

Physical activity & Health

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- * A recent report from the World Health Organization estimates that close to 60% of the world population is inactive or insufficiently active.**
- * this physical inactivity causes 21%-25% of breast and colon cancer, 27% of diabetes, and 30% of the worldwide ischemic heart disease burden.**
- * Regular physical activity (PA) plays an important role in improving and maintaining one's health and well-being, especially as one ages.**
- * Benefits of PA include lowering the risk of developing coronary heart disease, stroke, type 2 diabetes, hypertension, and some cancers.**

PHYSICAL ACTIVITY AND ALL-CAUSE MORTALITY

- * The major causes of mortality in the United States are heart disease (26.3%), cancer (22.9%), stroke (6.2%), and diabetes mellitus (3.0%)
- * The Harvard Alumni Study is a prospective observational study of approximately 17,000 men who attended Harvard University between 1916 and 1950. The results of a 16-yr follow-up of physical activity levels and all-cause mortality revealed an **inverse dose-response relationship between physical activity levels and all-cause mortality**



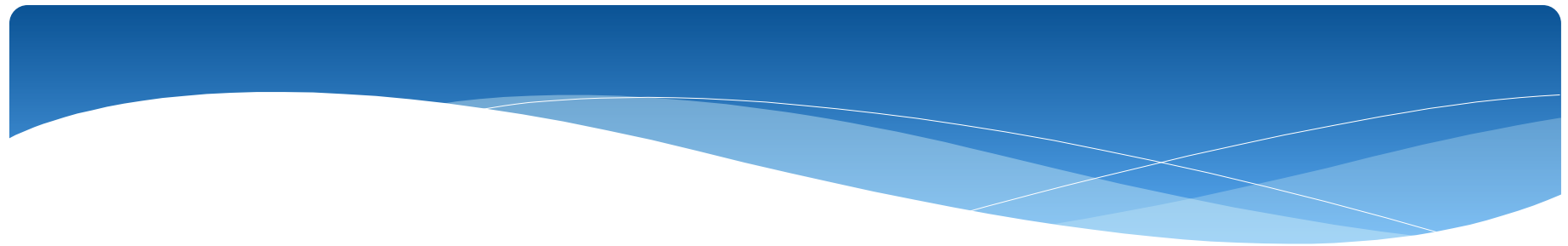
*** men who expended > 2,000 kcal . week⁻¹ of energy in physical activity had a 27% lower risk of mortality compared with men expending < 2,000 kcal . week⁻¹**

CHD and STROK

- * A 1990 meta-analysis of studies investigating the relationship between physical activity and **CHD** estimated a summary RR of **1.4** (95% CI: 1.0-1.8).
- * A sample of 16 ,878 men from the ACLS was followed prospectively for 10 yr to evaluate the relationship between baseline cardiorespiratory fitness level and **stroke** mortality.
- * Men in the low-fitness category had **2.70** (95% CI: 1.20-5.88) and **3.13** (95% CI: 1.22-8.33) times the risk of developing a stroke during the follow-up period compared with men in the moderate and high-fit categories, respectively

PHYSICAL ACTIVITY AND CANCER

- * Physical inactivity is increasingly recognized as an important contributor to the risk of cancer, especially **breast** and **colon** cancer.
- * Wolin and colleagues reviewed 52 observational studies and compared most active with least active individuals across studies . Greater activity in this analysis was associated with a **24%** reduction in the risk of developing **colon cancer** with similar reductions for men and women .



- * Monninkhof and colleagues reviewed **19 cohort** studies and **29 case-control** studies designed to assess the association between physical activity and breast cancer.
- * The authors found a strong and consistent reduction in risk of at least **20%** for **postmenopausal breast cancer** among more active individuals, where as evidence for reduction in premenopausal breast cancer was less conclusive.

Hypertention

- * Exercise training **lowers resting blood pressure** in individuals with normal blood pressure and those with hypertension and in individuals with and without prevalent cardiovascular disease.
- * Whelton and colleagues summarized 54 trials of aerobic exercise training with 2,419 participants in a meta-analysis and reported a significant reduction in **mean systolic** blood pressure (**-3.84 mm Hg** [95% CI: - 4.97 to -2.72 mm Hg]) and **mean diastolic** blood pressure (**-2.58 mm Hg** [95% CI: -3.35 to - 1.81 mm Hg]).
- * In sedentary populations , **even low level activity** such as walking 30-60 min / wk has measurable benefit .
- * An "optimal" dose (frequency, intensity and duration) of exercise for blood pressure lowering has not been defined .

Diabetes

- * There is consistent evidence that a physically active lifestyle provides **protection against the development of Type 2 diabetes**, and several studies document that individuals with higher cardiorespiratory fitness level are at lower risk of developing diabetes mellitus than their unfit counterparts.
- * In the Physicians' Health Study, men who exercised vigorously at **least once a week** had a **36%** lower incidence of Type 2 diabetes over 5 yr of follow-up (95% CI, 49% to 18%; $P < .001$) compared to their sedentary counterparts.

Diabetes

- * Similarly strong relationships between physical activity level and health outcomes have also been shown in populations with prevalent Type 2 diabetes.
- * In the National Health and Interview Survey , individuals who **walked at least 2 h / wk** had a **39% lower mortality rate** (95% CI: 52% to 22%) and a **34%** (95% CI: 55% to 4%) lower cardiovascular mortality rate compared to sedentary individuals during **8 yr** of follow-up.
- * A meta-analysis of 14 randomized controlled exercise trials among individuals with diabetes showed significant improvements in **glycemic control**, **visceral adiposity**, **exercise capacity** , and **plasma triglyceride** levels.

Musculoskeletal fitness

- * Musculoskeletal fitness includes aspects of **bone health**, **joint flexibility**, and **muscular strength** and endurance .
- * **Resistance training of 30 min or more per week** has been associated with a **23% lower 12-yr risk of CHD** in men enrolled in the Health Professionals' Follow-up Study.
- * Resistance training also **improves many markers of the metabolic syndrome** including body composition, blood glucose levels, insulin sensitivity, and blood pressure.
- * Resistance training can also be incorporated **safely** into activity regimens for patients with established **cardiovascular** disorders, such as **CHD** and **heart failure**, and has been shown to improve functional status in these populations.

Physical activity behavior change

The slide features a dark blue background with a lighter blue wavy graphic at the bottom. The text is centered and reads "Physical activity behavior change".

Precontemplation

- * The precontemplation stage includes individuals who are **not active** and are **not thinking** about becoming active.
- * Goal: Help client begin to think about being physically active
- * Specific barriers to physical activity should also be assessed, such as lack of time, lack of energy, environmental constraints (e.g., lack of access to physical activity facilities), and fear of injury.

Contemplation

- * The contemplation stage includes individuals who are **not physically active** but are **thinking about becoming active** .
- * **Goal: Increase likelihood that the client will take steps to becoming physically active.**
- * **Advise how to make physical activity (PA) part of daily life**
- * **Set specific goals that are realistic (e.g., think about with whom client would want to exercise)**

Preparation

- * The preparation stage includes individuals who **are currently engaging in some physical activity but not at the recommended level.**
- * **Goal: Increase PA to the recommended levels (30 min or more of PA on most, preferably all, days of the week)**
- * **Overcome barriers that prevent client from progressing to regular activity (e.g., problem solve overcoming barrier of bad weather)**
- * **Set specific goals that are daily, weekly, and/or monthly**
- * **Self-monitor activity**

Action

- * The action stage includes individuals who **are physically active** at the recommended level but have been for **fewer than 6 mo.**
- * The goal of this stage is to continue to make physical activity a regular part of the individual's life.
- * Identify risk factors for future relapse (e.g., vacations, stressful life events)

Maintenance

- * The maintenance stage includes individuals who **have been physically active** at the recommended level and have been **for 6 or more months.**
- * The goal for this stage is to prepare for future setbacks and to continue to increase enjoyment for physical activity.
- * It is important to continue to help the individual find ways to avoid boredom, either by trying new activities or by enlisting social support (e.g. , walking with a neighbor) .



Thanks for your attention