

Activity for Weight Loss

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Image: clipart.com

Overview

- Types of exercises
- Standard activity recommendations
- Exercise and weight loss
- Other health benefits of exercise
- Identifying and overcoming barriers to exercise

Images:
Homehelpershomecare.com
Verywellfit.com

Question for the audience!

What's more important for weight loss?

1. Diet
2. Exercise
3. Both
4. Neither are important

Image: gacpr.com

Type of exercises

- **Resistance (Strength):** progressively overloads muscles to promote muscle growth (strength and size)
 - Fewer repetitions, greater force
- **Aerobic (Cardio):** raises your heart rate and breathing rate
 - More repetitions, less force

Images:
Funkidslive.com

Type of exercises

- **Resistance (Strength):** progressively overloads muscles to promote muscle growth (strength and size)
 - Body weight
 - Weight machines, free weights
 - Resistance bands
 - Pilates reformer

Images:
Utswmed.org
Istockphoto.com
Go4life.nih.gov
Pivotal pilates.com

Type of exercises

- **Aerobic (Cardio):** raises your heart rate and breathing rate
 - Walking/jogging
 - Hiking
 - Dancing
 - Water aerobics, swimming

Images:
healthline.com
Lamag.com
Healthline.com
Istockphoto.com

How much activity do I need?

Moderate-intensity aerobic activity
Anything that gets your heart beating faster counts.

at least **150 minutes a week**

Muscle-strengthening activity
Do activities that make your muscles work harder than usual.

at least **2 days a week**

AND

Tight on time this week? Start with just 5 minutes. It all adds up!

Or get the same benefits in half the time. If you step it up to **vigorous-intensity** aerobic activity, aim for at least **75 minutes** a week.

Department of Health and Human Services recommendations (2018)

Exercise Intensity

	Moderate	Vigorous
"Talk test"	Breathing hard, but can still have a conversation	Can only say a few words
Examples	<ul style="list-style-type: none"> Brisk walking (2.5+ mph) Water aerobics Dancing Gardening Tennis (doubles) Biking <10 mph 	<ul style="list-style-type: none"> Hiking uphill or with a heavy backpack Running Swimming laps Aerobic dancing Heavy yardwork (e.g. continuous digging) Tennis (singles) Cycling 10+ mph Jumping rope

Image source: wikipedia

Weight Gain

Images:
<https://en.wikipedia.org/wiki/File:Johnny-automatic-scales-of-justice.svg>
https://commons.wikimedia.org/wiki/File:Junk_food_portail.svg
<http://www.tlickr.com/photos/89127659/N00/542629880>

How much exercise does it take...?

How long does a person* have to walk to burn 350 calories?

*170 lbs, walking 3mph

- 15 minutes
- 30 minutes
- 45 minutes
- 60 minutes
- 75 minutes

350 calories

Image source: ghfp.com.au Image Source: University of Nebraska, Lincoln

5. 75 minutes

Image source: ghfp.com.au

How long does a person* have to vacuum to burn 360 calories?
 *170 lbs

360 calories

1. 20 minutes
2. 40 minutes
3. 60 minutes
4. 80 minutes
5. 100 minutes





Image source: starbucks.com



4. 80 minutes

Image source: ghfp.com.au

Image Sources:
 University of Nebraska, Lincoln
 ghfp.com.au

Burn 1,025 calories?




6 hours and 37 minutes!!


What's more important for weight loss?



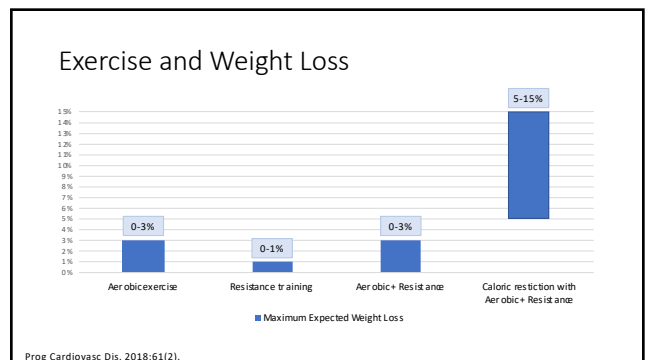
Image: gacpr.com

Aerobic Exercise

- Current exercise recommendations (150 minutes, moderate intensity)
 - Likely to result in *modest* weight loss (4.4-6.6 lbs)
 - Unlikely to achieve >5% weight loss
- Increase to 225-420 minutes/week → 11-16.5 lbs



Prog Cardiovasc Dis. 2018;61(2). Image: independent.co.uk



Exercise and Weight Loss

- Study of 399 overweight/obese post-menopausal women
 - Control: No lifestyle changes
 - Exercise only: Moderate-intensity, facility-based aerobic exercise program 5 days per week
 - Diet only: Low-fat, low calorie diet
 - Combination: Diet + exercise

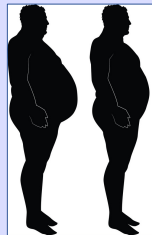


Obesity (Silver Spring). 2011;20(8)



Exercise and Body Composition

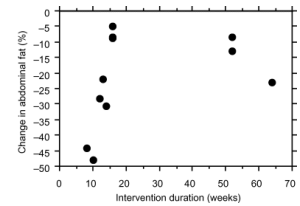
- While weight may not change much...
 - ↑ lean muscle
 - ↓ visceral body fat (fat around your organs)



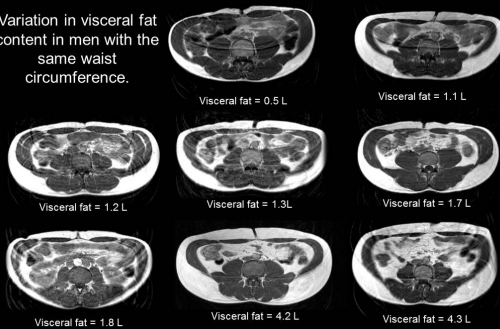
Obesity (Silver Spring). 2011;20(8)

Exercise and Body Composition

- Meta-analysis of 10 studies
 - Moderate to high intensity exercise for at least 8 weeks → ↓ in abdominal fat



Variation in visceral fat content in men with the same waist circumference.



Metabolism

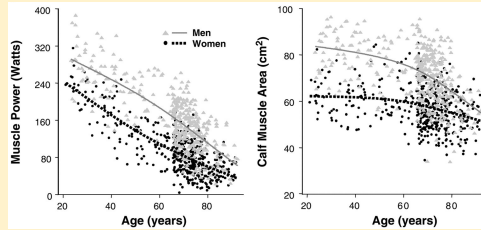


- Resting energy expenditure (REE)
 - Calories burned "at rest"
 - Often used interchangeably with basal metabolic rate (BMR)
 - Makes up >60% of total amount of calories burned by the body
 - Lean muscle accounts for the majority of the REE
- Weight loss can involve loss of lean muscle
- How can we prevent this?
 - Diets **higher in protein** can help preserve lean muscle
 - **Resistance exercises** can help preserve and increase lean muscle

Am J Clin Nutr 2015;101(6). Handbook of Clinical Nutrition, 4th ed (2006).
Am J Clin Nutr 2012;96(6). Nutr J 2017;16(1)

Sarcopenia

- Loss of muscle mass and strength associated with aging



J Appl Physiol (1985). 2003;95(5).

Sarcopenia

- Sarcopenic obesity= sarcopenia + increased body fat

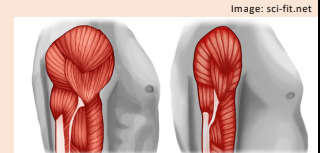


Image: sci-fit.net

Proc Nutr Soc. 2015;74(4).

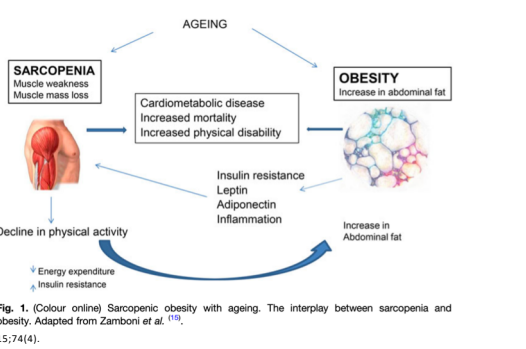


Fig. 1. (Colour online) Sarcopenic obesity with ageing. The interplay between sarcopenia and obesity. Adapted from Zamboni et al. (10).

Proc Nutr Soc. 2015;74(4).

Sarcopenia

- Can lead to
 - Decreased functional mobility → decreased quality of life
 - Increased risk of falls/fracture
 - Increased mortality
 - Insulin resistance (prediabetes, diabetes)
- How to prevent/treat sarcopenia
 - Adequate dietary protein
 - Resistance exercises

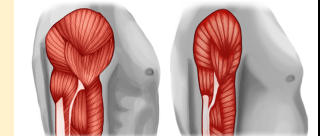


Image: sci-fit.net

Proc Nutr Soc. 2015;74(4).

Takeaways

- Lean muscle is important for metabolism (calories you are burning)
- Losing weight can cause you to lose lean muscle → slows your metabolism
- Dietary protein and exercise can help maintain or build lean muscle while losing weight

Image: guy-arad.com



Am J Clin Nutr 2015;101(6). Handbook of Clinical Nutrition, 4th ed (2006).
Am J Clin Nutr 2012;96(6). Nutr J 2017;16(1)

Weight Loss Maintenance

- National Weight Control Registry: individuals maintaining at least 30 lb weight loss for >1 year
 - On average, burned **2,621 kcal/week (374 kcal/day)** with physical activity
 - 60-75 min of moderate intensity exercise daily
 - 35-45 min of vigorous exercise daily
 - Majority were physically active ~1 hr/day
 - Activity of choice: walking (76%)

Image: acefitness.org



Obesity (Silver Spring) 2008;16. Am J Clin Nutr 2005;82.



Mood

- Affects levels of serotonin, norepinephrine and dopamine in the brain
- Decreases risk for depression
- Improves symptoms of depression/anxiety

Brain Sci. 2013;3(1). CNS Neurol Disord Drug Targets. 2014;13(6).
image: irishtimes.com

Sleep

- Regular exercise can help improve quantity and quality of sleep
- Studies suggests nighttime exercise does not affect sleep for most individuals

Sleep Health 2019. Image: runtastic.com

Metabolic health

- Improvement in blood sugar
 - ↓ blood sugar levels
 - ↑ insulin sensitivity
- Improve cholesterol
 - ↑ HDL (healthy) cholesterol
 - ↓ LDL (unhealthy) cholesterol and triglycerides

Images:
Powerofpositivity.com
Centralgaheart.com
Sports Med. 2014;44(2). Int J Sports Med. 2000;21(1).

Heart health

- Decreases risk for cardiovascular disease
- Decreases blood pressure
- Slows resting heart rate
- Encourages more blood flow to the heart

Adv Exp Med Biol. 2017. vectorstock.com

Osteoarthritis

- Decreases pain (knee, hips)
- Improves physical function (knee)
- Aquatic exercises may be helpful for those who are overweight or with more severe disease

Best Pract Res Clin Rheumatol. 2014;28(1).
arthritiscareoftexas.com

Brain

- Cognition/dementia
 - Aerobic, resistance or tai chi (moderate intensity, 45-60 minutes)
 - Improved cognitive function in adults >50 years
- Decreases risk of stroke and Parkinson's disease
- Increases the size of the hippocampus
 - Hippocampus= memory center of the brain

Images:
Myphysio.com/au
Integratedhealth.net.au
Ethicalstl.org

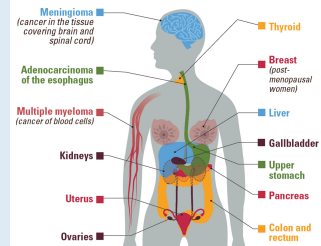


Br J Sports Med. 2018.
Brain Sci. 2013;3(1):39-53
Proc Natl Acad Sci U S A. 2011;108(7).

Cancer Prevention

- Helps prevent 8 types of cancer (bladder, breast, colon, endometrium, esophagus, kidney, stomach, and lung)

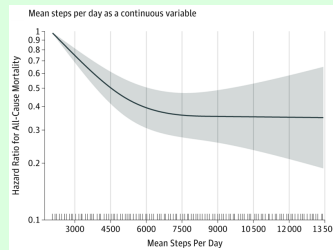
13 cancers are associated with overweight and obesity



Physical Activity Guidelines, 2nd ed. CDC.gov

Mortality

- Study of postmenopausal women and step counts
 - >18,000 women
 - 4,400 daily steps: 41% lower mortality rates than those taking 2,700 steps a day



Exercise and Weight Loss

- Start: Wt 273 lbs, 38.8% body fat
 - Started on the VLCD plan (net 165 g protein, ~1,050 calories per day)
 - Not physically active

Exercise and Weight Loss

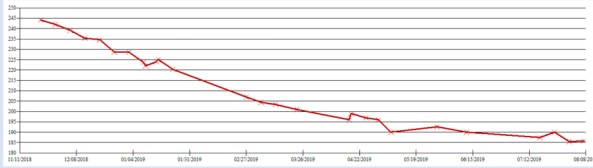
- Start: Wt 273 lbs, 38.8% body fat
 - Started on the VLCD plan (net 165 g protein, ~1,050 calories per day)
 - Not physically active
- 5 months: Wt 200 lbs (-73 lbs), 23.8% body fat
 - Transitioned to low calorie diet (1,200-1,300 cal/day)
 - Physical activity: HIIT 3x/week, wt lifting 1x/week

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 - Physical activity: HIIT 3x/week, wt lifting 1x/week
- 8 months: Wt 190 lbs, (-83lbs), 17.6% body fat
 - Transitioned to maintenance program (1,600-1,800 cal/day)
 - Physical activity: HIIT 3-4x/week, speed walking 3-4x/week (1 hour)

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	Start	8 months
Total cholesterol	191	151
LDL	101	75
HDL	58	63
Triglycerides	201	54

What are some barriers to exercise?



Image: killerinnovations.com

Barriers to Exercise

- Timing
 - Plan out your schedule ahead of time
 - Be prepared- have exercise clothes ready
 - Try HIIT-style workouts



inspirationalperspective.com

High Intensity Interval Training (HIIT)

- Alternating short bursts of high intensity with longer periods of rest
- Shorter time frame total < 30 minutes
- Typically no more than 3-4x/week, not on successive days
- ****Not for people new to exercising!****



acefitness.org

HIIT

- Activity
 - Exercise at maximum intensity for 15-30 seconds
- Rest
 - Up to 2 minutes in between
- Repeat up to 5 times total



rejuvage.com

HIIT

- Meta-analysis of 48 studies looking at HIIT vs. moderate intensity
 - Decreased body mass and body mass index (BMI)
 - Decreased waist circumference
 - Lowered body fat percentage
 - Decreased amount of abdominal visceral fat
- Meta-analysis of 13 studies
 - HIIT required **40% less training time commitment**

Obes Rev. 2019;20(1). Obes Rev. 2017;18(6).

Barriers to Exercise

- Tired
 - Are you getting enough sleep?
 - Exercise first thing in the morning rather than at the end of the day

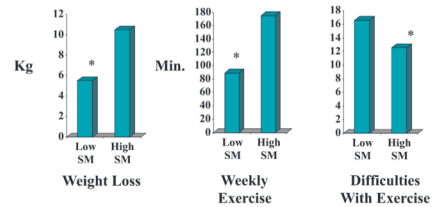


Barriers to Exercise

- Feeling unmotivated
 - Do activities you *like* to do!
 - Have an exercise buddy
 - Set goals, track your progress



Activity Tracking

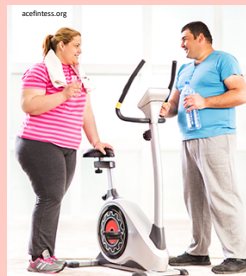


- High SM: consistent (missing ≤ 1 week of self-monitoring)
- Low SM: inconsistent (missing > 1 week of self-monitoring)

J Am Diet Assoc 2011;111(1). Ann Behav Med 2005;30.

Barriers to Exercise

- Feeling unmotivated
 - Do activities you *like* to do!
 - Have an exercise buddy
 - Set goals, track your progress
- Not sure how to get started



Starting to Exercise


- Go at your own pace, *ease* into it
 - Start with just 5 minutes once a day and gradually increase
- Listen to your body
 - Not every exercise fits every body type
 - Stop when in pain
- If you are new to exercise or have an injury, consider working with a certified personal trainer or physical therapist to learn what exercises you can do safely and prevent injury (once it is safe to do so)

**Speak to your doctor before beginning a new exercise regimen*

Barriers to Exercise

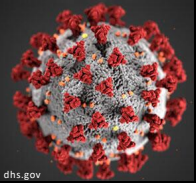
Images:
Healthline.com
4urrecovery.com
Absn.northeastern.edu

- Pain
 - Lower-impact exercises: aqua therapy, pool, chair exercises
 - Work with a physical therapist



Barriers to Exercise


- COVID-19
 - Gyms are closed
 - Social distancing- can't workout with a friend
 - Afraid to go outside
 - Feeling depressed/anxious



dhs.gov

Ready to get active???

stock.adobe.com



Adding in Activity

- Take the stairs instead of the elevator
- Walk (don't stand) on escalators
- Park farther away
- Carry a basket instead of pushing a cart at the grocery store
- Activity tracker: set a goal number of steps per day

At-home exercise ideas


- Walk around every hour
- Making chores your workout
 - Putting away dishes/laundry- one item at a time
 - Washing dishes- squat down to load the dishwasher (instead of bending over)
- Body weight exercises



Images:
redefining strength.com
Consumerreports.org

At-home exercise ideas

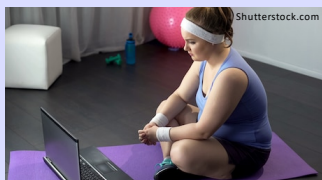
- Home exercise equipment
 - Cardio (aerobic)
 - Stationary bike, rowing machine, treadmill/elliptical, trampoline
 - Resistance (strength)
 - Resistance bands, weights (dumbbells, kettlebells), medicine balls
 - Balance/core
 - Exercise balls



womensrunning.com

At-home exercise ideas

- Phone apps
- Online programs/videos
 - Many gyms have started offering their classes at home!



Key Points

- Weight loss involves dietary, physical activity and behavior changes
- Exercise has numerous health benefits *independent of weight loss*
- Any physical activity can count as exercise
- Set a new goal for yourself based on what you've heard today!



Image: tinybuddha.com

Center for Human Nutrition

<https://www.uclahealth.org/clinicalnutrition/>

- UCLA Medical Weight Management Program (formerly RFO)
 - Medically supervised multidisciplinary weight loss program
 - (310) 825-8173
- Clinical Nutrition Clinic
 - Physician consultations (Drs. Garcia, Lemieux, Li, Mattai and Surampudi)
 - (310) 825-7912
- COMET Program
 - Bariatric surgery (Drs. Chen and Dutson)
 - Physician consultations (Drs. Garcia and Lemieux)
 - (310) 825-7163

UCLA Health

Thank you!



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