

Exercise Screening and Prescription for Older Adults with Cancer

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Exercise is Medicine

- Decrease toxicities and side effects of cancer and its treatments
 - Fatigue, emesis, nausea, infections, inflammation, immunosuppression, depression, insomnia, cognitive impairment, sarcopenia, loss of physical function
- Decrease recurrence and second cancers
- Improve quality of life
- Improve survival



EXCAP[®] Home-Based Exercise for Older Cancer Patients





EXCAP[®] Intervention





EXCAP[®] Adherence & Adverse Events

	Controls	Exercisers
<u>Baseline</u> Average Daily Steps	5861	6548
<u>Post-Intervention</u> Average Daily Steps	2471	7180
<u>Baseline</u> Average Number of Minutes and Days of Resistance Bands	0/0	0/0
<u>Post-Intervention</u> Average Number of Days/Minutes Per Day of Resistance Bands	0/5	3/22
<u>Adverse Events</u>	1 AE/8SAE	2AE/7SAE



Results (N=58 Prostate Cancer Patients)

- Intervention improved:
 - Cancer-related fatigue
 - Cardiopulmonary function
 - Strength
 - QOL
 - Improved sleep
 - Maintained muscle mass
 - Reduced Inflammation
 - Increased expression of genes supporting muscle growth, metabolism and immune function



Results

(N=198 Older Cancer Patients Receiving Chemotherapy)

- Intervention improved:
 - Quality of life
 - Anxiety
 - Confusion and delirium
 - Diarrhea
 - Shortness of breath
 - Sensitivity to cold or heat in hands or feet



Clinical Implications

- Exercise is safe even for older cancer patients as long as they are properly screened and the exercise prescription is appropriately modified for their individual circumstances
 - Low to moderate intensity
 - Home-based and unsupervised



Clinical Implications

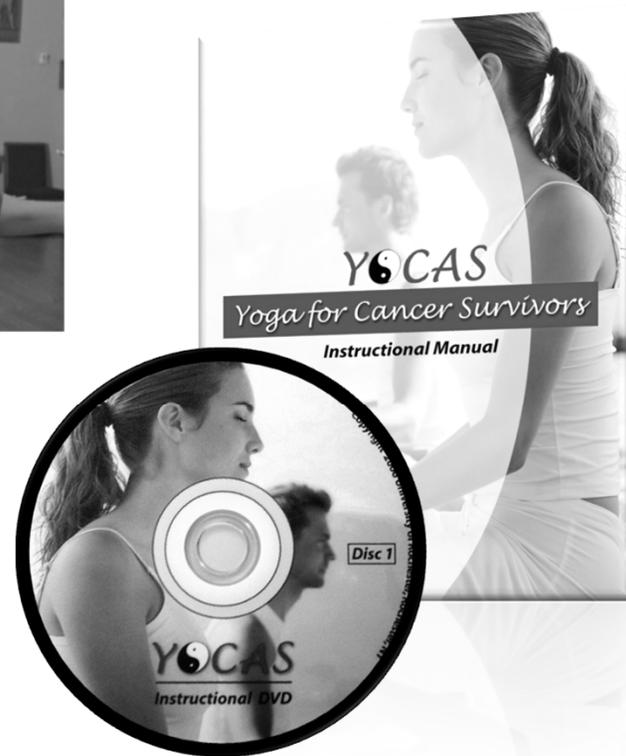
- Referral of older cancer patients to an exercise professional is suggested for screening and assistance in developing an exercise prescription that is tailored based on functional capacity and co-morbidities prior to commencing exercise
 - ACSM Exercise Guidelines for Cancer Patients and Survivors
 - Older cancer patients with balance issues were able to safely complete a 6-Minute Walk Test in lieu of a graded exercise test using a treadmill to assess VO_2 max

**YOCAS[®] Significantly Improves Sleep,
Anxiety, Mood, Memory, Bone Pain and
Circadian Rhythm in 97 Cancer Survivors
Over Age 60**



Mustian, et al. 2013, Sprod et al. 2014, Janelins et al. 2015, Peppone et al. 2015

YOCAS[®] Intervention



Summary



- YOCAS® Yoga improved
 - Fatigue (physical and mental)
 - Insomnia
 - Sleep quality
 - Anxiety
 - Mood
 - Memory
 - Arthralgia and pain
 - Global Toxicity/Side Effect Burden
 - Quality of life
 - Reducing Sleep Medication Use!
 - Circadian rhythm profiles!

**It worked
in older
adults too!**

Exercise Guidelines for Cancer Patients and Survivors

- Evaluate baseline functional/fitness levels
- Become knowledgeable about cancer and non-cancer related limitations
- Exercise should be individually tailored
- **AVOID INACTIVITY!**
- **START & PROGRESS SLOWLY!**



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of SPORTS MEDICINE®**
www.acsm.org





Exercise Guidelines For Cancer Patients and Survivors

- Aerobic Exercise
 - 150 Minutes of Moderate Intensity/75 minutes of Vigorous
- Anaerobic Exercise
 - 20-30 Minutes Across All Major Muscle Groups, 2-3 days per week



What Can You Do?

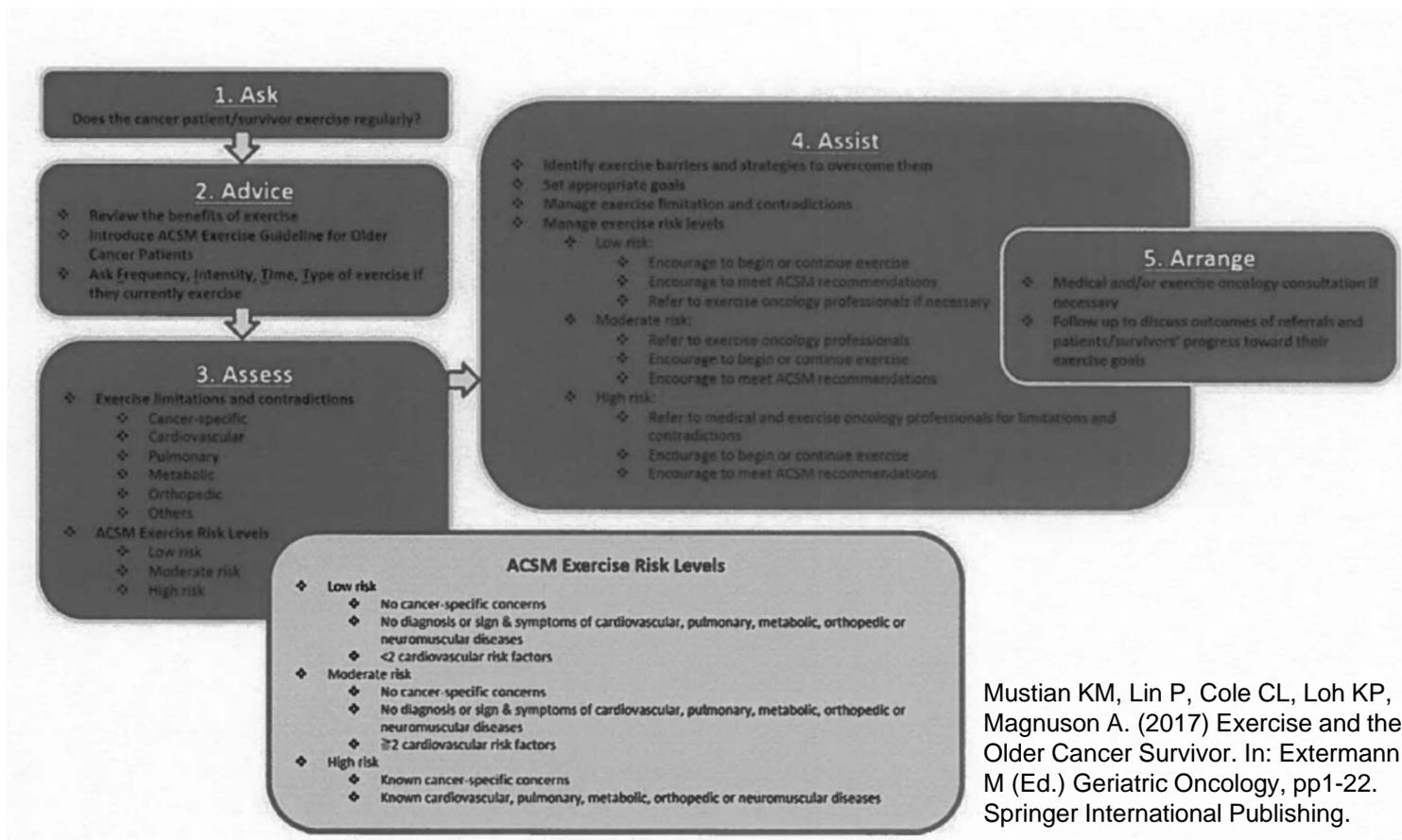
**USE 5 A Model &
Refer to Credible
Rehabilitation**



**The only prescription
with unlimited refills.**



The 5-A model for Applied Exercise Oncology referral



Mustian KM, Lin P, Cole CL, Loh KP, Magnuson A. (2017) Exercise and the Older Cancer Survivor. In: Extermann M (Ed.) Geriatric Oncology, pp1-22. Springer International Publishing.

The 2015 ACSM Exercise Preparticipation Health Screening Recommendations

- Recognize that the hazards of exercise-related cardiovascular events may more likely be reduced by careful attention to a safe and effective exercise prescription that:
 - Addresses FITT-VP (frequency, intensity, time, type, volume, progression) that incorporates a progressive transitional phase during which exercise duration and intensity are gradually increased
 - Advocates appropriate warm-up and cool-down
 - Promotes education of warning signs/symptoms
 - Encourages sedentary people to engage in regular, brisk walking to move them out of the least physically fit, least physically active cohort
 - Counsels physically inactive individuals to avoid unaccustomed vigorous intensity physical activity.

Healthcare provider questions

1. Is the patient a regular exerciser?
2. Do they have known disease (CV, metabolic, or renal)?
3. Are they experiencing any signs or symptoms suggestive of (CV, metabolic, or renal)?
 - Use Par-Q+ , AHA/ACSM Health/Fitness Facility Pre-participation Screening Questionnaire, or other screening tool

*Use the 2015 ACSM guidelines to determine if medical clearance is recommended prior to the initiation of exercise, then referral to the Clinical Exercise Physiologist

1. Is the patient a regular exerciser?

- Regular Exercise is defined as any planned, structured physical activity (for example, brisk walking, aerobics, jogging, bicycling, swimming, rowing, etc.) performed to increase physical and mental health.**
- Such activity should be performed at least 30 minutes at moderate intensity on at least 3 times a week for at least 3 months.**
- Exercise does not have to be painful to be effective, but should be done at a level that increases your breathing rate and causes you to break a sweat.**

1. Is the patient a regular exerciser?

Do you exercise regularly according to that definition?

- Yes, I have been for MORE than 6 months.
- Yes, I have been for LESS than 6 months.
- No, but I intend to in the NEXT 30 DAYS.
- NO, but I intend to in the NEXT 6 MONTHS.
- No, and I do NOT intend to in the next 6 months.

2. Does the patient have known disease?

Exercise Preparticipation Health Screening Questionnaire for Exercise Professionals

Assess your client's health needs by marking all *true* statements.

Step 1

SYMPTOMS

Does your client experience:

- chest discomfort with exertion
- unreasonable breathlessness
- dizziness, fainting, blackouts
- ankle swelling
- unpleasant awareness of a forceful, rapid or irregular heart rate
- burning or cramping sensations in your lower legs when walking short distance

If you **did** mark any of these statements under the symptoms, **STOP**, your client should seek medical clearance before engaging in or resuming exercise. Your client may need to use a facility with a **medically qualified staff**.

If you **did not** mark any symptoms, continue to steps 2 and 3.

Step 2

CURRENT ACTIVITY

Has your client performed planned, structured physical activity for at least 30 min at moderate intensity on at least 3 days per week for at least the last 3 months?

Yes No

Continue to Step 3.

Step 3

MEDICAL CONDITIONS

Has your client had or do they currently have:

- a heart attack
- heart surgery, cardiac catheterization, or coronary angioplasty
- pacemaker/implantable cardiac defibrillator/rhythm disturbance
- heart valve disease
- heart failure
- heart transplantation
- congenital heart disease
- diabetes
- renal disease

Evaluating Steps 2 and 3:

- If you **did not mark any of the statements in Step 3**, medical clearance is not necessary.
- If you marked Step 2 "**yes**" and **marked any of the statements in Step 3**, your client may continue to exercise at light to moderate intensity without medical clearance. Medical clearance is recommended before engaging in vigorous exercise.
- If you marked Step 2 "**no**" and **marked any of the statements in Step 3**, medical clearance is recommended. Your client may need to use a facility with a **medically qualified staff**.

Magal M, Riebe D. New preparticipation health screening recommendations: what exercise professionals need to know. ACSM Health Fitness J. 2016;20(3):22-7.

3. Does the patient have suggestive signs and symptoms of disease?

Signs and Symptoms

TABLE 5. Prodromal symptoms reported by 45 subjects within 1 week of their SCD.

Symptom	Reports, n
Chest pain/angina	15
Increasing fatigue	12
Indigestion/heartburn/gastrointestinal symptoms	10
Excessive breathlessness	6
Ear or neck pain	5
Vague malaise	5
Upper respiratory tract infection	4
Dizziness/palpitations	3
Severe headache	2

Adapted from Northcote et al. (57).

- Individuals who experience cardiovascular complications during or soon after exercise often have prodromal symptoms in the days and weeks before the event.
- Exercise professionals should promote education about exertion-related symptoms in the persons they counsel

Franklin *Circulation* 2014; Thompson *Circulation* 2007

Physical Activity Readiness Questionnaire + (PAR-Q+)

Warburton DER, Jamnik VK, Bredin SSD, and Gledhill N on behalf of the PAR-Q+ Collaboration.

The Physical Activity Readiness Questionnaire for Everyone (PAR-Q+) and Electronic Physical Activity Readiness Medical Examination (ePARmed-X+). *Health & Fitness Journal of Canada* 4(2):3-23, 2011.

CSEP approved Sept 12 2011 version: for use by CSEP Certified Exercise Physiologists®

PAR-Q+

The Physical Activity Readiness Questionnaire for Everyone

Regular physical activity is fun and healthy, and more people should become more physically active every day of the week. Being more physically active is very safe for MOST people. This questionnaire will tell you whether it is necessary for you to seek further advice from your doctor OR a qualified exercise professional before becoming more physically active.

SECTION 1 - GENERAL HEALTH

Please read the 7 questions below carefully and answer each one honestly; check YES or NO.		YES	NO
1.	Has your doctor ever said that you have a heart condition OR high blood pressure?	<input type="checkbox"/>	<input type="checkbox"/>
2.	Do you feel pain in your chest at rest, during your daily activities of living, OR when you do physical activity?	<input type="checkbox"/>	<input type="checkbox"/>
3.	Do you lose balance because of dizziness OR have you lost consciousness in the last 12 months? Please answer NO if your dizziness was associated with over-breathing (including during vigorous exercise).	<input type="checkbox"/>	<input type="checkbox"/>
4.	Have you ever been diagnosed with another chronic medical condition (other than heart disease or high blood pressure)?	<input type="checkbox"/>	<input type="checkbox"/>
5.	Are you currently taking prescribed medications for a chronic medical condition?	<input type="checkbox"/>	<input type="checkbox"/>
6.	Do you have a bone or joint problem that could be made worse by becoming more physically active? Please answer NO if you had a joint problem in the past, but it does not limit your current ability to be physically active. For example, knee, ankle, shoulder or other.	<input type="checkbox"/>	<input type="checkbox"/>
7.	Has your doctor ever said that you should only do medically supervised physical activity?	<input type="checkbox"/>	<input type="checkbox"/>

If you answered NO to all of the questions above, you are cleared for physical activity.

 Go to Section 3 to sign the form. You do not need to complete Section 2.

- › Start becoming much more physically active – start slowly and build up gradually
- › Follow the Canadian Physical Activity Guidelines for your age (www.csep.ca/guidelines).
- › You may take part in a health and fitness appraisal.
- › If you have any further questions, contact a qualified exercise professional such as a CSEP Certified Exercise Physiologist® (CSEP-CEP).
- › If you are over the age of 45 yrs. and NOT accustomed to regular vigorous physical activity, please consult a qualified exercise professional (CSEP-CEP) before engaging in maximal effort exercise.

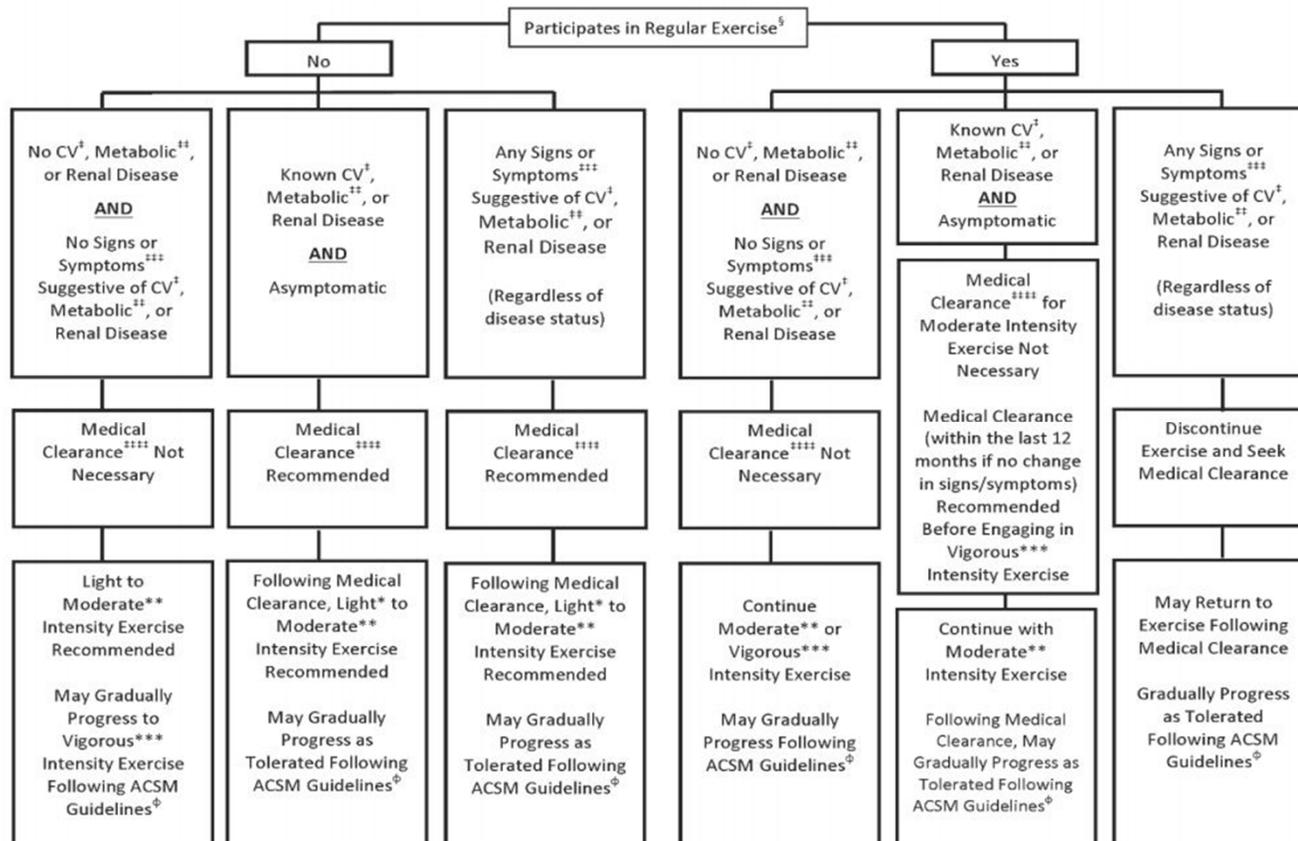
 If you answered YES to one or more of the questions above, please GO TO SECTION 2.

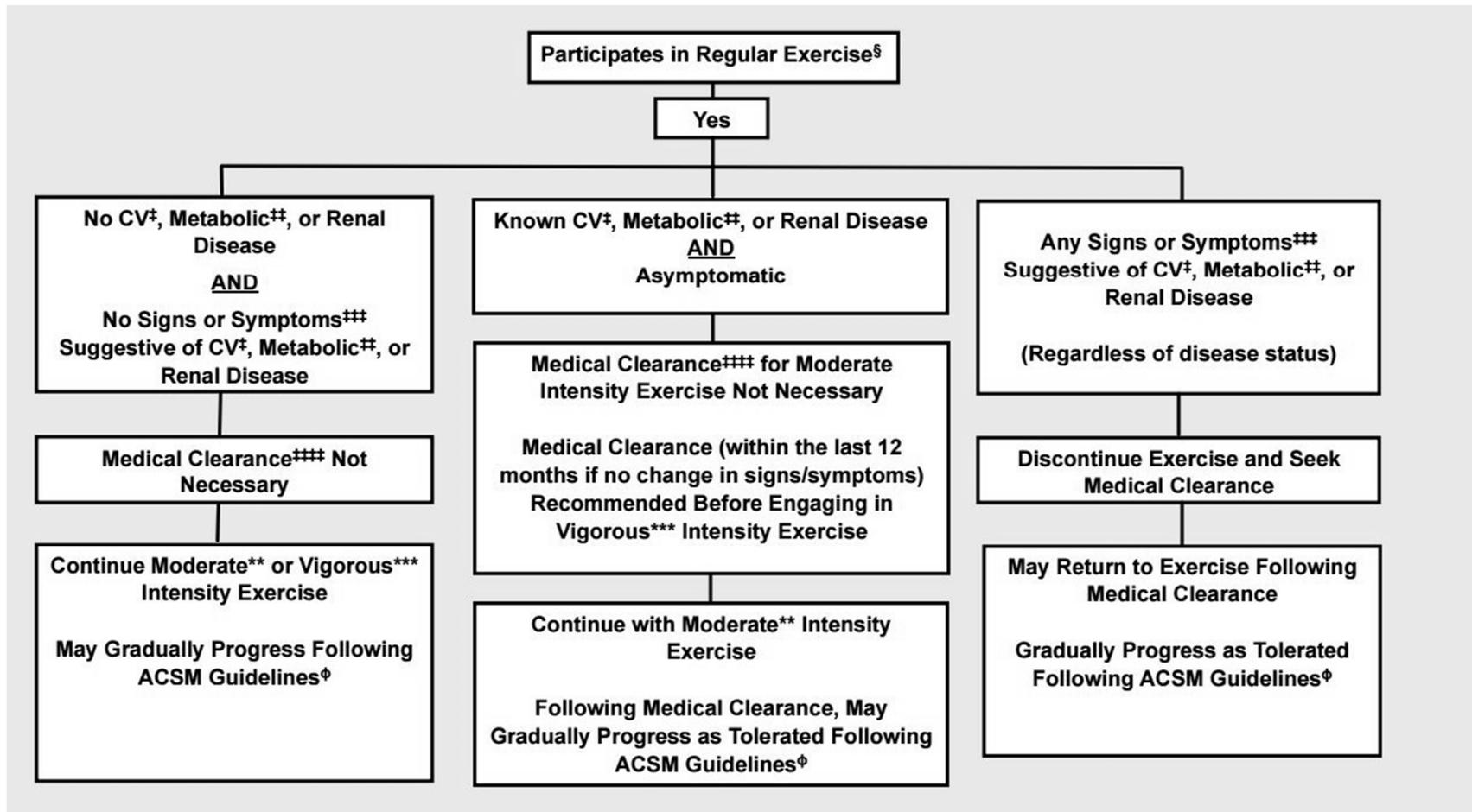
 Delay becoming more active if:

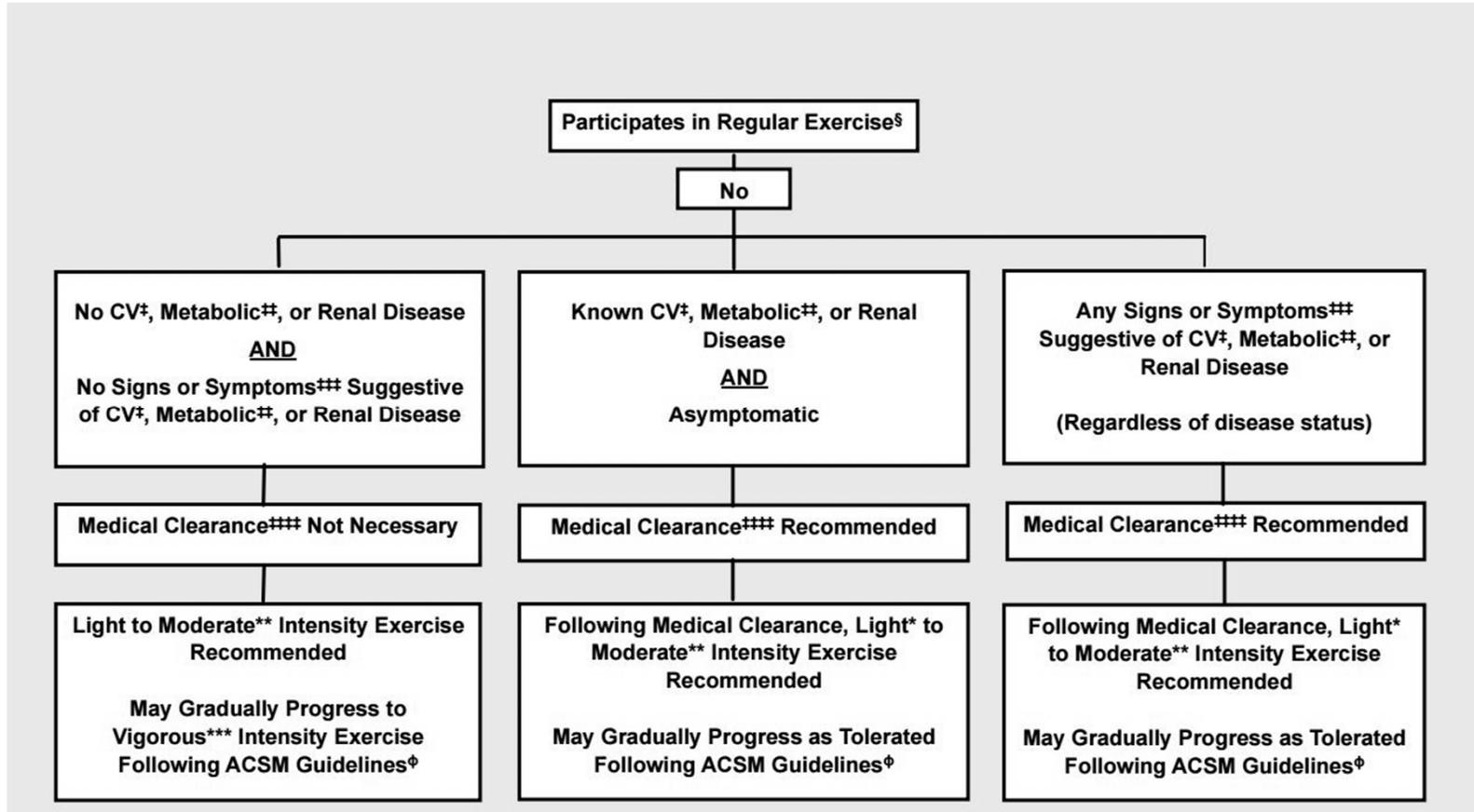
- › You are not feeling well because of a temporary illness such as a cold or fever – wait until you feel better
- › You are pregnant – talk to your health care practitioner, your physician, a qualified exercise professional, and/or complete the PARmed-X for Pregnancy before becoming more physically active OR
- › Your health changes – please answer the questions on Section 2 of this document and/or talk to your doctor or qualified exercise professional (CSEP-CEP) before continuing with any physical activity programme.

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The 2015 ACSM Exercise Preparticipation Health Screening Recommendations

Participates in Regular Exercise	Yes
Signs and Symptoms	No
Known Disease	No
Medical Clearance Needed?	Moderate Exercise - No Vigorous Exercise - No

Questions???