

# Physical Activity Perseverance: Tips for Staying on Track

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# Conflicts of Interests / Disclosures

- I have no conflicts of interests or disclosures to report.



# Objectives



Describe the optimal amount of physical activity for a pre-diabetic population.



Gain an appreciation for the abilities and limitations physical activity provides for individuals with pre-diabetes.



Develop skillsets to help keep patients/clients reframe exercise and start with physical activity.



# How Much Physical Activity? And Why?



## Physical Activity Vs. Exercise

- Physical activity is movement carried out by the skeletal muscles that requires energy
- Exercise refers to planned, structured, repetitive movement intended to improve or maintain **physical fitness**

## Lifestyle intervention: Goals

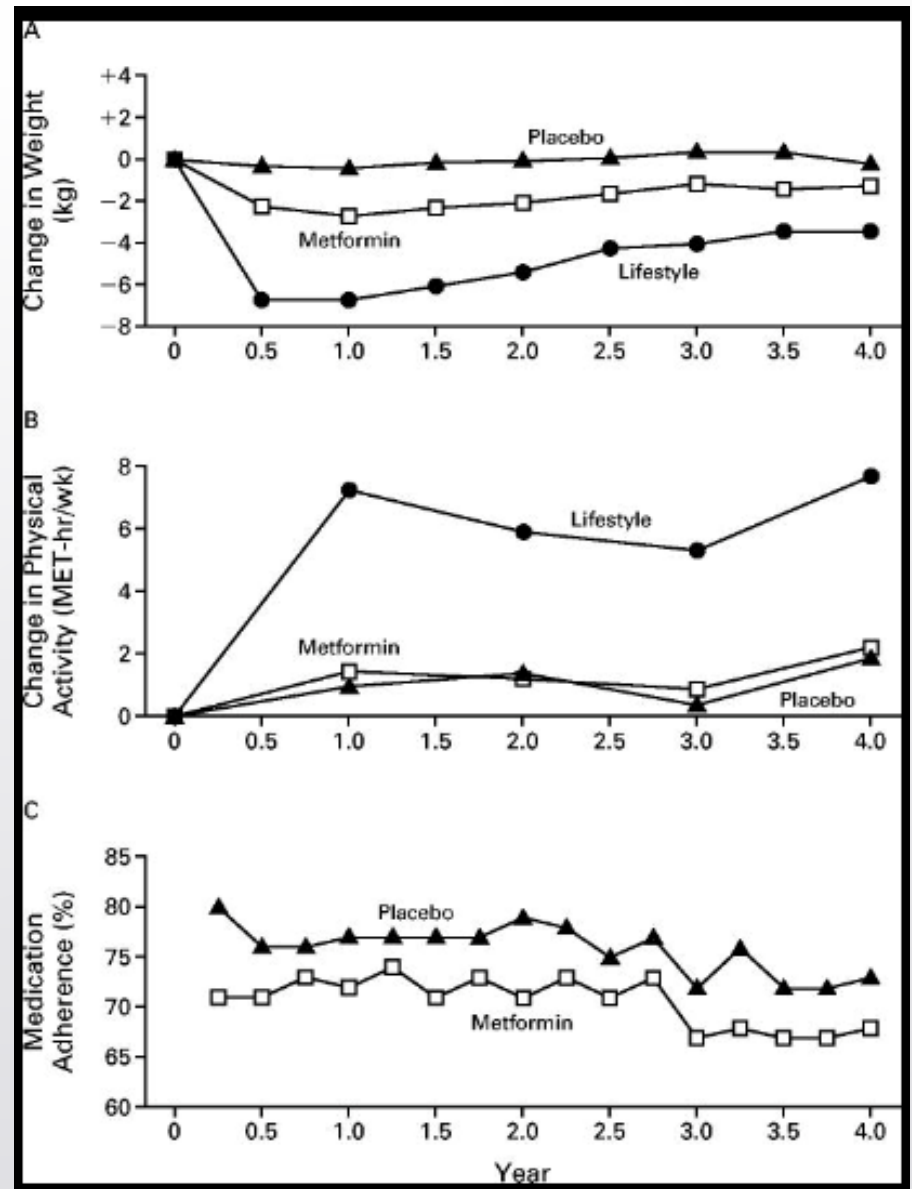
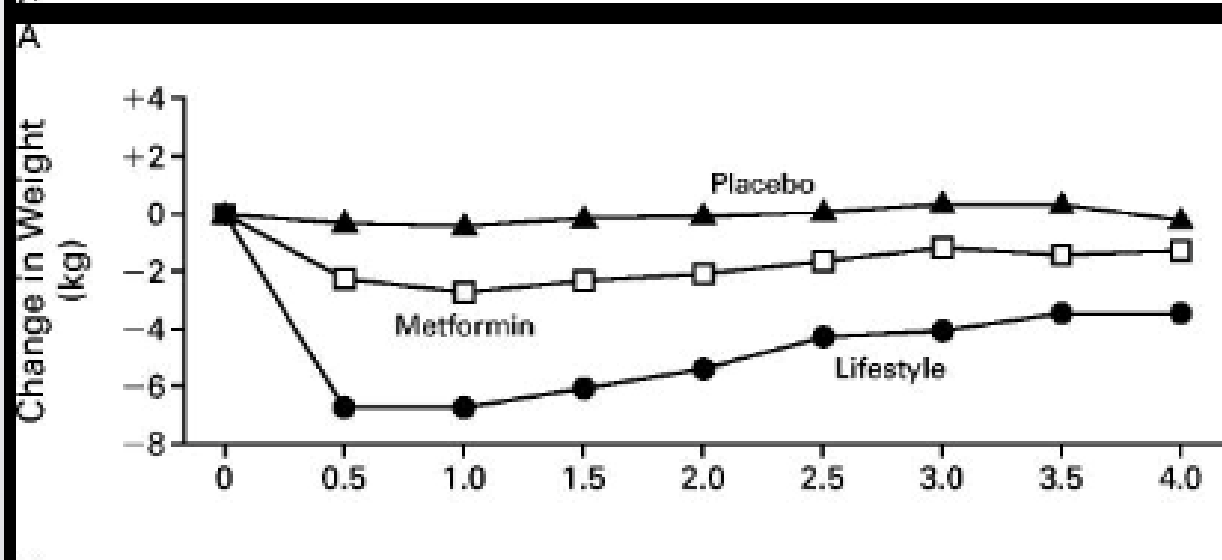
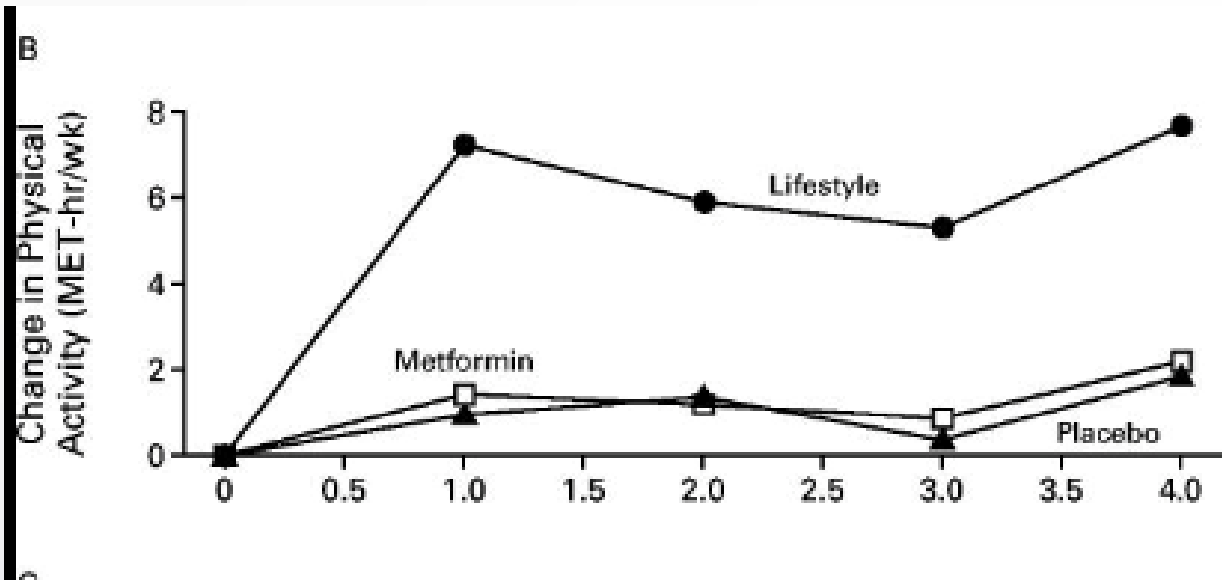
- Pre-diabetic population – lifestyle, metformin, or placebo
- $\geq 150$  minutes per week of physical activity
- $\geq 7\%$  loss of body weight and maintenance of weight loss
  - Dietary fat goal --  $<25\%$  of calories from fat
  - Calorie intake goal -- 1200-1800 kcal/day

*Diabetes Care* 2002;25(12):2165–2171.

*The New England Journal of Medicine.* 2002;346(6):393–403.







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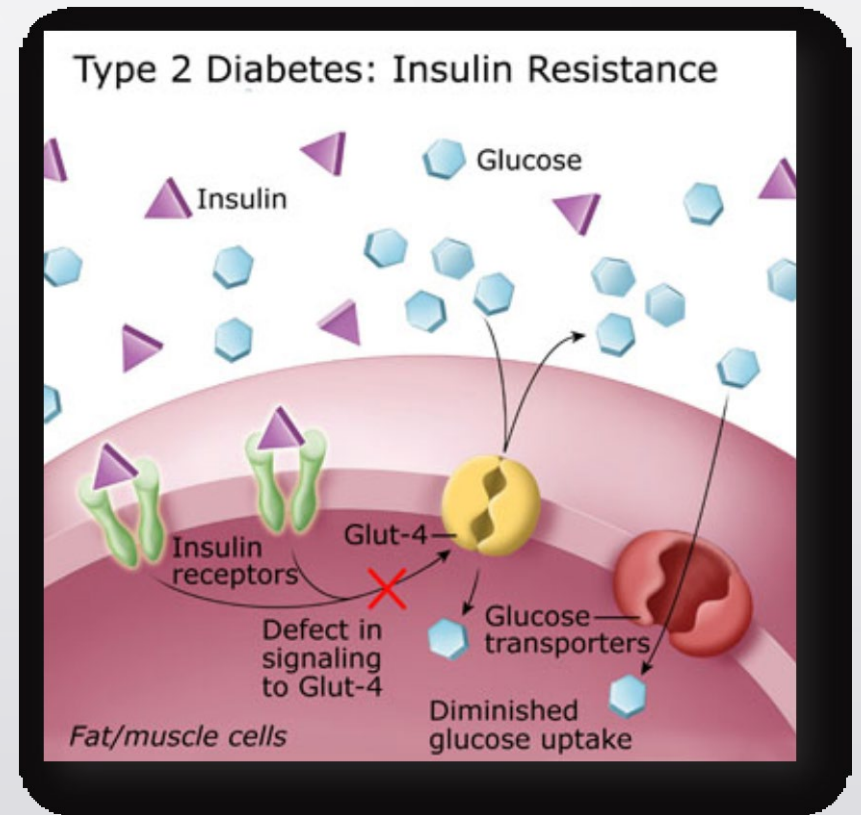
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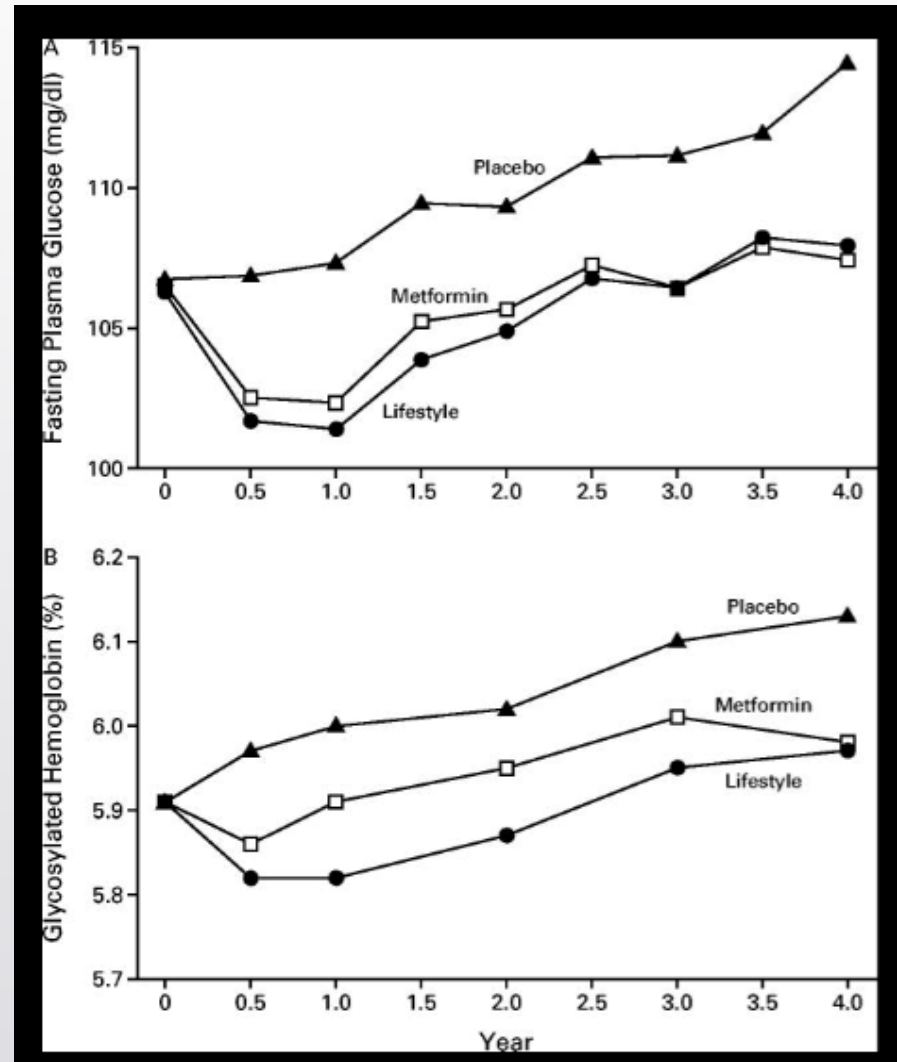
# Blood Sugar Regulation

How do we remove sugar from blood?

1. Insulin
2. Muscle contraction  
24 – 48-hour increase  
in Insulin sensitivity.







**Better blood sugar control**

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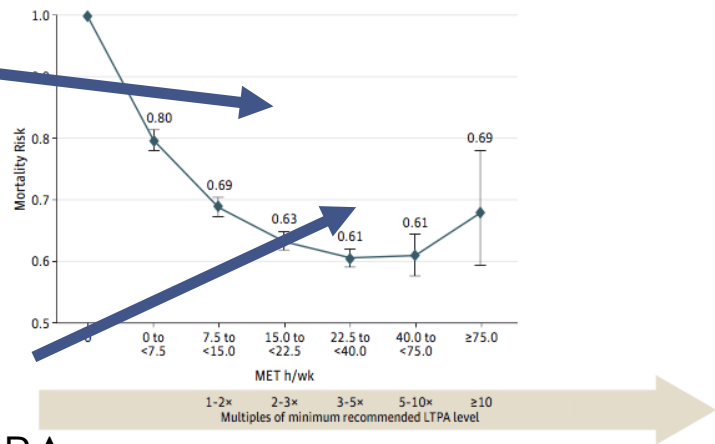


# 150 minutes of mod-to-vig PA

20% reduction in mortality doing something, more than 0 PA

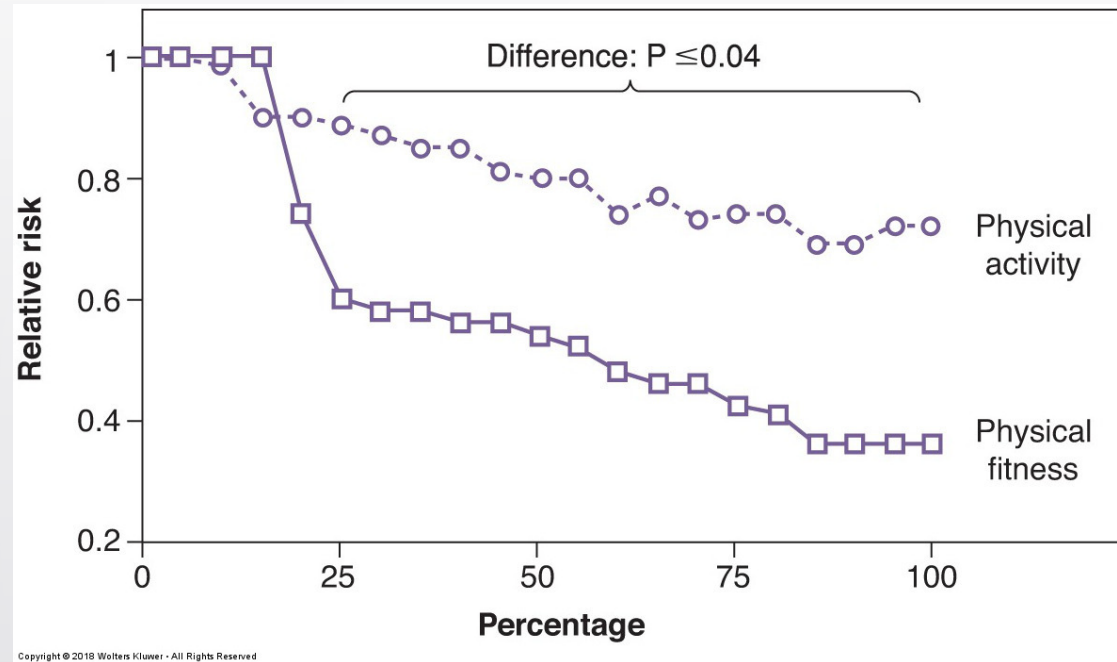
30% reduction in Mortality @ 150 or above, compared to 0 PA

Hazard Ratios (HRs) and 95% CIs for Leisure Time Moderate- to Vigorous-Intensity Physical Activity and Mortality



The dose-response curve and category-specific HR estimates of exercise levels were compared with the federally recommended minimum of 7.5 metabolic equivalent hours per week. Models were stratified by cohort and use age as the underlying time scale. The model was adjusted for sex, smoking (never, former, current, or missing), alcohol (none, <15 g/day, 15 to <30 g/day, or ≥30 g/day), educational level (dropout, high school, post-high school training, some college, college graduate, postcollege, or missing), marital status (married,

divorced, widowed, single, or missing), history of cancer, history of heart disease, and body mass index (calculated as weight in kilograms divided by height in meters squared) (<18.5, 18.5 to <25.0, 25.0 to <30.0, 30.0 to <35.0, or ≥35.0). The dotted line between categories illustrates an assumed dose-response curve rather than individual data points. Crude and adjusted risk estimates are presented in eTable 3 in the Supplement.

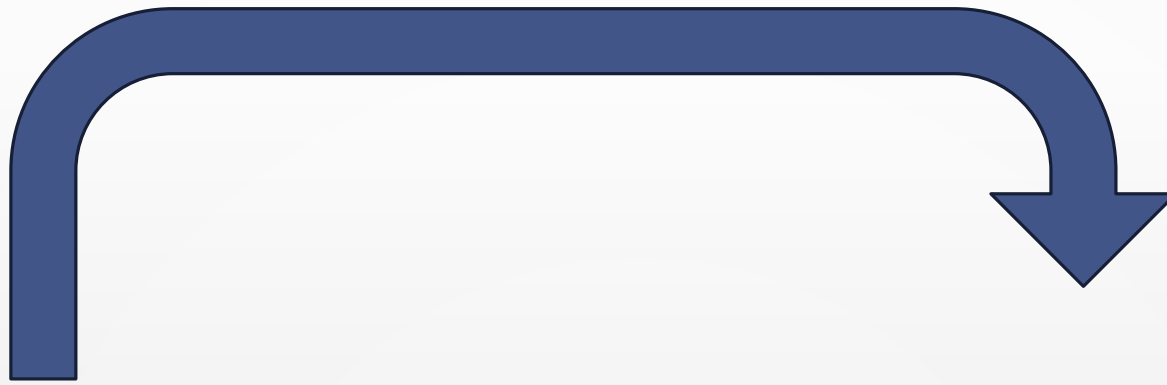


~30% reduction in CVD Risk

~60% reduction in CVD Risk

**FIGURE 1.1.** Estimated dose-response curve for the relative risk of atherosclerotic cardiovascular disease (CVD) by sample percentages of fitness and physical activity. Studies weighted by individual-years of experience. Used with permission from (104).

104. Williams PT. Physical fitness and activity as separate heart disease risk factors: a meta-analysis. *Med Sci Sports Exerc.* 2001;33(5):754-61.



- Avoid Inactivity – any amount of movement counts.
- Muscle contraction lowers blood sugar levels
- Promote Physical Activity, but goal should be toward exercise.





# Exercise/Physical Activity Tips



# Exercise Likely Has a PR Problem!

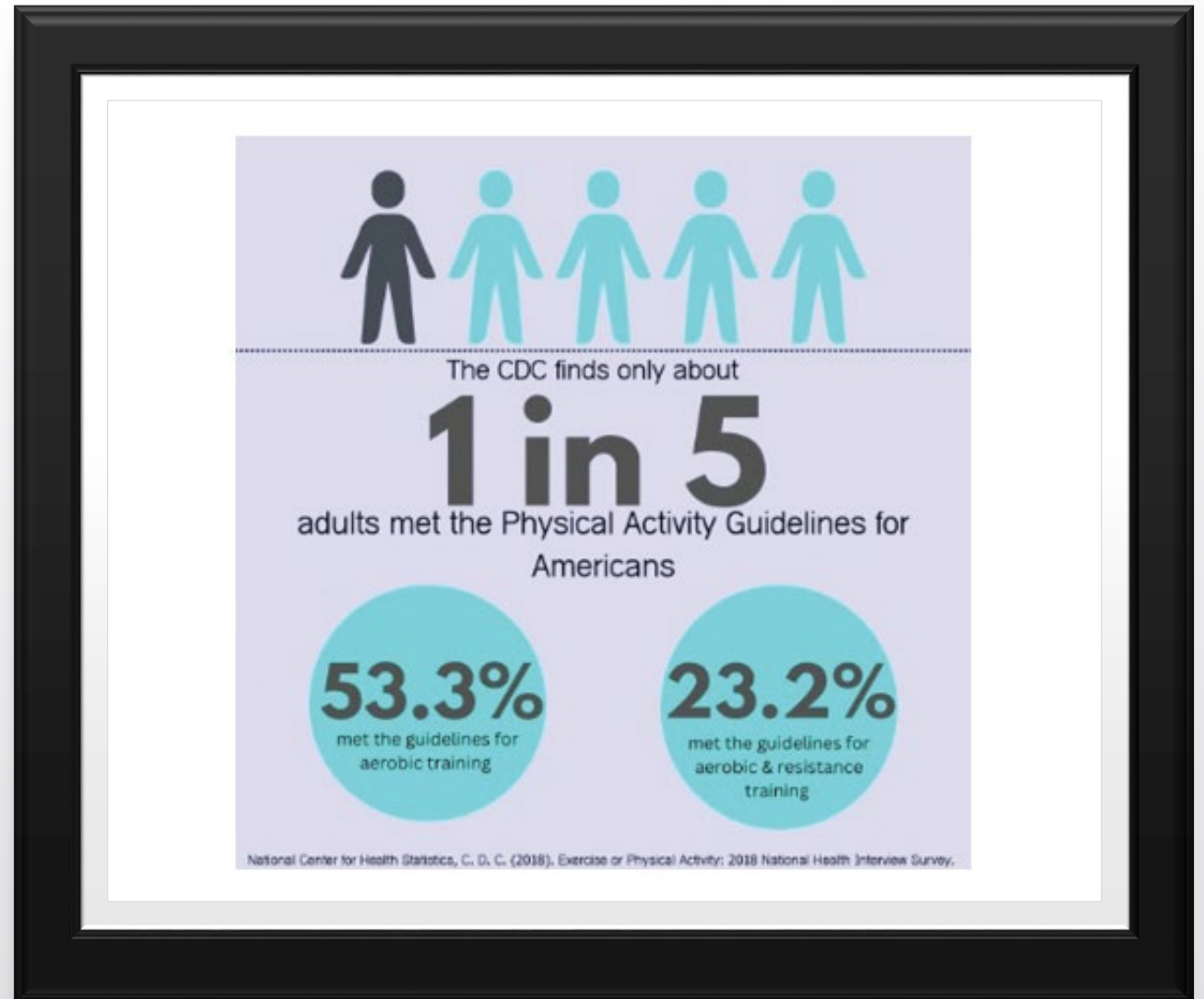
- We want life-long commitment to exercise / PA.
- How can we change the narrative?
- Normalize changing exercise activities!





# Life-Long Physical Activity

- Lack of time
- Don't like exercise / it's boring
- Affordability of a gym



# Overcoming These Barriers

- Lack of time
  - Gradually progress by identifying 10 min. chunks of time.
  - When appropriate use intensity to lower time commitment.
  - Multi-task – activity while viewing television
  - Involve the family or friends



# Don't Like Exercise It's Boring!

- Group classes
- Partner with a friend (accountability)
- Anything that moves the muscles and increases HR



Dancing 7.8 METS or ~ 8 times more energy than sitting.

Jogging is 7 METS

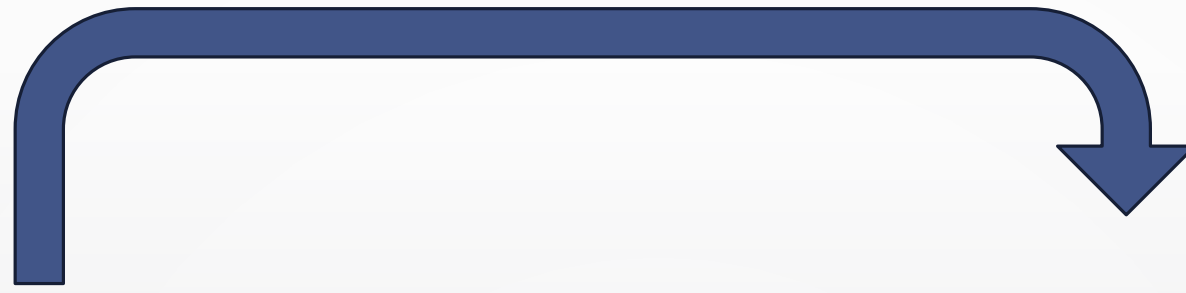


# Availability of Gym

- No gym required!
- Technology has made exercise / PA more defined.
- Body weight, resistance bands, etc..
- Outside and pair exercise / PA with mental health break.







- Barriers exist and they are real!
- Let clients know that you see barriers and you see them as people.
- As a trainer, navigate the issue.





# Getting Started – Tips to Remember



## Tips for Getting Started and Staying Active

- Try something new – HR and muscle contraction all that is required.
- Variety of Physical Activity / Exercise
- Normalize the idea of different activities!
- Reduce sedentary time –focus is not always EXERCISE!



Thank you.

Questions ?