



**Meeting 2**

# **Subcommittee 6 Individuals with Chronic Conditions**

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# Question 1

1. **Among cancer survivors, what is the relationship between physical activity and (1) all-cause mortality, (2) cancer-specific mortality, or (3) risk of cancer recurrence or second primary cancer?**
- **When physical activity is related to an outcome, additional questions are:**
  - **1a. Is there a dose-response relationship and if so, what is its shape?**
  - **1b. Does the strength of the relationship depend upon: frequency, duration, intensity, type (mode), how physical activity is measured, and/or characteristics of people (e.g., age, gender)?**

# Analytical Framework

## Subcommittee: Chronic Conditions

### Systematic Review Question

Among cancer survivors, what is the relationship between physical activity and (1) all cause mortality; (2) cancer specific mortality, and (3) risk of cancer recurrence or second primary cancer?

### Target Population

Cancer survivors of all ages

### Comparison

Cancer survivors who participate in varying levels of physical activity

### Intervention/Exposure

All types and intensities of physical activity

### Endpoint Health Outcomes

- All-cause mortality
- Cancer-specific mortality
- Cancer recurrence
- Second primary cancer
- Adverse events related to physical activity

### Key Definitions

- Cancer survivor: A person who has been diagnosed with, is undergoing treatment for, or has received treatment for any type of cancer
- Cancer recurrence: Original primary cancer is detected after a remission (when cancer was not detectable)
- Second Primary cancer: A new cancer that occurs sometime after diagnosis of original primary

# 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

## Question #1

- **Date of Publication**
  - Original Research: Include 2006 - Present
  - Existing Sources: Include 2006 - Present
- **Study Subjects**
  - Include: Cancer survivors of a single cancer type of all ages
  - Exclude: None
- **Study Design**
  - Include: Randomized controlled trials, prospective cohort studies, systematic reviews, meta-analyses, and PAGAC-approved reports
  - Exclude: All other study types, narrative reviews, commentaries, editorials
- **Exposure/Intervention**
  - Include: All types and intensities of physical activity
  - Exclude: Single (acute) session of exercise, therapeutic exercise, exposure = physical fitness, RCT's of multi-modal interventions lacking data on PA-only intervention(s)
- **Outcome**
  - Include: All-cause mortality, cancer specific mortality, cancer recurrence, second primary cancer, adverse events

# Draft Search Terms

- **Physical Activity Terms**
  - **Activities of daily living, Activity of daily living, Aerobic activities, Aerobic activity, Balance training, Cardiovascular activities, Cardiovascular activity, Chi Gong, Chi Kung, Endurance activities, Endurance activity, Exercise, Free living activities, Free living activity, Functional training, Leisure-time physical activity, Lifestyle activities, Lifestyle activity, Muscle stretching exercises, Physical activity, Physical conditioning, Qigong, Recreational activities, Recreational activity, Resistance training, Sedentary, Sedentary lifestyle, Strength training, Tai chi, Tai ji, Walk, Walking, Yoga**
- **Cancer Terms**
  - **Neoplasms (MeSH), Leukemia, Lymphoma, Melanoma, Myeloma, Neuroblastoma, Non-Melanoma, Osteosarcoma, Retinoblastoma, Rhabdomyosarcoma, Sarcoma, Wilms tumor, and 40 specific types of cancer mainly in adults [coordinate with SC3- Cancer]**
- **Outcome Terms**
  - **Death, Death, Dying, Fatal\*, Mortalit\*, Postmortem, Mortality, Neoplasm recurrence, local (MeSH), Recurrence, Neoplasms, Second primary (MeSH), Second cancer, Second primary cancer, Second neoplasm, Second primary neoplasm**

# Prioritized Questions #2 and #3

2. In people with neuro-motor disease, what is the relationship between physical activity and (1) risk of cardiovascular disease; (2) physical function; and (3) risk of comorbid conditions?
  
  3. In people with osteoarthritis, what is the relationship between physical activity and (1) progression of osteoarthritis and (2) risk of co-morbid conditions, and (3) physical function?
- When physical activity is related to an outcome, additional questions are:
    - a) Is there a dose-response relationship and if so, what is its shape?
    - b) Does the strength of the relationship depend upon: frequency, duration, intensity, type (mode), how physical activity is measured, and/or characteristics of people (e.g., age, gender)?

# Question #4:

- **For the following chronic conditions, can the relationship between physical activity and (1) disease progression, (2) risk of co-morbid conditions, (3) physical function and (4) measures of quality of life be ascertained from existing systematic reviews of the literature?**
  - 1) **Peripheral artery disease**
  - 2) **Chronic renal disease**
  - 3) **Type 2 Diabetes**
  - 4) **Cancer survivors**
  - 5) **Hypertension**
  - 6) **Lipid disorders**
  - 7) **Obesity**
  - 8) **HIV/AIDS**
  - 9) **Osteoporosis**
  - 10) **Rheumatoid arthritis**
  - 11) **Low back pain**
  - 12) **Intellectual disability including Downs Syndrome**
  - 13) **Epilepsy**
  - 14) **Mixed connective tissue disease (e.g. systemic lupus erythematosus).**
  - 15) **Traumatic brain injury**
- **(Same sub-questions when a systematic review concludes PA is related to an outcome)**



# Requested input from PAGAC on Thursday Oct 26

- **How to prioritize chronic conditions for any review:**
  - **Likely 15+ chronic conditions with sufficient literature to review**
  - **Priorities #1 & #2 = cancer survivors & neuro-motor conditions, is consistent w 2008 PAGAC**
  - **Breadth of review would be larger if rely only on existing reviews, except for a few condition/outcomes of highest priority**

# Additional areas for PAGAC Input or Discussion

- **Studies and reviews of therapeutic physical activity are excluded.**  
**Working definition:**
  - ***Non-therapeutic* activity occurs outside of a medical program, e.g. in a community program or self-directed.**
  - ***Therapeutic* activity is delivered as treatment for a specific disease by medical staff (e.g. physical therapist); it is typically reimbursed by health insurance providers.**
    - **Physical activity that is part of structured rehabilitation is deemed therapeutic (e.g. cardiac rehab).**
  - **Rationale for “disease progression” as prevention**
    - **Prevention = reducing risk of stage 1 hypertension in people with pre-hypertension**
    - **By analogy, reducing risk of stage 2 hypertension in people with stage 1 hypertension is a type of prevention**

# Summary of Thursday Discussions (1)

- **Proceed with Q1 (cancer survivors); Q2 still ranked #2, but do not include neuro-motor conditions of low prevalence; Q3 still ranked #3 as osteoarthritis is prevalent and literature on PA and osteoarthritis is large**
- **Include cardiovascular disease in list of conditions in Q4.**
- **Q4 review will address effects of PA in obese adults because obesity is prevalent in people with chronic diseases; regard obesity is a modifier and not review as a separate chronic condition.**
- **A preliminary search on number of reviews (systematic, meta-analysis, report) provides an estimate the size of the literature on preventive effects of PA in a chronic condition**

# Summary of Thursday Discussions (2)

- **Following strategy for Q4:**
  - **Do not review conditions where activity recommendations typically need to be individualized based upon clinical status**
  - **Rely only on existing reviews.**
  - **Keep the four outcomes.**
  - **Rank conditions on prevalence and size of literature for each condition/outcome pair (estimated from search).**
  - **The sum of the two ranks determines priority.**
  - **Priority can be adjusted by SC6 members (1)when conditions are similar in prevalence and size of literature is similar, to achieve more diversity in conditions reviewed and (2) based upon quality ratings of reviews.**

# Summary of Thursday Discussion (3)

- **Suggested revision of list of conditions on Q4:**
  - **CVD conditions: peripheral vascular disease, coronary heart disease, blood pressure, lipid disorders, congestive heart failure (note stroke included in Q2)**
  - **Osteoporosis, type 2 diabetes, low back pain, cancer, chronic kidney disease**
  - **Cancer survivors (outcomes of Q4 differ from those of Q1)**