The dose response relationship between exercise intensity all-cause mortality.

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**BACKGROUND**
Aerobic exercise is known to improve cardiovascular health and decrease risk of all-cause mortality. It is important to know how to optimize the benefits of aerobic exercise given that cardiovascular diseases are the leading cause of death in the United States.

**PURPOSE**
- Determine which intensity is best for decreasing mortality in the general population.
- Determine whether high intensity interval training is better than moderate intensity continuous training for decreasing mortality in the general population.

**CRF & Mortality**
DeFina et al. - Meta-Analysis (2015)
- cardiorespiratory fitness (CRF) was correlated with mortality (greater percentile of CRF, the lower the risk)
- Greatest changes in mortality were found between the lower percentiles compared to the higher percentiles.

**HIIT vs MICT**
- high intensity interval training (HIIT) was better than moderate intensity continuous training (MICT) for improving CRF after 12 weeks
- Used randomized control trials that were tested on heart failure patients
  - most commonly used HIIT protocol was four, 4-minute intervals at 85-95% of peak heart rate with 3 minutes of active recovery at 60-70% of peak heart rate
  - primary metric used to determine CRF was increase in flow mediated dilation (FMD)
- HIIT was found to increase FMD from 5.14% to 9.45% while MICT increased FMD from 5.12% to 7.27%.

**CONCLUSION**
- Individuals who are inactive and increase their CRF will have a greater reduction in their risk of all-cause mortality than individuals who increase their CRF who already have high CRF.
- Individuals who vigorously exercised for 300 minutes per week had a greater reduction in all-cause mortality compared to both individuals who vigorously exercised 75 minutes per week and individuals who exercised at a lesser intensity for 300 minutes per week.
- Since it is known that CRF is inversely related to mortality, HIIT must therefore be better than moderate intensity continuous exercise for reducing risk of mortality.

**REFERENCES**