# Priest Wellness Fair

## Weight Loss Management and Latest Trends

November 18, 2021

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***-United States Conference of Catholic Bishops***

**Mary Salm**
Director Spiritual Care, Ascension WIsconsin

# Weight Loss Management and Latest Trends

Dr. Christopher Weber

# DISCLOSURES

1. Research activities with Ascension Wisconsin Research Institute including industry-sponsored clinical trials

2. Owner, Refine Wellness Consulting, strength and conditioning coaching

# OBJECTIVES

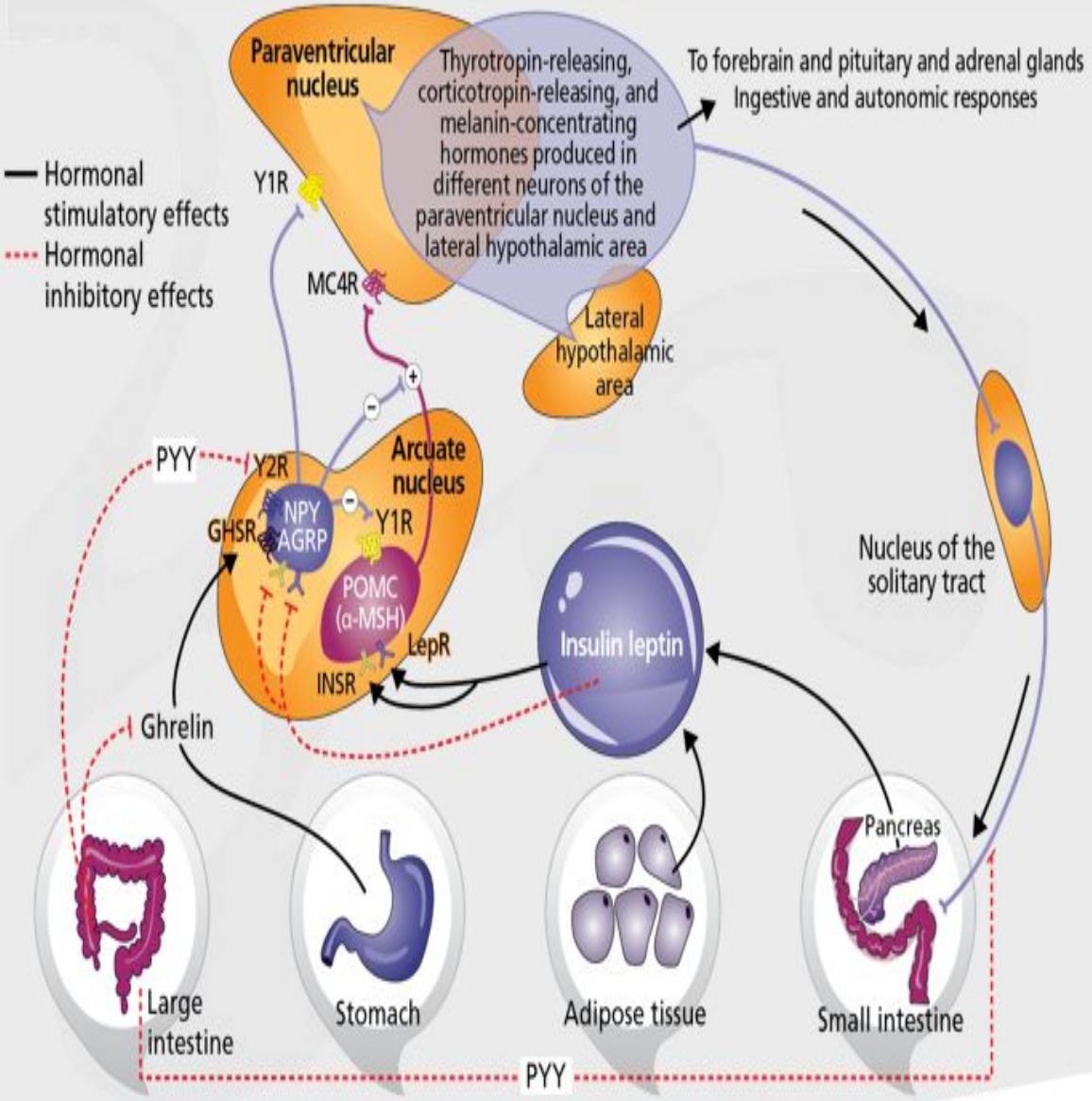
1. Become familiar with several popular diet trends including evidence for or against their efficacy as a weight loss treatment

2. Become familiar with the limitations that exercise has as a weight loss treatment

3. Identify proper sleep as a target for healthy weight loss

4. Become familiar with medical and surgical treatments for obesity

# OBESITY AS A CHRONIC DISEASE




AGRP: agouti-related peptide; α-MSH: α-melanocyte-stimulating hormone; GHSR: growth hormone secretagogue receptor; INSR: insulin receptor; LepR: leptin receptor; MC4R: melanocortin-4 receptor; NPY: neuropeptide Y; POMC: proopiomelanocortin; PYY: peptide YY; Y1R: neuropeptide Y1 receptor; Y2R: neuropeptide Y2 receptor. Apovian CM, Aronne LJ, Bessesen D et al. *J Clin Endocrinol Metab*. 2015;100:342-362.

Obesity Treatment Foundation

# TARGET WEIGHT LOSS

## 5-10% Total Body Weight Loss

# OBJECTIVES

1. **Become familiar with several popular diet trends including evidence for or against their efficacy as a weight loss treatment**

2. Become familiar with the limitations that exercise has as a weight loss treatment

3. Identify several behavioral trends for healthy weight loss

4. Become familiar with medical and surgical treatments for obesity

# POPULAR DIETS

# POPULAR EATING PATTERNS

# CALORIES ARE MOST IMPORTANT FOR TOTAL BODY WEIGHT LOSS

# KETO

- Carbohydrate intake < 50 grams per day
- Moderate Protein
- High Fat
- No grains, potatoes, or sugar
- Any fat is allowed
- Leads to low insulin levels which leads to better utilization of fat for energy
- Very different from taking exogenous ketones (consuming ketones)

Randomized Controlled Trial > JAMA. 2007 Mar 7;297(9):969-77. doi: 10.1001/jama.297.9.969.

# Comparison of the Atkins, Zone, Ornish, and LEARN diets for change in weight and related risk factors among overweight premenopausal women: the A TO Z Weight Loss Study: a randomized trial

Christopher D Gardner [1], Alexandre Kiazand, Sofiya Alhassan, Soowon Kim, Randall S Stafford, Raymond R Balise, Helena C Kraemer, Abby C King

Affiliations + expand

PMID: 17341711 DOI: 10.1001/jama.297.9.969

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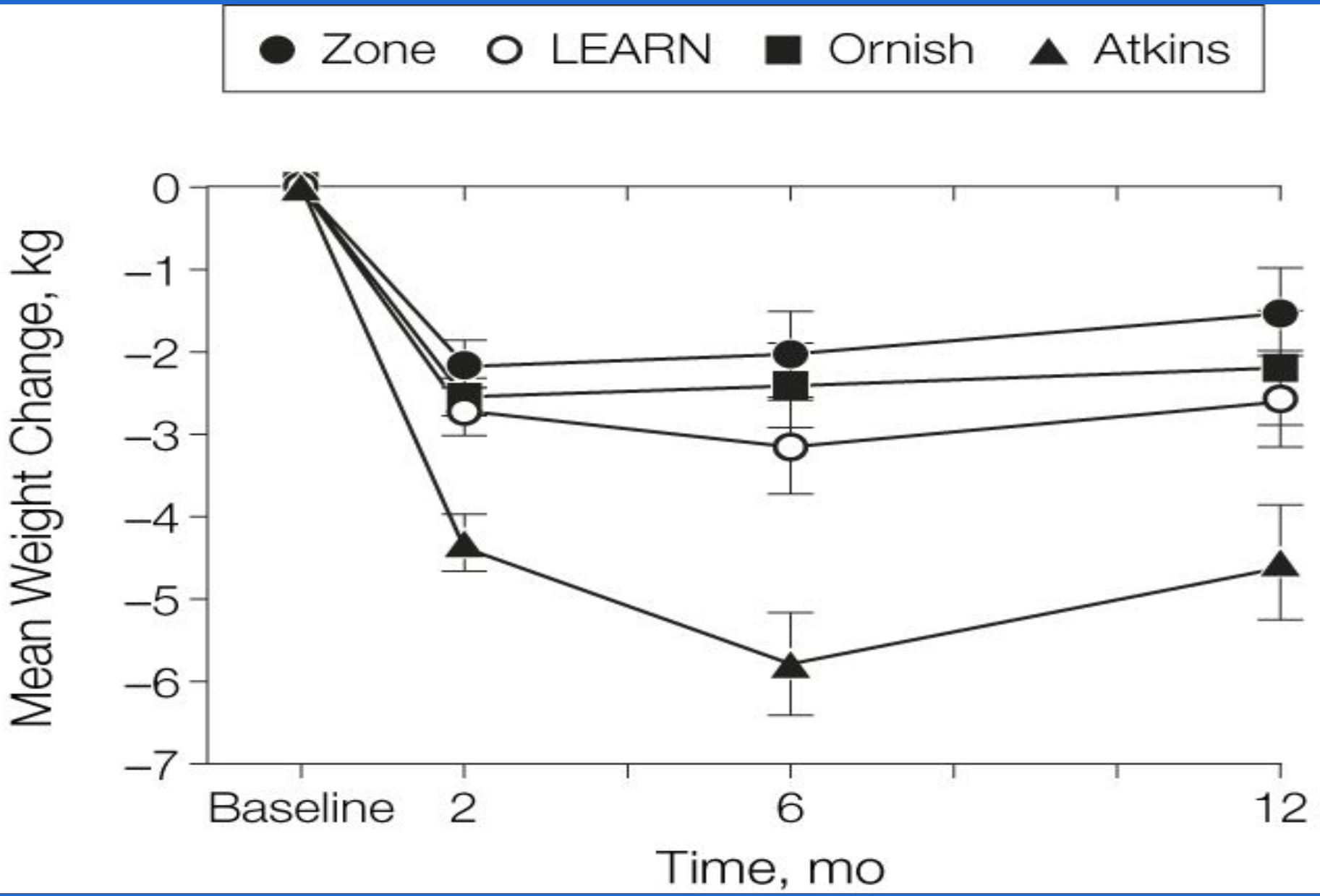
*Gardner, et al. JAMA 2007 Mar 7;297(9):969-77*






*Gardner, et al. JAMA 2007 Mar 7;297(9):969-77*

# Outpatient Randomized Controlled Trials for Obesity

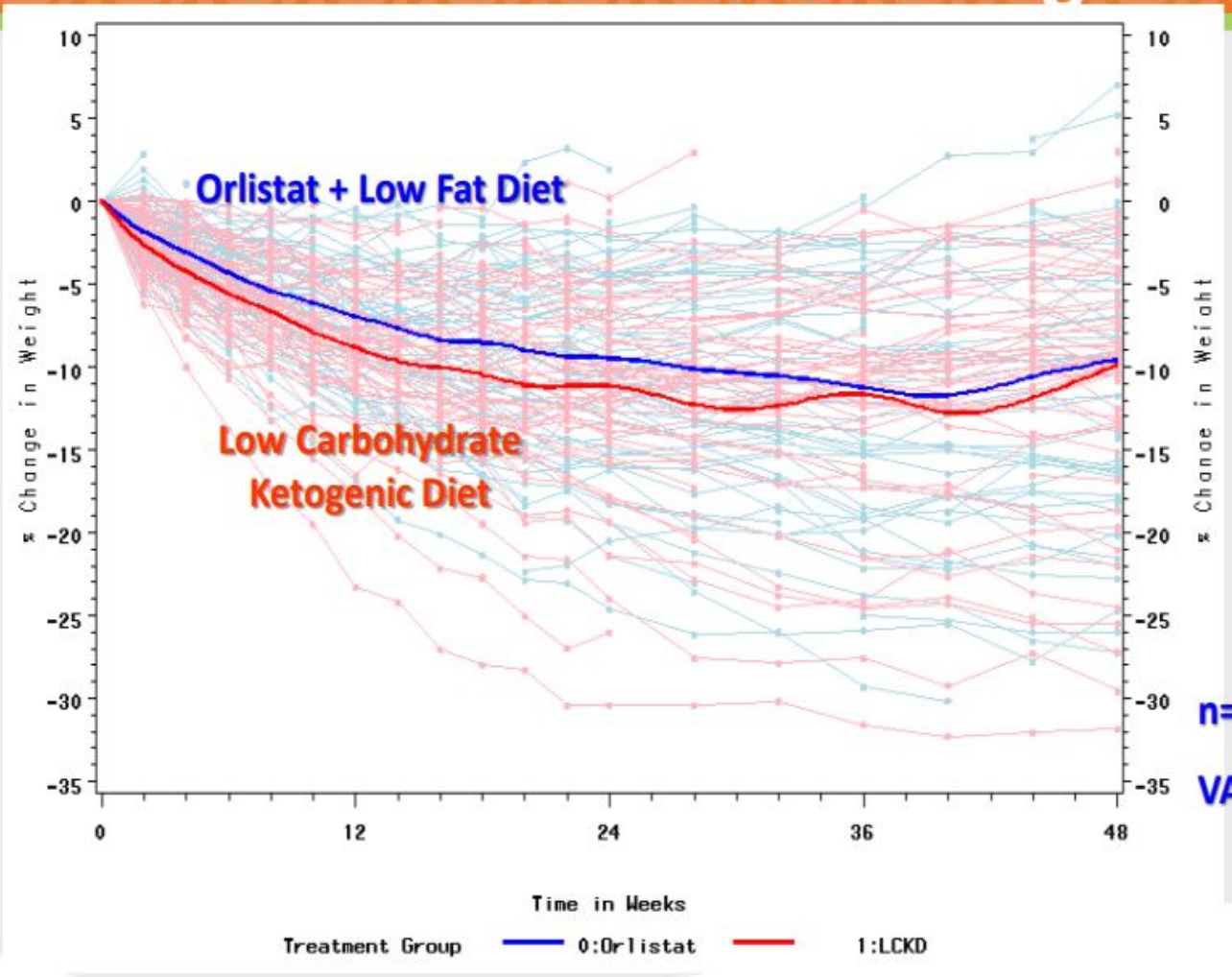
| Reference | N | Duration (mo) | Low-fat (kg) | Low-carb (kg) |
|---|---|---|---|---|
| Brehm 2003† | 42 | 6 | -3.9 | -8.5* |
| Yancy 2004‡ | 119 | 6 | -6.5 | -12.0* |
| Samaha 2003† | 132 | 6 | -1.9 | -5.8* |
| Foster 2003† | 63 | 6 | -5.3 | -9.7* |
| Foster 2003† | 63 | 12 | -4.5 | -7.3 |
| Stern 2004‡ | 132 | 12 | -3.1 | -5.1 |
| Dansinger 2005§ | 160 | 12 | -3.0 | -2.1 |
| Gardner 2007§ | 311 | 12 | -1.6 | -4.7* |

* p <0.05 for between-groups comparison.
For Gardner, comparison was the Zone diet.



Obesity Medicine Association

# LCKD vs. Diet and a Drug




n=146

VA outpatients

Yancy WS Jr, Arch Intern Med, 2010.

Obesity Medicine Association

# MEDITERRANEAN

- Robust data for cardiometabolic benefit
- Plant-based, olive oil for fat, dairy (fermented, typically cheese and yogurt)
- Low amount of red meat
- Wine in low-to-moderate amounts
- Sat <7% total Calories
- Improves lipid profile, insulin sensitivity, inflammation, endothelial function, thrombogenic risk, BP, metabolic syndrome, obesity

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JULY 17, 2008 VOL. 359 NO. 3

# Weight Loss with a Low-Carbohydrate, Mediterranean, or Low-Fat Diet

Iris Shai, R.D., Ph.D., Dan Schwarzfuchs, M.D., Yaakov Henkin, M.D., Danit R. Shahar, R.D., Ph.D., Shula Witkow, R.D., M.P.H., Ilana Greenberg, R.D., M.P.H., Rachel Golan, R.D., M.P.H., Drora Fraser, Ph.D., Arkady Bolotin, Ph.D., Hilel Vardi, M.Sc., Osnat Tangi-Rozental, B.A., Rachel Zuk-Ramot, R.N., Benjamin Sarusi, M.Sc., Dov Brickner, M.D., Ziva Schwartz, M.D., Einat Sheiner, M.D., Rachel Marko, M.Sc., Esther Katorza, M.Sc., Joachim Thiery, M.D., Georg Martin Fiedler, M.D., Matthias Blüher, M.D., Michael Stumvoll, M.D., and Meir J. Stampfer, M.D., Dr.P.H., for the Dietary Intervention Randomized Controlled Trial (DIRECT) Group

## ABSTRACT

**BACKGROUND**

Trials comparing the effectiveness and safety of weight-loss diets are frequently limited by short follow-up times and high dropout rates.

**METHODS**

In this 2-year trial, we randomly assigned 322 moderately obese subjects (mean age, 52 years; mean body-mass index [the weight in kilograms divided by the square of the height in meters], 31; male sex, 86%) to one of three diets: low-fat, restricted-calorie; Mediterranean, restricted-calorie; or low-carbohydrate, non–restricted-calorie.

**RESULTS**

The rate of adherence to a study diet was 95.4% at 1 year and 84.6% at 2 years. The Mediterranean-diet group consumed the largest amounts of dietary fiber and had the highest ratio of monounsaturated to saturated fat ($P<0.05$ for all comparisons among treatment groups). The low-carbohydrate group consumed the smallest amount of carbohydrates and the largest amounts of fat, protein, and cholesterol and had the highest percentage of participants with detectable urinary ketones ($P<0.05$ for all comparisons among treatment groups). The mean weight loss was 2.9 kg for the low-fat group, 4.4 kg for the Mediterranean-diet group, and 4.7 kg for the low-carbohydrate group ($P<0.001$ for the interaction between diet group and time); among the 272 participants who completed the intervention, the mean weight losses were 3.3 kg, 4.6 kg, and 5.5 kg, respectively. The relative reduction in the ratio of total cholesterol to high-density lipoprotein cholesterol was 20% in the low-carbohydrate group and 12% in the low-fat group ($P=0.01$). Among the 36 subjects with diabetes, changes in fasting plasma glucose and insulin levels were more favorable among those assigned to the Mediterranean diet than among those assigned to the low-fat diet ($P<0.001$ for the interaction among diabetes and Mediterranean diet and time with respect to fasting glucose levels).

**CONCLUSIONS**

Mediterranean and low-carbohydrate diets may be effective alternatives to low-fat diets. The more favorable effects on lipids (with the low-carbohydrate diet) and on glycemic control (with the Mediterranean diet) suggest that personal preferences

From the S. Daniel Abraham Center for Health and Nutrition, Ben-Gurion University of the Negev, Beer-Sheva (I.S., D.R.S., S.W., I.G., R.G., D.F., A.B., H.V., O.T.-R.); the Nuclear Research Center Negev, Dimona (D.S., R.Z.-R., B.S., D.B., Z.S., E.S., R.M., E.K.); and the Department of Cardiology, Soroka University Medical Center, Beer-Sheva (Y.H.) — all in Israel; the Institute of Laboratory Medicine, University Hospital Leipzig (J.T., G.M.F.); and the Department of Medicine, University of Leipzig (M.B., M.S.) — both in Leipzig, Germany; and Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, and the Departments of Epidemiology and Nutrition, Harvard School of Public Health — all in Boston (M.J.S.). Address reprint requests to Dr. Shai at the S. Daniel Abraham International Center for Health and Nutrition, Department of Epidemiology and Health Systems Evaluation, Ben-Gurion University of the Negev, P.O. Box 653, Beer-Sheva 84105, Israel, or at irish@bgu.ac.il.

This article (10.1056/NEJMoa0708681) was updated on December 30, 2009, at NEJM.org.

N Engl J Med 2008;359:229-41.



Shai I, DIRECT Group. Weight loss with a low-carbohydrate, Mediterranean, or low-fat diet. N Engl J Med. 2008 Jul 17;359(3):229-41

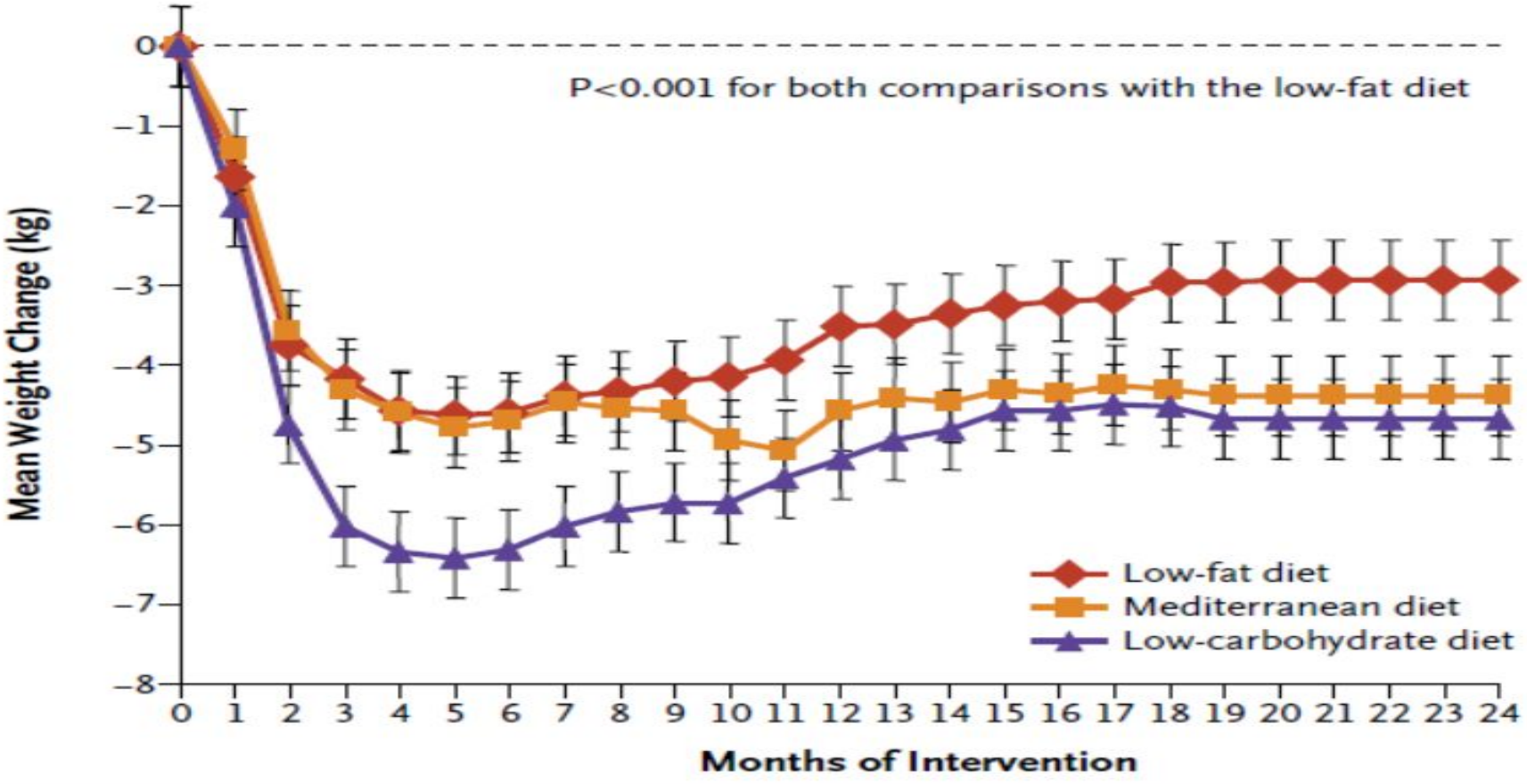



**Figure 2. Weight Changes during 2 Years According to Diet Group.**

Vertical bars indicate standard errors. To statistically evaluate the changes in weight measurements over time, generalized estimating equations were used, with the low-fat group as the reference group. The explanatory variables were age, sex, time point, and diet group.



Shai I, DIRECT Group. Weight loss with a low-carbohydrate, Mediterranean, or low-fat diet. N Engl J Med. 2008 Jul 17;359(3):229-41

# Mediterranean Diet, Lifestyle Factors, and 10-Year Mortality in Elderly European Men and Women

## The HALE Project

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Olga Moreiras-Varela, PhD
Alessandro Menotti, MD, PhD
Wija A. van Staveren, PhD

**Context** Dietary patterns and lifestyle factors are associated with mortality from all causes, coronary heart disease, cardiovascular diseases, and cancer, but few studies have investigated these factors in combination.

**Objective** To investigate the single and combined effect of Mediterranean diet, being physically active, moderate alcohol use, and nonsmoking on all-cause and cause-specific mortality in European elderly individuals.

**Design, Setting, and Participants** The Healthy Ageing: a Longitudinal study in Europe (HALE) population, comprising individuals enrolled in the Survey in Europe on Nutrition and the Elderly: a Concerned Action (SENECA) and the Finland, Italy, the Netherlands, Elderly (FINE) studies, includes 1507 apparently healthy men and 832 women, aged 70 to 90 years in 11 European countries. This cohort study was conducted between 1988 and 2000.

**Main Outcome Measures** Ten-year mortality from all causes, coronary heart disease, cardiovascular diseases, and cancer.

**Results** During follow-up, 935 participants died: 371 from cardiovascular diseases, 233 from cancer, and 145 from other causes; for 186, the cause of death was unknown. Adhering to a Mediterranean diet (hazard ratio [HR], 0.77; 95% confidence interval [CI], 0.68-0.88), moderate alcohol use (HR, 0.78; 95% CI, 0.67-0.91), physical activity (HR, 0.63; 95% CI, 0.55-0.72), and nonsmoking (HR, 0.65; 95% CI, 0.57-0.75) were associated with a lower risk of all-cause mortality (HRs controlled for age, sex, years of education, body mass index, study, and other factors). Similar results were observed for mortality from coronary heart disease, cardiovascular diseases, and cancer. The combination of 4 low risk factors lowered the all-cause mortality rate to 0.35 (95% CI, 0.28-0.44). In total, lack of adherence to this low-risk pattern was associated with a population attributable risk of 60% of all deaths, 64% of deaths from coronary heart disease, 61% from cardiovascular diseases, and 60% from cancer.

**Conclusion** Among individuals aged 70 to 90 years, adherence to a Mediterranean diet and healthful lifestyle is associated with a more than 50% lower rate of all-causes and cause-specific mortality.

*JAMA*. 2004;292:1433-1439 www.jama.com

THE NUMBER OF OLDER PEOPLE IS growing rapidly worldwide. More than 580 million people are older than 60 years, and the number is projected to rise to 1000 million by 2020.[1] With the increase in life expectancy, the leading causes of death have shifted dramatically from infectious diseases to noncommunicable diseases and from younger to older individuals. In industrialized countries, about 75% of deaths in persons older than the age of 65 are now from cardiovascular diseases and cancer.[2]

Regardless of predisposing factors, diet and lifestyle influence morbidity and mortality during the course of life.[2] Because of the cumulative effect of adverse factors throughout life, it is particularly important for older persons to adopt diet and lifestyle practices that minimize their risk of death from morbidity and maximize their prospects for healthful aging.[2]

Dietary patterns and other modifiable lifestyle factors are associated with mortality from all causes, coronary heart disease (CHD), cardiovascular diseases (CVD), and cancer.[3-6] As yet, few studies have investigated the combined effect of diet and other lifestyle factors.[7,8]

In the current study, we investigated the association of individual and combined dietary patterns and lifestyle factors (alcohol use, smoking sta-

**See also pp 1440 and 1490.**

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*Knoops KT. Mediterranean diet, lifestyle factors, and 10-year mortality in elderly European men and women: the HALE project. JAMA. 2004 Sep 22;292(12):1433-9*

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# The Effect of Mediterranean Diet on Metabolic Syndrome and its Components

## A Meta-Analysis of 50 Studies and 534,906 Individuals

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*Athens and Ioannina, Greece; and Naples, Italy*

**Objectives** The aim of this study was to meta-analyze epidemiological studies and clinical trials that have assessed the effect of a Mediterranean diet on metabolic syndrome (MS) as well as its components.

**Background** The Mediterranean diet has long been associated with low cardiovascular disease risk in adult population.

**Methods** The authors conducted a systematic review and random effects meta-analysis of epidemiological studies and

*Kastorini CM. The effect of Mediterranean diet on metabolic syndrome and its components: a meta-analysis of 50 studies and 534,906 individuals. J Am Coll Cardiol. 2011 Mar 15;57(11):1299-313*

# BLUE ZONES

# BLUE ZONES




Buettner D, Skemp S. Blue Zones: Lessons From the World's Longest Lived. *Am J Lifestyle Med*. 2016;10(5):318-321. Published 2016 Jul 7. doi:10.1177/1559827616637066

Move Naturally

Purpose

Downshift

80% Rule

Plant Slant

Wine

Belong

Commit to Loved Ones

Right Tribe

Ascension

Buettner D, Skemp S. Blue Zones: Lessons From the World's Longest Lived. *Am J Lifestyle Med*. 2016;10(5):318-321. Published 2016 Jul 7. doi:10.1177/1559827616637066

# INTERMITTENT FASTING

REVIEW ARTICLE

# Effects of Intermittent Fasting on Health, Aging, and Disease

Rafael de Cabo, Ph.D., and Mark P. Mattson, Ph.D.



December 26, 2019
N Engl J Med 2019; 381:2541-2551
DOI: 10.1056/NEJMra1905136
Chinese Translation 中文翻译



According to Weindruch and Sohal in a 1997 article in the Journal, reducing food availability over a lifetime (caloric restriction) has remarkable effects on aging and the life span in animals.[1] The authors proposed that the health benefits of caloric restriction result from a passive reduction in the production of damaging oxygen free radicals. At the time, it was not generally recognized that because rodents on caloric restriction typically consume their entire daily food allotment within a few hours after its provision, they have a daily fasting period of up to 20 hours, during which ketogenesis occurs. Since then, hundreds of studies in animals and scores of clinical studies of controlled intermittent fasting regimens have been conducted in which metabolic switching from liver-derived glucose to adipose cell–derived ketones occurs daily or several days each week. Although the magnitude of the effect of intermittent fasting on life-span extension is variable (influenced by sex, diet, and genetic factors), studies in mice and nonhuman primates show consistent effects of caloric restriction on the health span (see the studies listed in Section S3 in the Supplementary Appendix, available with the full text of this article at NEJM.org).

Related Articles

CORRESPONDENCE APR 30, 2020
Effects of Intermittent Fasting on Health, Aging, and Disease

CORRECTION JAN 16, 2020
Effects of Intermittent Fasting on Health, Aging, and Disease

Randomized Controlled Trial > Int J Obes (Lond). 2018 Feb;42(2):129-138.
doi: 10.1038/ijo.2017.206. Epub 2017 Aug 17.

# Intermittent energy restriction improves weight loss efficiency in obese men: the MATADOR study

N M Byrne [1,2], A Sainsbury [3], N A King [2], A P Hills [1,2], R E Wood [1,2]

Affiliations + expand

PMID: 28925405 PMCID: PMC5803575 DOI: 10.1038/ijo.2017.206

Free PMC article

## Abstract

**Background/objectives:** The MATADOR (Minimising Adaptive Thermogenesis And Deactivating Obesity Rebound) study examined whether intermittent energy restriction (ER) improved weight loss efficiency compared with continuous ER and, if so, whether intermittent ER attenuated compensatory responses associated with ER.

**Subjects/methods:** Fifty-one men with obesity were randomised to 16 weeks of either: (1) continuous (CON), or (2) intermittent (INT) ER completed as 8 × 2-week blocks of ER alternating with 7 × 2-week blocks of energy balance (30 weeks total). Forty-seven participants completed a 4-week baseline phase and commenced the intervention (CON: N=23, 39.4±6.8 years, 111.1±9.1 kg, 34.3±3.0 kg $m^{-2}$; INT: N=24, 39.8±9.5 years, 110.2±13.8 kg, 34.1±4.0 kg $m^{-2}$). During ER, energy intake was equivalent to 67% of weight maintenance requirements in both groups. Body weight, fat mass (FM), fat-free mass (FFM) and resting energy expenditure (REE) were measured throughout the study.

**Results:** For the N=19 CON and N=17 INT who completed the intervention per protocol, weight loss

JAMA Internal Medicine | Original Investigation

# Effect of Alternate-Day Fasting on Weight Loss, Weight Maintenance, and Cardioprotection Among Metabolically Healthy Obese Adults

## A Randomized Clinical Trial

John F. Trepanowski, PhD; Cynthia M. Kroeger, PhD; Adrienne Barnosky, MD; Monica C. Klempel, PhD; Surabhi Bhutani, PhD; Kristin K. Hoddy, PhD, RD; Kelsey Gabel, MS, RD; Sally Freels, PhD; Joseph Rigdon, PhD; Jennifer Rood, PhD; Eric Ravussin, PhD; Krista A. Varady, PhD

Supplemental content

**IMPORTANCE** Alternate-day fasting has become increasingly popular, yet, to date, no long-term randomized clinical trials have evaluated its efficacy.

**OBJECTIVE** To compare the effects of alternate-day fasting vs daily calorie restriction on weight loss, weight maintenance, and risk indicators for cardiovascular disease.

**DESIGN, SETTING, AND PARTICIPANTS** A single-center randomized clinical trial of obese adults (18 to 64 years of age; mean body mass index, 34) was conducted between October 1, 2011, and January 15, 2015, at an academic institution in Chicago, Illinois.

Ascension

*Trepanowski JF. Effect of Alternate-Day Fasting on Weight Loss, Weight Maintenance, and Cardioprotection Among Metabolically Healthy Obese Adults: A Randomized Clinical Trial. JAMA Intern Med. 2017;177(7):930–938*

# OBJECTIVES

1. Become familiar with several popular diet trends including evidence for or against their efficacy as a weight loss treatment

2. **Become familiar with the limitations that exercise has as a weight loss treatment**

3. Identify proper sleep as a target for healthy weight loss

4. Become familiar with medical and surgical treatments for obesity

# PHYSICAL ACTIVITY

# Components of Energy Expenditure

1. Resting Energy Expenditure 70%
2. Physical Activity 20%
3. Thermic Effect of Food 10%
4. Exercise Variable

# Walking

- 10,000 steps per day
- 60 minutes daily to prevent weight regain
- Calming, cardiometabolic benefits

# GOALS

- 150-300 minutes per week of moderate intensity aerobic exercise OR
- 75-150 minutes per week of vigorous intensity aerobic exercise AND
- Resistance training 2 days per week

# Preserving Healthy Muscle during Weight Loss[1–3]

**Edda Cava, Nai Chien Yeat, and Bettina Mittendorfer***

*Center for Human Nutrition, Washington University School of Medicine, St. Louis, MO*

**ABSTRACT**

Weight loss is the cornerstone of therapy for people with obesity because it can ameliorate or completely resolve the metabolic risk factors for diabetes, coronary artery disease, and obesity-associated cancers. The potential health benefits of diet-induced weight loss are thought to be compromised by the weight-loss–associated loss of lean body mass, which could increase the risk of sarcopenia (low muscle mass and impaired muscle function). The objective of this review is to provide an overview of what is known about weight-loss–induced muscle loss and its implications for overall physical function (e.g., ability to lift items, walk, and climb stairs). The currently available data in the literature show the following: *1*) compared with persons with normal weight, those with obesity have more muscle mass but poor muscle quality; *2*) diet-induced weight loss reduces muscle mass without adversely affecting muscle strength; *3*) weight loss improves global physical function, most likely because of reduced fat mass; *4*) high protein intake helps preserve lean body and muscle mass during weight loss but does not improve muscle strength and could have adverse effects on metabolic function; *5*) both endurance- and resistance-type exercise help preserve muscle mass during weight loss, and resistance-type exercise also improves muscle strength. We therefore conclude that weight-loss therapy, including a hypocaloric diet with adequate (but not excessive) protein intake and increased physical activity (particularly resistance-type exercise), should be promoted to maintain muscle mass and improve muscle strength and physical function in persons with obesity. *Adv Nutr* 2017;8:511–9.

**Keywords:** sarcopenia, dynapenia, weight loss, lifestyle therapy, muscle quality

## Introduction

Obesity is associated with cardiometabolic diseases (e.g., diabetes and coronary artery disease) (1–3) and certain types of cancer (e.g., colon) (4–6), and diet-induced weight loss can ameliorate or completely resolve the metabolic risk factors (e.g., insulin resistance, dyslipidemia, increased blood pressure) for these conditions (1–3, 5–8). The potential health benefits of diet-induced weight loss could be compromised by the weight-loss–associated loss of lean body (including muscle) mass (9, 10), which could increase the risk of sarcopenia (defined as low muscle mass and impaired muscle function) (10–12), especially in vulnerable populations, such as postmenopausal women and older adults (10, 13–18). In the general population, muscle mass is a poor predictor of muscle strength (19–21), because of interindividual differences in muscle composition (e.g., deposition of noncontractile material, such as lipids and connective tissue) and neuromuscular adaptations to regular use or disuse that affect the ability of muscle to generate force (19–21). Moreover, both weight loss and weight gain are accompanied by corresponding changes in both body fat and fat-free (including muscle) mass (22–25). Accordingly, persons with obesity have more total fat-free and muscle mass than those with normal weight (26–28). This review will focus first on what is known about the effects of obesity on muscle quality and function and subsequently discuss the effects of weight loss on muscle mass, quality, and function and potential therapeutic strategies to improve not only muscle mass but also muscle function in persons with obesity. Articles to address these key questions were selected from a thorough literature search in PubMed intended to be inclusive of all relevant work in the area. Note that, for simplicity, we refer to both fat-free and lean body mass as fat-free mass throughout the article.

## Current Status of Knowledge

### Effect of obesity on muscle quality and muscle function

Few studies have evaluated muscle mass, quality, and function in people with obesity, but they consistently show that

[1] This article is a review from the symposium "Architecture of Healthy Muscles: The Interplay between Exercise and Nutrition on Muscle Metabolism" held 5 April 2016 at the American Society for Nutrition Scientific Sessions and Annual Meeting at Experimental Biology 2016 in San Diego, CA.

[2] The authors received salary support from NIH grants DK 94483, DK 56341 (Washington University School of Medicine Nutrition and Obesity Research Center), and UL1 TR000448 (Washington University School of Medicine Clinical Translational Science Award); the Atkins Obesity Award; and the European Society for Parenteral and Enteral Nutrition while working on this manuscript.

[3] Author disclosures: E Cava, NC Yeat, and B Mittendorfer, no conflicts of interest.

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**Table 2** Exercise only and energy compensation†

| Reference | Study group | Duration | Exercise intervention | Weight change ± SD (kg) | % Energy compensation |
|---|---|---|---|---|---|
| Goran and Poehlman (84) | 11 older individuals (56–78 y.o.), BMI below 85$^{th}$ percentile | 8 weeks | Cycle 3× per week, 150–300 kcal/session | −0.04 ± 0.59 | 25.3 |
| Donnelly *et al.* (85) | 16 males, BMI: 25.0–34.925 females, BMI: 25.0–34.9 | 16 months | Aerobic exercise 5× per week, 400 kcal/session | −5.2 ± 15.780.6 ± 17.14 | 62.399.4 |
| Morio *et al.* (86) | 13 sedentary older individuals (62.8 ± 2.3 y.o.) | 14 weeks | Cycle 3× per week, ~180 kcal/session | −0.7 ± 20.15 | −152.4 |
| Rosenkilde *et al.* (87) | 18 males, BMI: 20–4018 males, BMI: 20–40 | 13 weeks | Run/cycle daily, 300 kcal/dRun/cycle daily, 600 kcal/d | −3.6 ± 4.55–2.7 ± 4.55 | −53.230.1 |
| Melzer *et al.* (88) | 46 males, BMI: 19.7–29.3 | 8 weeks | Aerobic exercise daily, 500 kcal/d | −1.36 ± 0.2 | 43.5 |
| Caudwell *et al.* (89) | 35 males, BMI >24.972 females, BMI >24.9 | 12 weeks | Aerobic exercise 5× per week, 500 kcal/session | −3.03 ± 3.3–2.3 ± 3.1 | 2.4–2.7 |
| Martins *et al.* (90) | 22 sedentary individuals, BMI 27–35 | 12 weeks | Aerobic exercise 5× per week, 500 kcal/session | −3.5 ± 16.8 | −7.7 |
| Donnelly *et al.* (91) | 37 individuals, BMI 25–4037 individuals, BMI 25–40 | 10 months | Walk/jog 5× per week, 400 kcal/dWalk/jog 5× per week, 600 kcal/d | −3.9 ± 4.9–5.2 ± 5.6 | 60.859.9 |
| Perusse *et al.* (92) | 51 sedentary males46 sedentary females | 20 weeks | Cycle 3× per week, 55–75% $VO_2$ max | 0.2 ± N/A–0.6 ± N/A | 7294.9 |
| Slentz *et al.* (93) | 28 individuals, BMI 25–3528 individuals, BMI 25–3527 individuals, BMI 25–35 | 8 months | 14 kcal $kg^{-1}$, 19.2 km/week, 40–55% $VO_2$ peak 14 kcal $kg^{-1}$, 19.2 km/week, 65–80% $VO_2$ peak 23 kcal $kg^{-1}$, 32 km/week, 65–80% $VO_2$ peak | −1.3 ± 2.2–1.1 ± 2.0–3.5 ± 2.8 | 73.544.2–25 |
| Donnelly *et al.* (94) | 11 sedentary females, BMI >2511 sedentary females, BMI >25 | 18 months | Walk 3× per week, ~178 kcal/sessionWalk 2× per day, 5× per week, ~77 kcal/session | −1.7 ± 5.9–0.8 ± 18.4 | 46.288 |
| Despres *et al.* (95) | 13 females, BMI 27–42 | 14 months | Aerobic exercise 4–5× per week, ~55% $VO_2$ max | −3.7 ± 15.2 | 72.4 |
| Earnest *et al.* (96) | 16 males, BMI 25–3621 males, BMI 25–36 | 12 weeks | Aerobic exercise 3–4× per week, 12 kcal $kg^{-1}$/week Interval aerobic exercise 3–4× per week, 12 kcal $kg^{-1}$/week | −1.32 ± N/A–2.29 ± N/A | 51.9–12.9 |
| Gredlagin *et al.* (97) | 6 untrained males6 untrained males | 12 weeks | Run 4× per week, 80% $VO_2$ max, 300 kcal/sessionRun 4× per week, 50% $VO_2$ max, 300 kcal/session | −0.3 ± 1.2–1.5 ± 1.2 | −36.8–52.8 |
| Hardman *et al.* (98) | 28 untrained females | 12 months | Walk 175 min/week | 0.4 ± 2.4 | 119.1 |
| Juneau *et al.* (99) | 28 sedentary males24 sedentary females | 6 months | Walk 5× per week, 4 kcal $kg^{-1}$/session | −1.5 ± 14.9–0.4 ± 11.3 | 6.965.9 |
| Kirk *et al.* (100) | 16 males, BMI 27–3125 females, BMI 27–32 | 16 months | Aerobic exercise, 3–5× per week, 400 kcal/session | −5.2 ± 15.80.6 ± 17.1 | 71.299.3 |
| Krustrup *et al.* (101) | 21 healthy untrained females18 healthy untrained females | 16 weeks | Soccer 2× per week, 50 min/sessionRun 2× | 0.3 ± 3.30.2 ± 2.5 | 28.545.1 |

(*Continues*)


# High Intensity Interval Training

Review > Obes Rev. 2017 Jun;18(6):635-646. doi: 10.1111/obr.12532. Epub 2017 Apr 11.

# The effects of high-intensity interval training vs. moderate-intensity continuous training on body composition in overweight and obese adults: a systematic review and meta-analysis

M Wewege [1], R van den Berg [1], R E Ward [1], A Keech [1]

Affiliations + expand

PMID: 28401638 DOI: 10.1111/obr.12532

## Abstract

**Objective:** The objective of this study is to compare the effects of high-intensity interval training (HIIT) and moderate-intensity continuous training (MICT) for improvements in body composition in overweight and obese adults.

**Methods:** Trials comparing HIIT and MICT in overweight or obese participants aged 18-45 years were included. Direct measures (e.g. whole-body fat mass) and indirect measures (e.g. waist circumference) were examined.

**Results:** From 1,334 articles initially screened, 13 were included. Studies averaged 10 weeks × 3 sessions per week training. Both HIIT and MICT elicited significant ($p < 0.05$) reductions in whole-body fat mass and waist circumference. There were no significant differences between HIIT and MICT for any body composition measure, but HIIT required ~40% less training time commitment. Running training displayed large effects on whole-body fat mass for both HIIT and MICT (standardized mean difference -0.82 and -0.85, respectively), but cycling training did not induce fat loss.



Wewege M, van den Berg R, Ward RE, Keech A. The effects of high-intensity interval training vs. moderate-intensity continuous training on body composition in overweight and obese adults: a systematic review and meta-analysis. Obes Rev. 2017 Jun;18(6):635-646. doi: 10.1111/obr.12532. Epub 2017 Apr 11. PMID: 28401638.

# OBJECTIVES

1. Become familiar with several popular diet trends including evidence for or against their efficacy as a weight loss treatment

2. Become familiar with the limitations that exercise has as a weight loss treatment

3. **Identify proper sleep as a target for healthy weight**

4. Become familiar with medical and surgical treatments for obesity

# SLEEP

- 7-9 hours of sleep during nighttime hours
- Sleep deprivation increases hunger (especially for energy dense foods), decreased physical activity, promotes lean mass wasting compared to fat mass loss, increases partitioning of body energy to fat - especially abdominal and visceral fat

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- Wearable devices to track sleep
- Closely related to stress (including pandemic-related stress)



Bays HE, et al Obesity Algorithm Slides, presented by the Obesity Medicine Association. www.obesityalgorithm.org. 2020. https:// obesitymedicine.org/obesity-algorithm-powerpoint/ (Accessed 11.08.2021)

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# PHARMACOTHERAPY

# Indications

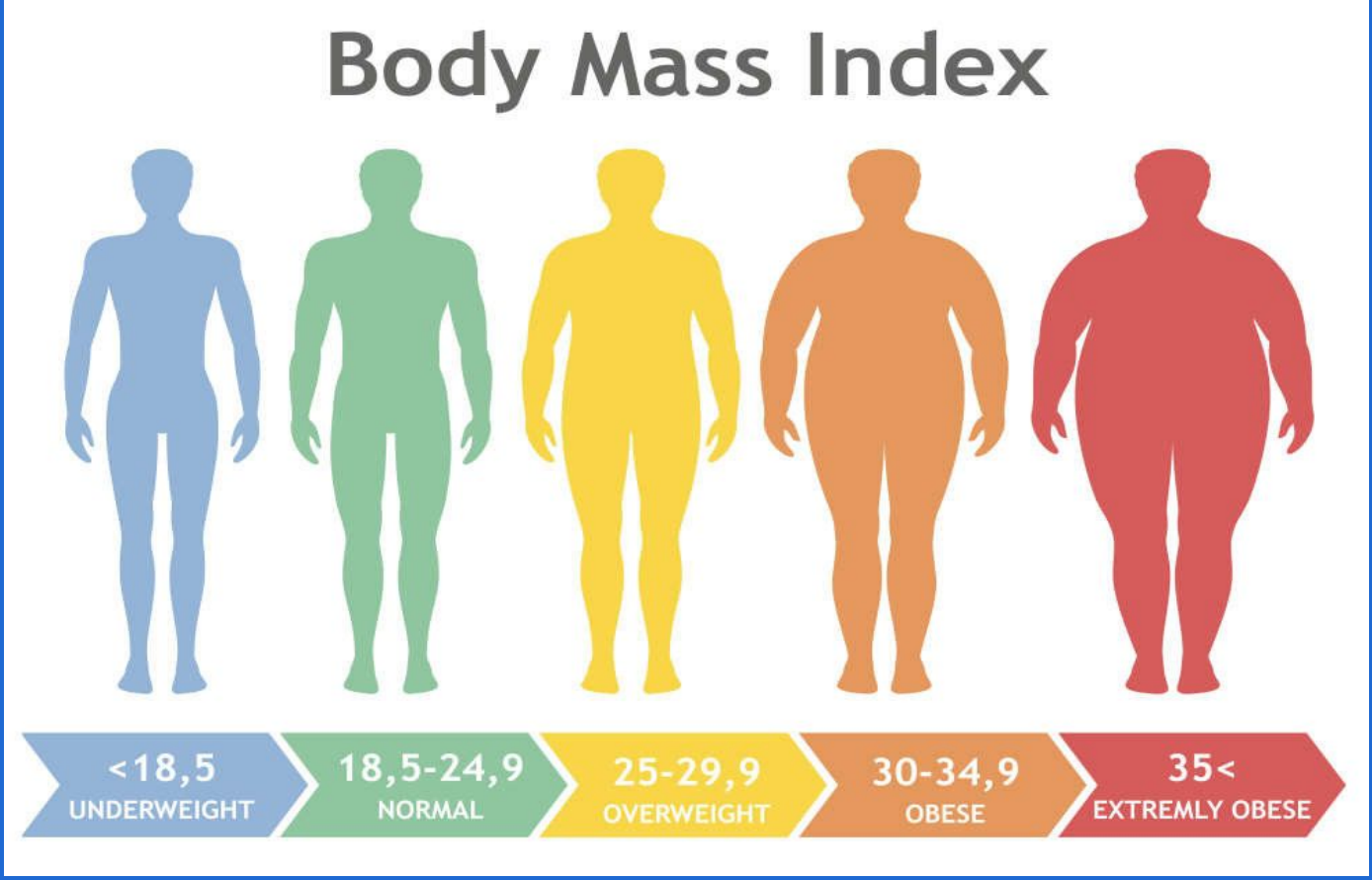
1. BMI > 30

2. BMI 27-29.9 with 1 or more adiposity based chronic disease

# Expected weight loss is 5-18%

| | |
|---|---|
| Phentermine | Stimulant, norepi |
| Qsymia (phentermine + topiramate ER) | Stimulant + Central GABA |
| Contrave (bupropion ER + naltrexone ER) | POMC, opioid |
| Saxenda (liraglutide) | GLP-1 agonist |
| Wegovy (semaglutide) | GLP-1 agonist |

# BARIATRIC SURGERY



# Indications

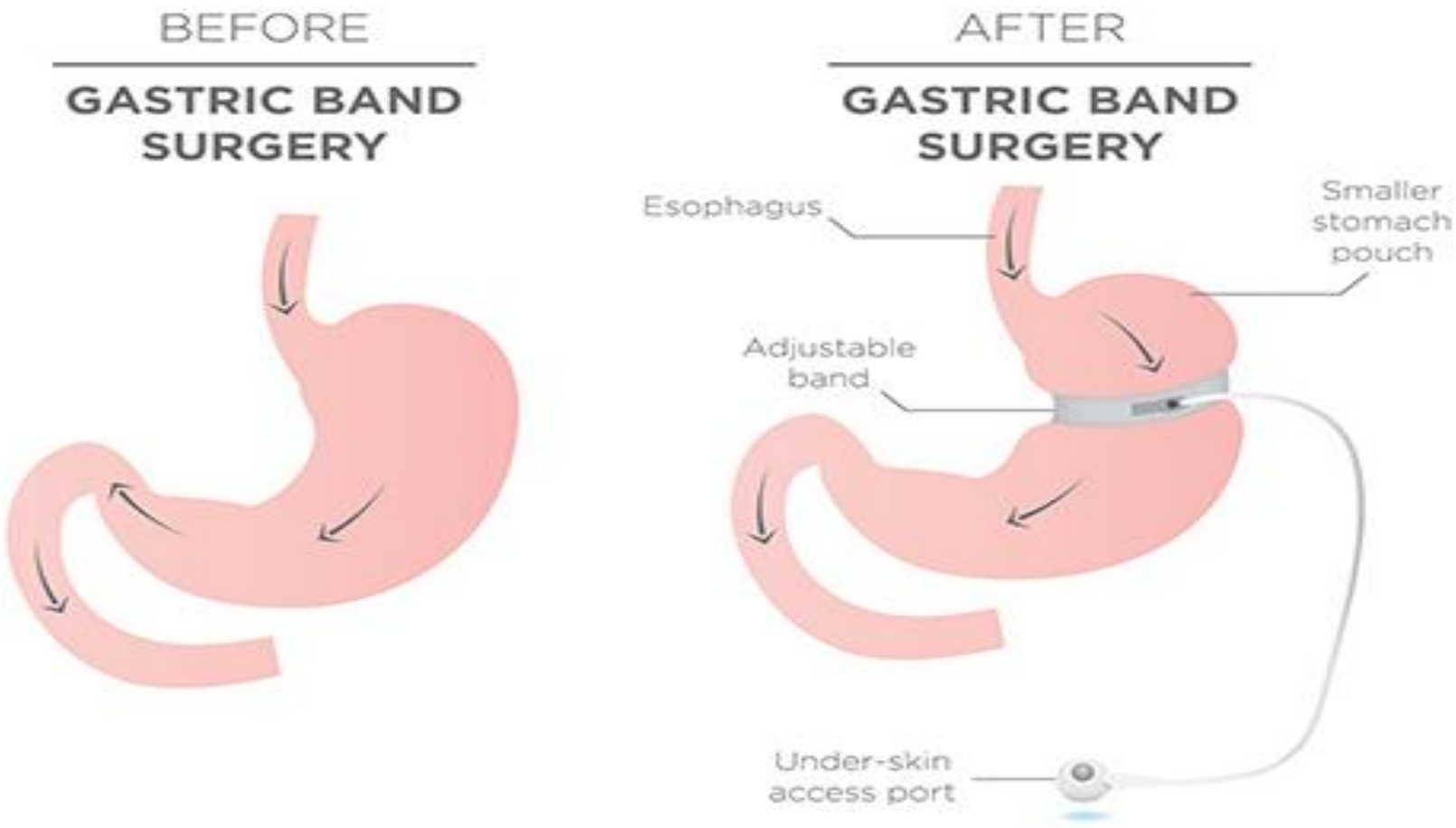
1. BMI > 40

2. BMI 35-39.9 with 1 or more adiposity based chronic disease

3. Meet insurance criteria

# Expected weight loss is 60-70% excess body weight

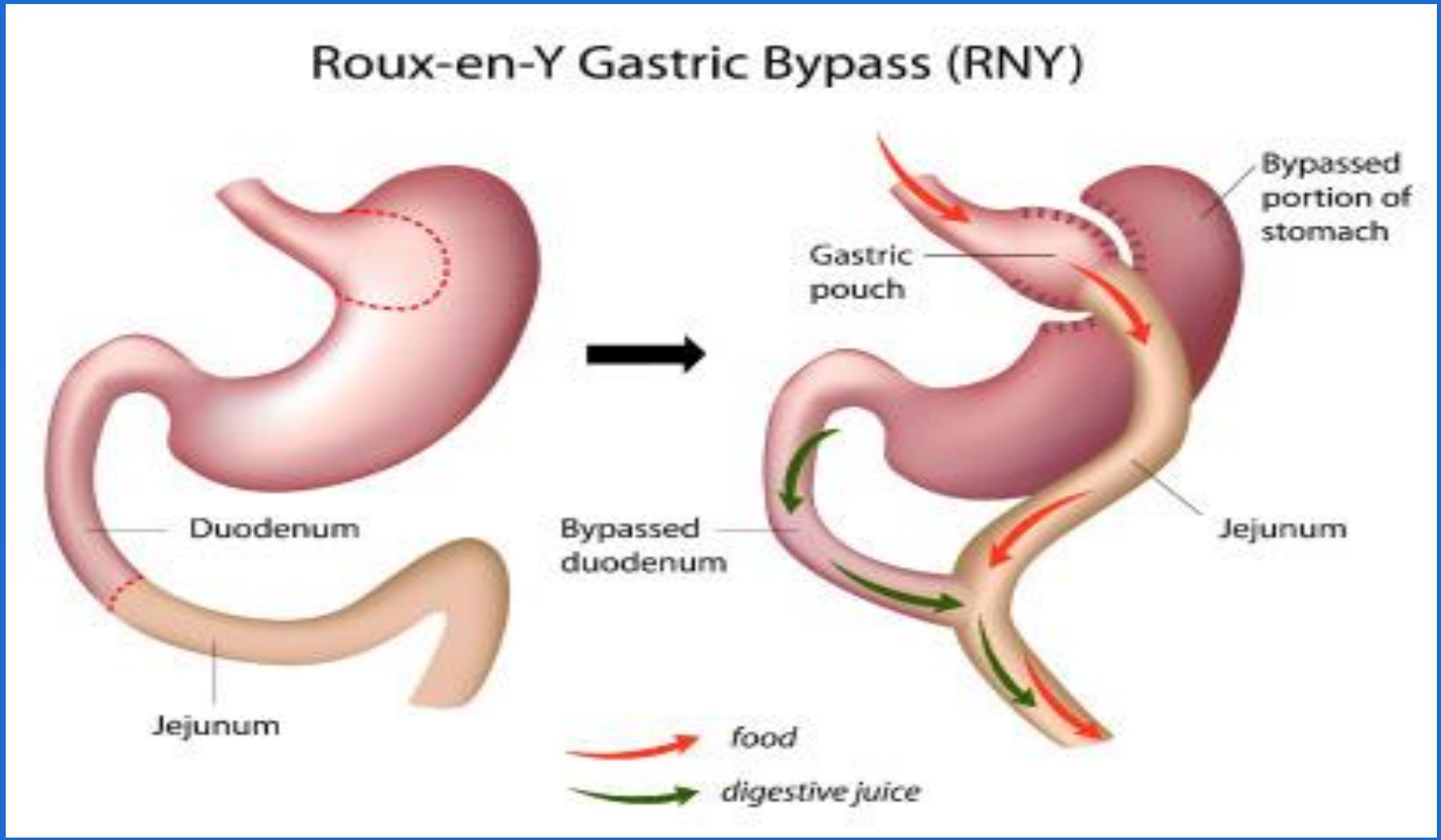
# Laparoscopic Gastric Banding






https://www.atlantabariatrics.com/weight-loss-surgery-options/lap-band/ ACCESSED 11.08/2021

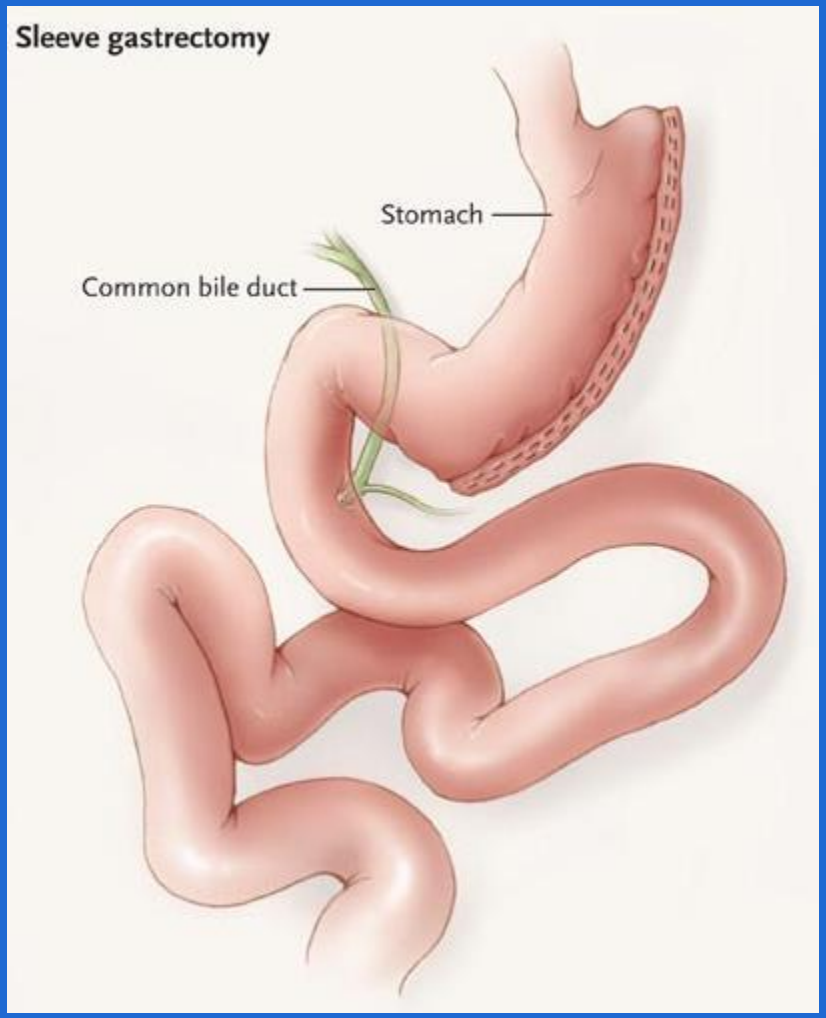
# Roux-en-Y Gastric Bypass




Ascension

https://hospital.uillinois.edu/primary-and-specialty-care/surgical-services/bariatric-surgery-program/our-services/roux-en-y-gastric-bypass-rygb ACCESSED 11.08.2021

# Vertical Sleeve Gastrectomy




Ascension

https://www.pennmedicine.org/for-patients-and-visitors/find-a-program-or-service/bariatric-surgery/procedures/sleeve-gastrectomy ACCESSED 11/08/2021

# OBJECTIVES

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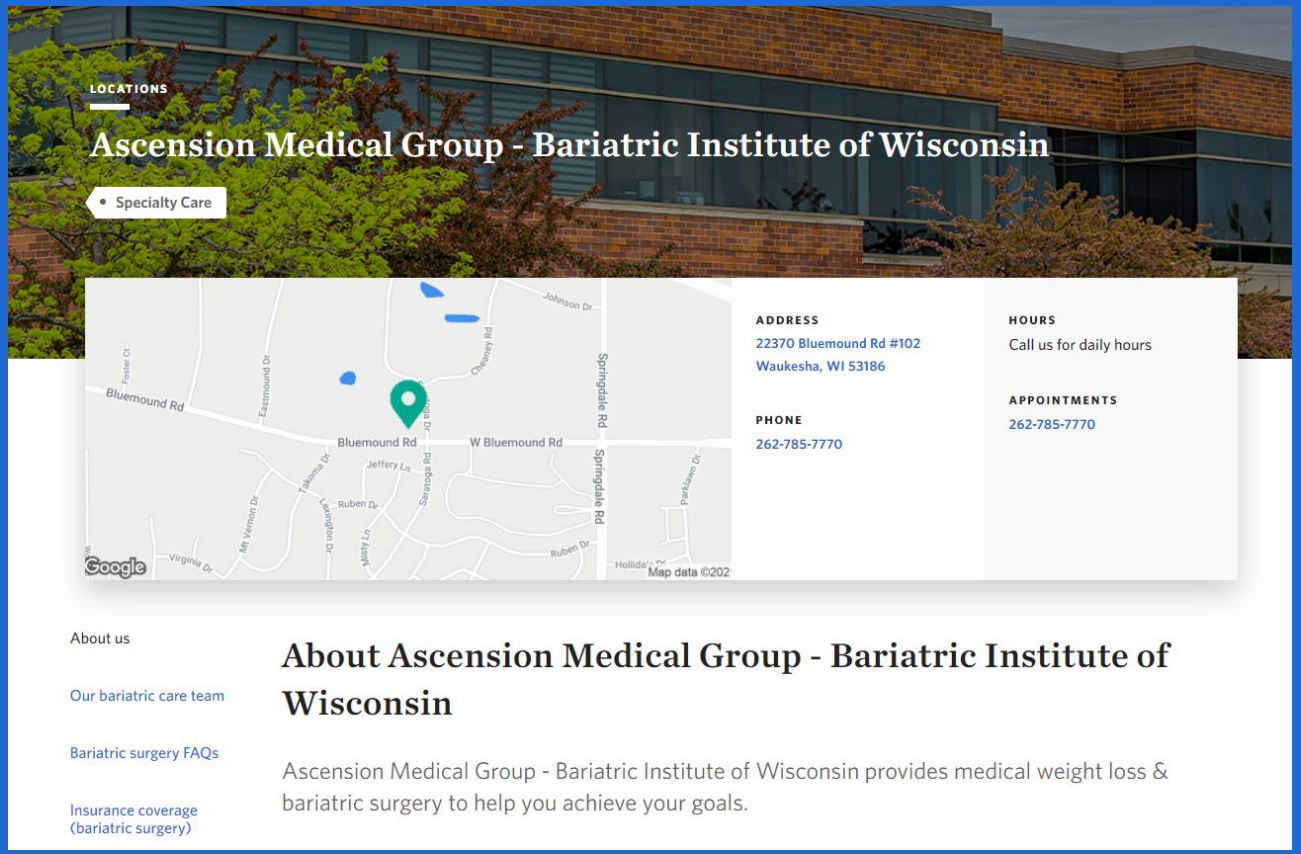
# CONCLUSION

# ASCENSION BARIATRIC PROGRAM




https://healthcare.ascension.org/locations/wisconsin/wiwhe/waukesha-ascension-medical-group-bariatric-institute-of-wisconsin?utm_campaign=gmb&utm_medium=organic&utm_source=local

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**414 - 962 - 2274**

# QUESTIONS

May the God of *health* be with you, bringing you to wholeness and holiness; healing you and hollowing you, filling you with the fullness of love, gentleness, and care. May this God be near you all your days and bring you to embrace the broken places of the world that are in need of healing. May the blessing of *health* be on you. Amen.

--Maxine Shonk, OP

## Closing Blessing and Announcements

**Next Webinar:**

TOPIC TBD, PRESENTER TBD, MD 1/20/2022 at 1:30 pm.