

THE IMPORTANCE OF EXERCISE FOR THE OVERWEIGHT AND OBESE PATIENT

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Benefits of Exercise

- ❑ Increases energy expenditure and may result in weight loss
- ❑ Helps maintain or build muscle mass
- ❑ Increases bone density
- ❑ Increases blood circulation
- ❑ Improves heart and lung function
- ❑ Increases feelings of self-efficacy
- ❑ Release of serotonin to reduce stress
- ❑ May reduce depression symptoms
- ❑ Appetite suppression
- ❑ Improved sleep quality
- ❑ Increases insulin sensitivity



Research

Body Composition and CVD

In an observational cohort study, 21 925 men, aged 30–83 y, who had a body-composition assessment and a maximal treadmill exercise test between 1971 and 1989. 8-year follow up.

- Unfit lean men have double the mortality risk of fit lean men
- Unfit lean men have a higher mortality risk and cardiovascular disease than men who are fit and obese
- Unfit men have a higher risk of mortality and cardiovascular disease than fit men in all categories of fat and fat-free mass
- Unfit men with low waist girths have a higher risk of mortality than fit men with high waist girths
- Being obese does not appear to increase mortality risk in fit men

Lee CD, Blair SN, Jackson AS. Cardiorespiratory fitness, body composition, and all-cause and cardiovascular disease mortality in men. *American Journal of Clinical Nutrition* 1999; 69: 373-380

Comparing Cardiorespiratory Fitness and BMI to predict All-Cause Mortality

- Using Cardiorespiratory Fitness as a measure for fit or unfit and BMI to measure normal weight, overweight, and obese categories.
- After completing the meta-analysis on normal weight and unfit individuals, an increased risk of death was found compared to normal weight fit individuals. Older (i.e. ≥ 50 year), normal weight and unfit adults were also more likely to die than their younger counterparts
- When assessing overweight unfit individuals, all the articles showed a significant mortality risk when compared to normal weight fit individuals. This elevated risk across all studies more than doubled the risk of in this population while overweight individuals who were fit did not experience significant risk.
- When assessing obese unfit individuals, all articles showed a significant relationship to all-cause mortality. The overall risk associated with this population was significantly, while those who were obese and fit did not experience a significantly different mortality risk compared to normal weight and fit individuals
- The results indicate that the risk of death was dependent upon CRF level and not BMI These findings are promising for all individuals, including those unable to lose weight or maintain weight loss, as all can experience significant health benefits by developing and maintaining a moderate level of CRF by participating regularly in physical activity (PA ;e.g. brisk walking, biking) at the level of PA currently recommended by the U.S. Physical Activity Guidelines.

Barry V.W., Baruth M., Beets M.W., Durstine J.L., Liu J., Blair S.N.(2014) *Fitness vs fatness on all-cause mortality: a meta-analysis. Prog Cardiovasc Dis 56:382–390*

Insulin Sensitivity

Twelve obese, middle-aged, sedentary males [age 50.4 ± 2.3 yr, mean body mass index (BMI) 33.6 ± 1.2 kg/m²] Five subjects were previously diagnosed as type 2 diabetic.

Exercise Program was 3x/week, 60 minute sessions, for 12 weeks. The intensity was set at 60–70% of their maximum muscle strength [one repetition maximum (1-RM)] for each exercise (*i.e.* for each muscle group), and 12–15 repetitions were performed.

	Before Training	After Training
Body weight (kg)	109.2 ± 12.6	109.5 ± 12.9
Systolic blood pressure (mm Hg)	140.0 ± 10.8	127.7 ± 19.4
Diastolic blood pressure (mm Hg)	92.5 ± 9.2	81.3 ± 9.8
Fasting glucose (mmol/liter)	7.1 ± 3.1	6.6 ± 1.8
Fasting insulin (mU/liter)	10.9 ± 10.6	4.8 ± 4.78

- Klimcakova E, Polak J, Moro C, et al. Dynamic strength training improves insulin sensitivity without altering plasma levels and gene expression of adipokines in subcutaneous adipose tissue in obese men. *J Clin Endocrinol Metab.* 2006;91:5107-12.

Inflammation

- Participants included 28 (12 control, 16 Resistance Training) overweight (body mass index 25 kg/m^2) women, aged 25–44 years, studied before and after 1 year of RT.
- Progressive training program. Three sets of 8–10 repetitions were performed using isotonic variable resistance machines and free weights
- This program resulted in a significant reduction in C-Reactive Protein and a significant increase in the anti-inflammatory molecule adiponectin.

- Kopp HP, Kopp CW, Festa A, et al. Impact of weight loss on inflammatory proteins and their association with the insulin resistance syndrome in morbidly obese patients. *Arterioscler Thromb Vasc Biol.* 2003;23:1042-7

Exercise Recommendations



Cardiorespiratory Exercise

Adults should get at least 150 minutes of moderate-intensity exercise per week.

30-60 minutes of moderate-intensity exercise (five days per week) or 20-60 minutes of vigorous-intensity exercise (three days per week).

One continuous session and multiple shorter sessions (of at least 10 minutes) are both acceptable to accumulate desired amount of daily exercise.

Gradual progression of exercise time, frequency and intensity is recommended for best adherence and least injury risk.

People unable to meet these minimums can still benefit from some activity.

Resistance Exercise

Adults should train each major muscle group two or three days each week using a variety of exercises and equipment.

Very light or light intensity is best for older persons or previously sedentary adults starting exercise.

Two to four sets of each exercise will help adults improve strength and power.

For each exercise, 8-12 repetitions improve strength and power, 10-15 repetitions improve strength in middle-age and older persons starting exercise, and 15-20 repetitions improve muscular endurance.

Adults should wait at least 48 hours between resistance training sessions.

Obstacles to Exercise

What are some common deterrents for the overweight or obese patient.



Pain

- ▣ Joints
- ▣ Back
- ▣ Diabetes associated

- ▣ Exercise and movement increase blood flow to aching joints or damaged tissue. Encouraging proper movement and stressing the pain relief, may inspire them to move past the discomfort.

Lack of Confidence

- In their own ability to do exercise
- In their bodies ability to actually feel better
- They don't know where to start
- They worry about people judging them

Physically Uncomfortable

Sweating

Tight Clothing

Heavy Breathing

Chaffing



Motivation Strategies

You don't have to be
great to start, but
you have to start
to be great.

-Zig Ziglar



Meet Them Where They're At

- Ask what they can do!
 - ▣ What are they physically capable of
 - ▣ What activities are available to them
 - ▣ If there is pain, what activity doesn't cause pain
 - ▣ How long are they able to walk, bike, swim etc.
- Encourage them!
 - ▣ Let them know that doing what they are able to do EVERY DAY is the important part.

Health Instead of Weight

- Overweight Stigma
- Frustration
- Immediate Gratification
 - ▣ Mood
 - ▣ Blood Glucose Levels
 - ▣ Ease of daily tasks
 - ▣ What is important to them?



Yoga Flow for ALL!

Thank You!



Questions?

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