1. What is the relationship between physical activity and all-cause mortality?

2. What is the relationship between physical activity and cardiovascular disease mortality?
**Analytical Framework**

**Systematic Review Questions**
What is the relationship between physical activity and all-cause mortality?
What is the relationship between physical activity and cardiovascular disease mortality?

**Target Population**
Adults, 18 years and older

**Comparison**
Adults who participate in various levels of physical activity

**Exposure**
All types and intensities of physical activity, including lifestyle activities/leisure activities

**Endpoint Health Outcomes**
Incidence of:
- All-cause mortality
- Cardiovascular disease mortality

**Key Definitions**
- Dose-response: The relation between the dose of physical activity and the health or fitness outcome of interest.
- Dose: The amount of physical activity performed by the subject or participants. The dose can be measured in terms of a single component of activity (e.g., frequency, duration, intensity) or as the total amount.
- Intensity: Refers to the work-rate being performed or the magnitude of the effort required to perform an activity or exercise. Intensity can be expressed either in absolute or relative terms (relative to body mass).
Common Inclusion/Exclusion Criteria

- **Language**
  - Exclude: Studies that do not have full text in English

- **Publication Status**
  - Include: Studies published in peer-reviewed journals, PAGAC-approved reports
  - Exclude: Grey literature

- **Study Subjects**
  - Exclude: Studies of animals only
Inclusion/Exclusion Criteria

• Date of Publication
  – Original Research: Include 2006 - Present
  – Existing Sources: Include 2006 - Present

• Study Subjects
  – Include: Adults ages 18 and older
  – Exclude: No exclusions based on disease status

• Study Design
  – Include: Randomized controlled trials, Non-randomized controlled trials, Prospective cohort studies, Retrospective cohort studies, Case-control studies, Before-and-after studies, Systematic reviews, Meta-analyses, PAGAC-Approved reports
  – Exclude: Narrative reviews, Commentaries, Editorials, Cross-sectional studies.

• Exposure/Intervention
  – Include: All types and intensities of physical activity
  – Exclude: Missing physical activity, Single, acute session of exercise, Therapeutic exercise, Physical fitness as the exposure, Only used as confounding variable, Sedentary behavior

• Outcome
  – Include: All-cause mortality, Mortality from cardiovascular disease.
Draft Search Terms

- **Physical Activity Terms**

- **Outcome Terms**
Prioritized Questions

• **Q1.** What is the relationship between physical activity and all-cause mortality?

• **Q2.** What is the relationship between physical activity and cardiovascular disease mortality?

• **Q3.** What is the relation between physical activity and cardiovascular disease incidence?
• **Q4.** What is the relation between step count per day and mortality (all-cause or cause-specific) or disease incidence (e.g., coronary heart disease, type 2 diabetes)?

• **Q5.** What is the relation between bout duration of continuous aerobic physical activity and cardiorespiratory fitness OR health outcomes?

• **Q6.** What is the relation between high intensity interval training and reduction in cardiometabolic risk?
Prioritized Questions

• **Q7.** How does the declining basal level of activity influence the volume of physical activity (presumably MVPA) required to maintain a similar level of energy expenditure per day?

• **Q8.** Is cardiorespiratory fitness a modifiable mediator of the benefits of physical activity? Should it be treated as an outcome?
Areas for PAGAC Input or Discussion

• From other SCs want to know about studies that mention
  – Step counts and outcomes
  – Bouts
  – High intensity interval training; sprint interval training
• Fitness as an outcome, mediator: approach
• How deal with the continuum of exposure:
  – Energy; steps; sedentary activity