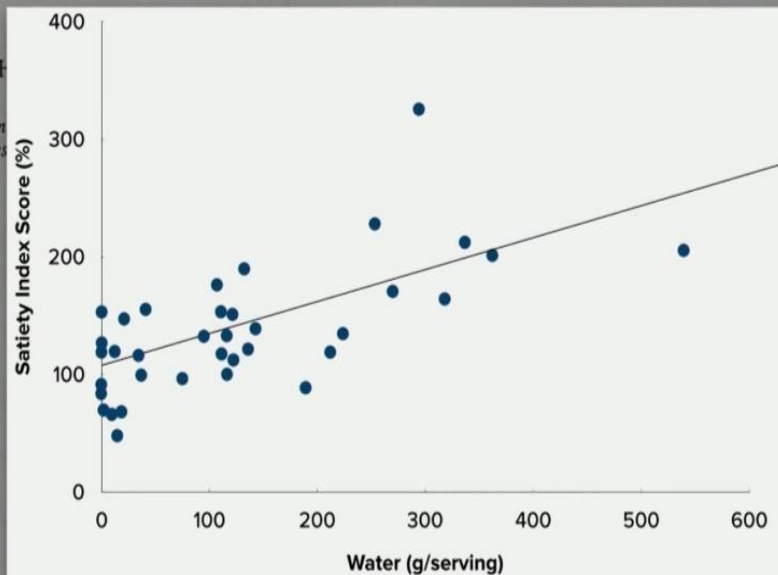
The energy density of a food or beverage can range from 0 calories per gram to 9 calories per gram and varies based on the proportions of water (0 calories per gram), fiber (2 calories per gram), carbohydrate (4 calories per gram), protein (4 calories per gram), alcohol (7 calories per gram), and fat (9 calories per gram). Fat is the most energy-dense macronutrient, so when the fat content of a food is reduced, energy density also decreases. Water, however, has the biggest influence on energy density because it adds weight to food without adding calories. The more water a food contains, regardless of the fat content, the lower the energy density of the food. Low-energy-dense foods can help to reduce energy intake by enhancing satiation and satiety through psychological and physiologic mechanisms. This satiety leads to terminating a meal sooner, prolonging the time until the next eating occasion, and reducing intake at the next meal.<sup>34,35</sup>

The energy density of a food or beverage determines the portion size that can be eaten for a given number of calories: the lower the energy density, the larger the portion for the same number of calories. Fig. 2 provides a visual example of how the portion size of a 100-calorie snack can vary based on the energy density of the food.

# Water and Satiety Index

A satiety index of common foods

SHA F  
<sup>1</sup>Human  
Sciences



# High Water Vegetables

## Water Content of Foods

### 100-90%

asparagus, beets, bell peppers, broccoli, cabbage, cauliflower, celery, cucumber, grapefruit, green beans, greens, lettuce, melons, mushrooms, okra, onions, pumpkin, strawberries, summer squash, tomatoes, zucchini

### 79-70%

avocados, bananas, canned beans, corn, couscous, edamame, eggs, millet, oysters, pomegranates, potatoes, pudding, quinoa, rice, sweet potatoes

### 89-80%

apples, apricots, artichokes, bean sprouts, brussels sprouts, carrots, cherries, grapes, jello, kiwifruit, mangoes, oatmeal, other berries, other citrus, pears, peas, pineapples, plums, tofu, winter squash, yogurt

### 69-60%

barley, beef, boiled beans, canned tuna, hummus, ice cream, lobster, lunch meat, pasta, pork, poultry, salmon

# High Water Fruit

## Water Content of Foods

### 100-90%

asparagus, beets, bell peppers, broccoli, cabbage, cauliflower, celery, cucumber, grapefruit, green beans, greens, lettuce, melons, mushrooms, okra, onions, pumpkin, strawberries, summer squash, tomatoes, zucchini

### 79-70%

avocados, bananas, canned beans, corn, couscous, edamame, eggs, millet, oysters, pomegranates, potatoes, pudding, quinoa, rice, sweet potatoes

### 89-80%

apples, apricots, artichokes, bean sprouts, brussels sprouts, carrots, cherries, grapes, jello, kiwifruit, mangoes, oatmeal, other berries, other citrus, pears, peas, pineapples, plums, tofu, winter squash, yogurt

### 69-60%

barley, beef, boiled beans, canned tuna, hummus, ice cream, lobster, lunch meat, pasta, pork, poultry, salmon



# High Water Starches

## Water Content of Foods

### 100-90%

asparagus, beets, bell peppers, broccoli, cabbage, cauliflower, celery, cucumber, grapefruit, green beans, greens, lettuce, melons, mushrooms, okra, onions, pumpkin, strawberries, summer squash, tomatoes, zucchini

### 79-70%

avocados, bananas, **canned beans**, corn, **couscous**, edamame, eggs, **millet**, oysters, pomegranates, **potatoes**, pudding, **quinoa**, **rice**, **sweet potatoes**

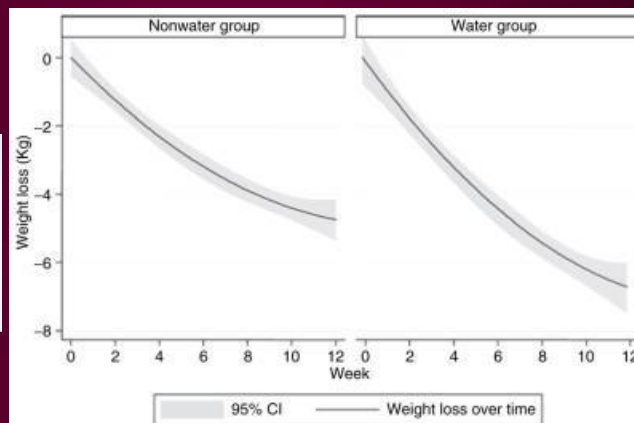
### 89-80%

apples, apricots, artichokes, bean sprouts, brussels sprouts, carrots, cherries, grapes, jello, kiwifruit, mangoes, **oatmeal**, other berries, other citrus, pears, peas, pineapples, plums, tofu, winter squash, yogurt

### 69-60%

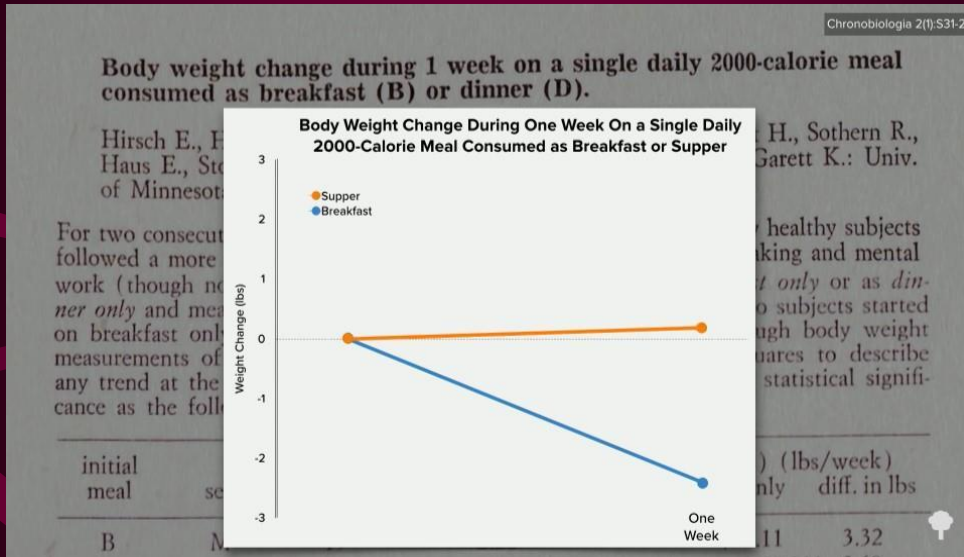
**barley**, beef, boiled beans, canned tuna, hummus, ice cream, lobster, lunch meat, pasta, pork, poultry, salmon

## Water Intake and Weight Loss

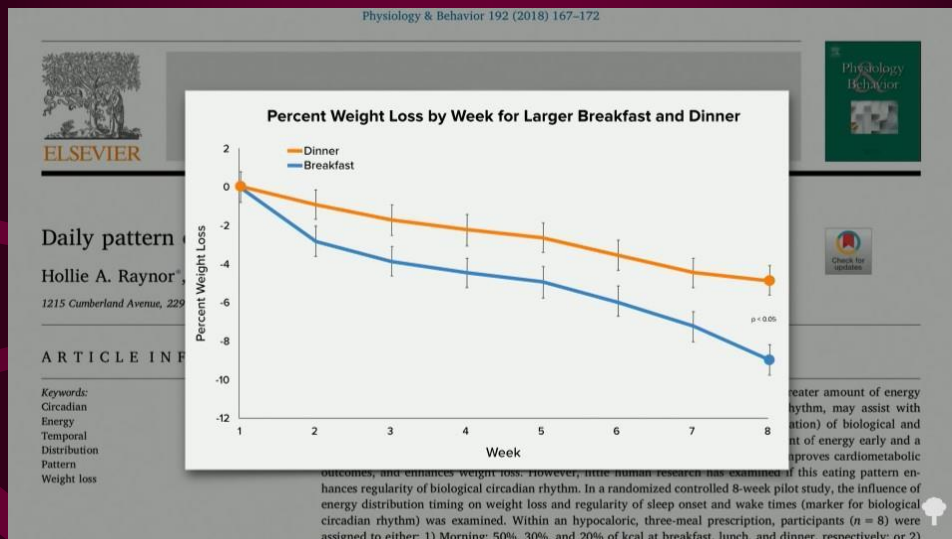


When combined with a hypocaloric diet, **2 cups of water prior to each of three main daily meals** (1.5 l/d) led to a **4.4 pounds** greater weight loss over 12 weeks when compared to a hypocaloric diet alone. *Obesity (Silver Spring) 2010 Feb; 18(2): 300-307*

# Eat Breakfast Like a King



# Eat Breakfast Like a King



# Sleep Restriction and Lean Muscle Mass

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## Abstract

**Study Objectives:** To examine the effects of moderate sleep restriction (SR) on body weight, body composition, and metabolic variables in individuals undergoing caloric restriction (CR).

**Methods:** Overweight or obese adults were randomized to an 8 week caloric restriction (CR) regimen alone (n = 15) or combined with sleep restriction (CR + SR) (n = 21). All participants were instructed to restrict daily calorie intake to 95 per cent of their measured resting metabolic rate. Participants in the CR + SR group were also instructed to reduce time in bed on five nights and to sleep ad libitum on the other two nights each week.

**Results:** The CR + SR group reduced sleep by 57 ± 36 min per day during SR days and increased sleep by 59 ± 38 min per day during ad libitum sleep days, resulting in a sleep reduction of 169 ± 75 min per week. The CR and CR + SR groups lost similar

	CR (n = 15)	CR + SR (n = 21)	P
Δ body weight, kg	-3.3 ± 3.2	-3.2 ± 2.5	0.87
Total mass loss as fat mass, %	80.7 ± 43.3	16.9 ± 104.5	0.016 <sup>†</sup>
Total mass loss as lean mass, %	17.3 ± 43.1	84.8 ± 110.2	0.018 <sup>†</sup>

undergoing hypocaloric weight loss, despite similar weight loss. SR may adversely affect changes in body composition and "catch-up" sleep may not completely reverse it.

# Poor Sleep and Hunger



## HUNGER!

Brain Chemistry sends the following message:

1. Give me SUGAR
2. Give me FAT
3. Give me NOW

The sleepy brain is the *craving* brain

## Exercise and Weight Loss



According to the U.S. National Weight Loss Registry, the individuals who **lost and maintained a substantial amount of body weight**, reported expending the energy equivalent of walking 25 to 30 miles per week, which is a minimum of **4.2 miles a day or 70 minutes of brisk walking, 6 days a week.**

*American College of Sports Medicine (2013 -03-26). ACSM's Resources for the Personal Trainer. Wolters Kluwer Health. Kindle Edition.*

## Herbs that Support Weight Loss





## Garlic Powder and Weight Loss



Original Article

### Effect of garlic powder consumption on body composition in patients with nonalcoholic fatty liver disease: A randomized, double-blind, placebo-controlled trial

Davood Soleimani<sup>1</sup>, Zamzam Paknahad<sup>1,2</sup>, Gholamreza Askari<sup>3,4</sup>, Bijan Iraj<sup>5</sup>, Awat Feizi<sup>6</sup>

<sup>1</sup>Food Security Research Center, <sup>2</sup>Departments of Clinical Nutrition and <sup>3</sup>Community Nutrition, Faculty of Nutrition and Food Sciences, <sup>4</sup>Isfahan Endocrine and Metabolism Research Center, <sup>5</sup>Department of Epidemiology and Biostatistics, Faculty of Health, Isfahan University of Medical Sciences, Isfahan, Iran

**Materials and Methods:** In this clinical trial, 110 subjects with NAFLD were randomly assigned to the intervention or the control group. The intervention group received two garlic tablets (containing 400 mg of garlic powder) daily while the control group received placebo tablets. Dietary intake and physical activity of

	Group	Before	After	P	Percentage change	P
Body fat (kg)	Garlic	27.75±8.63	25.13±8.29	0.021	-2.91±5.15	0.023
	Placebo	26.15±8.91	25.87±8.62	0.190	-0.42±5.05	

In a RCT **¼ tsp garlic powder a day** reduced **body fat by 6 pounds** over 15 weeks.

## Black Cumin Seed and Weight Loss



*Ethnopharmacological relevance:* *Nigella sativa* L. (*N. sativa*) is a traditional herbal medicine that has been used for centuries to treat rheumatoid arthritis, diabetes, asthma, and other metabolic disorders. Recently, anti-obesity characteristics of *N. sativa* have been indicated.

*Aim of the study:* The effects of *N. sativa* as a complementary therapy in obesity management remains controversial. We aimed to perform a meta-analysis on the effects of supplementation with *N. sativa* on some anthropometric indices in adult subjects.

*Materials and methods:* We searched PubMed/Medline, Cochrane Library, ISI Web of Science, and Scopus databases until June 2017 to identify relevant placebo-controlled clinical trials. Data was reported as weighted mean differences and standard deviations to show the magnitude of effects for *N. sativa* on body weight, body mass index (BMI) and waist circumference (WC).

*Results:* Findings of 11 studies revealed that *N. sativa* supplement reduced body weight (-2.11 kg, 95% CI: -3.61, -0.61, I<sup>2</sup>:72.4%), BMI (-1.16 kg/m<sup>2</sup>; 95%CI: -1.81, -0.51; I<sup>2</sup>: 40.1%) and WC (-3.52 cm, 95%CI: -4.10, -2.92, I<sup>2</sup> =0%) significantly compared to placebo groups.

*Conclusion:* Supplementation with *N. sativa* exerts a moderate effect on reduction in body weight, BMI and WC. However, due to the high heterogeneity for body weight and limited high quality studies, the findings should be

*Results:* Seven trials were included in the meta-analysis of glycemic and serum lipid profile end points. Supplementation with *N. sativa* significantly improved fasting blood sugar (FBS) [-17.84 mg/dl, 95% CI: -21.19 to -14.49, p < 0.001], HbA1c [-0.71%, 95% CI: -1.04 to -0.39, p < 0.001], total-cholesterol (TC) [WMD: -22.99 mg/dl, 95% CI: -32.16 to -13.83, p < 0.001] and LDL-cholesterol (LDL-c) [-22.38 mg/dl, 95% CI: -33.60 to -11.15, p < 0.001].

Findings from 11 studies revealed that a **¼ tsp of black cumin seeds** was associated with an average **weight loss of 4.5 pounds**.

## Cumin Seed and Weight Loss



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**Table 4**  
Changes in anthropometric factors in the experimental and control groups.

Measured parameter	Experimental (n = 44)	Control (n = 44)	P-value
Body weight (kg)	-6.20 (-7.92%)	-4.19 (-5.54%)	0.005
BMI (kg m <sup>2</sup> )	-2.35 (-7.14%)	-1.31 (5.54%)	0.005
Waist circumference	-8.02 (-8.22%)	-5.94 (-5.51%)	0.005
Fat-free mass (kg)	-0.04 (-0.83%)	-0.34 (-0.71%)	0.48
Fat mass (kg)	-5.51 (-18.12%)	-3.75 (-10.66%)	0.005
Fat mass percent (percent)	-5.99 (-14.64%)	-3.79 (-4.91%)	0.005

**Effect of cumin powder on anthropometric factors in overweight and obese women: A randomized clinical trial**

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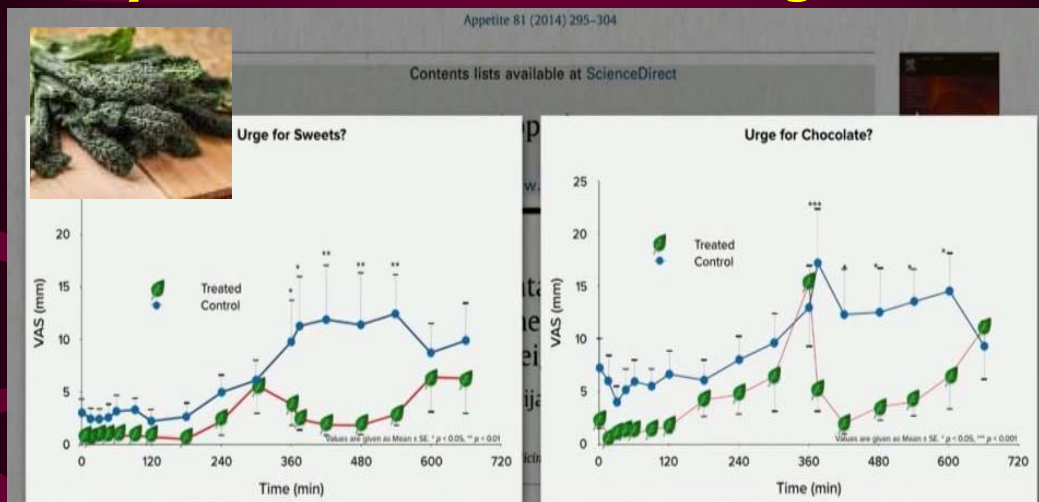
<sup>c</sup> Department of Epidemiology and Biostatistics, Shahid Beheshti University of Medical Sciences, Tehran, Iran

**Keywords:** Cumin powder, Obesity, Body composition

**Abstract:** **Objective:** To evaluate the effect of cumin powder on anthropometric factors in overweight and obese women. **Materials & methods:** In this randomized clinical trial, 88 overweight/obese women were randomly

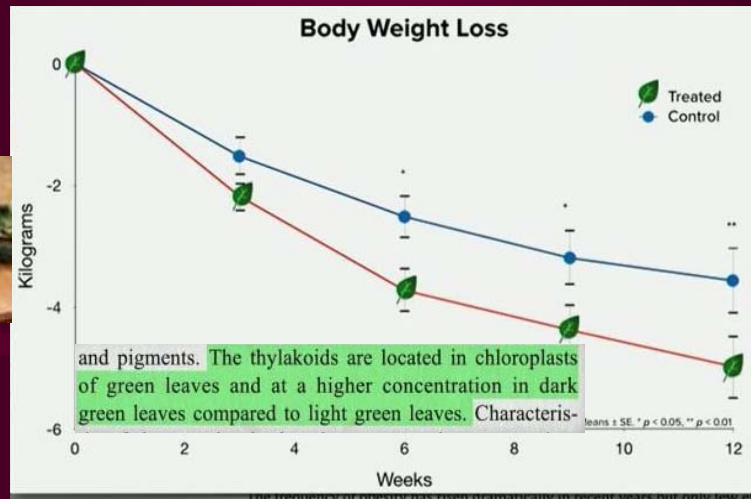
**1/2 tsp cumin powder** at lunch and dinner resulted in a weight loss of about **4 pounds** and **1 inch off their waist** in **3 months**.

## Thylakoids in Green and Weight Loss



Thylakoids found in greens, boost the **appetite suppressing** hormone GLP -1 and suppresses the **urge for sweets and chocolate**.

## Thylakoids in Greens and Weight Loss



Thylakoids from greens significantly increased weight loss by an **additional 4 pounds** in one study. Dosage: **1/2 to 1 cup of cooked greens**.

## High Fiber Foods and Weight Loss



bypass weight loss surgery in patients with morbid obesity (72). However, reduced appetite and adiposity with high dietary fibre intake does not always correlate with an elevation in anorectic gut hormones, suggesting alternate and/or parallel SCFA-mediated mechanisms. Of note, Frost and coworkers (21) used tracer technologies to demonstrate that acetate produced by the fermentation of dietary fibre in the large intestine can cross the blood-brain barrier and has a direct effect on the hypothalamic regulation of appetite.

The bacteria in our gut use fiber as fuel and to create SCF (e.g. acetate) which travel to the brain and have a direct effect on **how much we eat, our desire for high energy foods, fat burning and energy expenditure**.

## High Fiber Foods and Weight Loss



An additional **14 grams a day of fiber produces a 10% decrease in energy intake** and a **weight loss of 4 pounds** over 3.8 months.

**In the obese, the mean energy intake** in all studies was reduced to **82% by higher fiber intake** in overweight and obese participants; **weight loss was 5 pounds.**

**1 cup beans = 15 gram fiber.**

Nutrition Review 2001 May;59(5):12989.

## Atkin's High Fat/Meat vs. Ornish Low Fat Vegan Diet



**Atkins** – A weight loss of **0.6 pound per week.**

**Ornish** – A weight loss of **1 pound per week.**

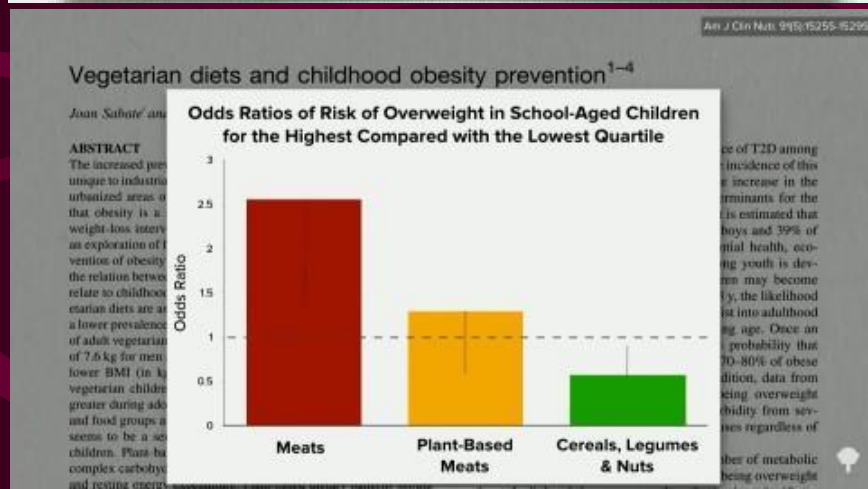
After 1 year there was a **52% decrease in LDL cholesterol** on the **plant food diet** compared to a **6% increase in LDL cholesterol** on the **low carb Atkin's diet.** A review of multiple low carb studies found an **increase in death rates from all**

**causes.** *Prev Cardiol.* 2002; 5: 110 -118. *Angiology.* 2000; 51:817 -826. *British Journal of Nutrition.* Vol 110 (05) Sep. 2013. *Plos ONE* 8(1): e55030.

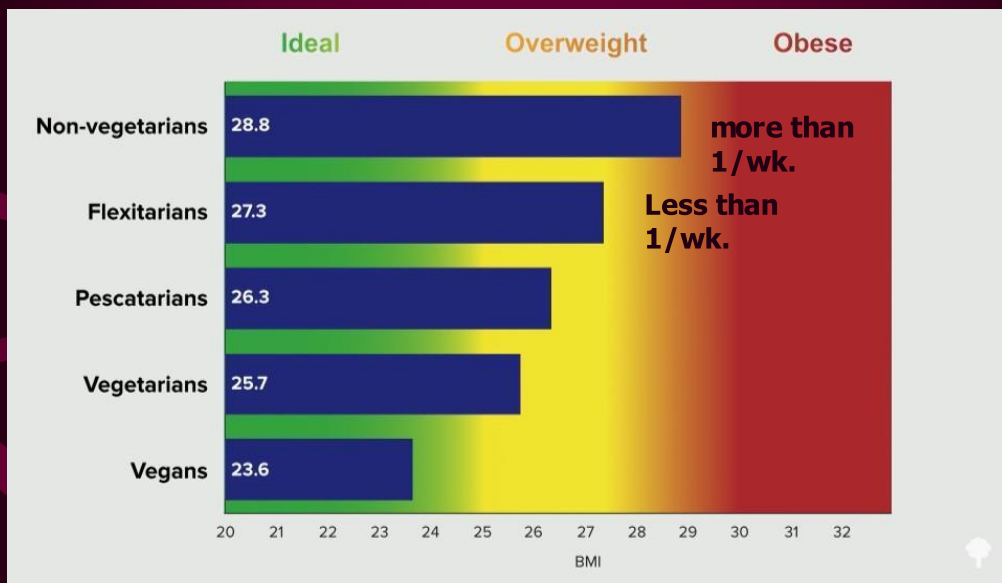


# Vegetarian Diets and Weight Loss

	Non-vegetarians	Vegetarians
REE (Kcal) FFM, age, gender, exercise adjusted	1254 ± 56	1536 ± 61



# Adventist Health Study II



## Adventist Health Study II

*Compared to non-vegetarians, vegans/vegetarians:*

- Watched less television
- Slept more hours per night
- Consumed more fruits and vegetables
- Consumed less saturated fat
- Typically ate foods with a low glycemic index, such as beans, legumes and nuts



## Addicted to Food

A food addiction is a **relationship** with food that gives the **illusion** that **real needs are being met** through a **mood change**.



## Pizza...Your On My Mind

“When I smell a hot slice, all I’m thinking about is that pizza... **Very little holds my attention the way pizza holds my attention.** I’m telling you, food talks. All food talks.”

Statements from the book The End of Over Eating



## Anticipation, Happiness & Fulfillment

“**There are days when I dream about food.** I think back to delicious meals I once had and **long to feel the same** sense of *anticipation, happiness, and fulfillment* they provide. Pizza, candy bars, potato chips, smoothies...”



## Comfort, Stimulation, Fun, Sedation

"It adds color to the day – comfort, stimulation, sedation, happiness, the chance to put fun in the day...you can create one more moment of good feeling – **but it never last.**"



## Engineered Foods

**Body systems** that enable us to eat just enough to maintain energy balance can **go out of control** when animals and humans have easy access to foods that are **high in sugar, fat and salt - hyperpalatable food.**





## Engineered Food

In one rodent experiment, rats were provided a **10% sugar solution** in one corner of the cage along with a standard chow ration. Over time the **healthy appetites of the rodents became perverted**, and **these animals literally drank themselves to death** choosing nutrient deprivation rather than a healthy diet.



## Rewired Brain Chemistry

"...the mere **touch of sugar** on the tongue produces an immediate **endorphin rush.**"

Somer E. Food and Mood, (1995) pp. 43-4

These **opioids** produced by eating high-sugar, high-fat foods can **also relieve pain or stress and calm us down** but the **effects are not long-lasting.**



## Manipulated by the Food Industry

"The food industry is the **manipulator** of the consumers minds and desires."

"**Food is escape**, more and more. Growing levels of stress create a need for indulgence and relaxation."

"Indulging in a premium snack is a **self-centered activity**, a small moment of relaxation, of me-time."

The End of Over Eating



## The Power of Whole Plant Foods

Complex carbohydrates such as whole grain breads, beans, cracker and starchy vegetable **do not create blood sugar swings** which give way to **cranky, aggressive, nervous, tired and foggy thinking** people.

They do help **satisfy endorphin needs** creating feelings of positive wellbeing and pain tolerance, and **serotonin needs**, which regulates mood, appetite, pain tolerance, food cravings and sleep habits."

Food and Mood

Elizabeth Somers,



## Power to do the Impossible

**"I can do all things through Christ**  
that strengthens me." *Philp. 4:13*



"Now unto him that is able to do  
**exceeding abundantly above all**  
**that you can ask or think** according to  
the power that worketh in you." *Eph. 3:20*

**"Trust in the Lord with all thine heart.** Lean  
not unto thy own understand. **In all your ways**  
**acknowledge him and he shall direct thy**  
**path.**" *Prov. 3:5-6*

*"Nothing taste better than healthy feels." Dr. Greger*

### Obesity: The Way Out for the Rest of Your Life! – Quiz

1. A BMI level of 30 or above is obese, while a BMI level between 18.5 and 24.9 is normal. T F
2. Three out of every 4 adults in Bermuda are obese. T F
3. Bermuda is #2 out of 36 countries with the highest percentage of overweight and obese adults. T F
4. According to the Step Study, 33.7% of Bermudians drink 1-2 sugary drinks a day. T F
5. Four out of every 5 Bermudians do not eat enough fruits and vegetables. T F
6. One out of every 4 adults in Bermuda is physically inactive. T F
7. While the U.S. weight loss industry is making billions of dollars every year and is projected to grow by 2.6% annually through 2023, we do not see corresponding projections of declining rates of obesity due to these weight loss services. T F
8. Two cups of strawberry ice cream have as much calories as 44 cups of strawberries or 11 stomachs-full of strawberries. T F
9. By consuming a low-energy dense diet, you can eat more food than someone on a high-energy dense diet and still take in less calories. T F
10. By starting your meal with a low-calorie dense salad (lettuce, tomato, cucumber, celery), you could reduce your calorie intake in that meal by 200. T F
11. By preloading your meal with a large apple or a bowl of chunky vegetable soup (175 calorie), you could lower your calories intake of that meal by 300 calories. T F
12. When the calorie amounts for the days are the same, eating a large breakfast is associated with significantly more weight loss than eating a large supper. T F
13. Poor sleeping habits can lead to hunger (cravings) for sugar and fat. T F
14. Walking 70 minutes a day (briskly) 6 days a week, represents an amount of exercise that has been associated with those who have lost significant weight and kept it off. T F
15. Garlic powder, black cumin seed and cumin have all been shown in scientific studies to reduce body weight or body fat. T F
16. Dark greens can reduce the urge for sweets and chocolate, as well as increase weight loss. T F
17. High fiber foods cannot influence how much we eat, our desire for high energy foods, fat burning or the energy we expend. T F
18. The opioids produced by eating high-sugar, high-fat foods can relieve pain or stress and calm us down, but these effects are not long-lasting. T F
19. Low carb diets, such as the Atkin's Diet is a healthy weight loss programme with long-term benefits. T F
20. A food addiction is a relationship with food that gives the illusion that real needs are being met through a mood change. T F