Physical Activity Assessment

**Determining Risk Level**

- Ask the patient about duration, intensity, and frequency of activity.
- Ask about barriers to physical activity, including time, competing demands, and physical limits.
- Assess the patient's current physical activity level.
- Determine the risk level for exercise-induced adverse events.

**Medications**
- Steroid myopathy
- Hematopoietic growth factors
- History of previous injuries (e.g., ankle, knee)
- Need for assistive devices
- Felt risk assessment
- Comorbidities and treatment effects
- Physician neurotoxicity
- Arthritis/musculoskeletal pain
- Primay malignancy
- Cardiovascular disease
- Cognitive/谵妄
- Treatment complications and treatment effects

**Stress**
- Nutritional status
- Emotional distress
- Fatigue
- Pain

**Social Support**
- Religious or spiritual support
- Home or community resources
- Neighboring resources (including access to outdoor space)
- Fall risk assessment
- Need for assistive devices (cane, walker, brace, etc.

**Environmental**
- Physical activity in current physical activity level
- Assess baseline level of activity prior to treatment and current physical activity level
- Evaluate goals of regular physical activity

**Assessment of**
- Nutritional deficiencies
- Emotional distress
- Fatigue
- Pain

**Contributing Factors**
- Assess baseline level of activity prior to treatment and current physical activity level
- Evaluate goals of regular physical activity
- Assess baseline level of activity prior to treatment and current physical activity level
- Evaluate goals of regular physical activity

**Physical Activity**
- Nutritional deficiencies
- Emotional distress
- Fatigue
- Pain

**Risk of Systems**
- Sleep
- Social support
- Timecompromising demands
- Physical limits
- Instrumental activities of daily living

**By Simulator**
- Environmental
- Nutritional deficiencies
- Emotional distress
- Fatigue
- Pain

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For example, see Godin G and Shepard R. Godin Leisure Time Exercise Questionnaire. Medicine and Science in Sports and Exercise 1997; 29 June Supplement: S36-S38.
### IMPLEMENTATION OF RECOMMENDATIONS

<table>
<thead>
<tr>
<th>Meeting Guideline recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current or prior exercise behavior:</td>
</tr>
<tr>
<td>• Frequency</td>
</tr>
<tr>
<td>• Intensity</td>
</tr>
<tr>
<td>• Type</td>
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<tr>
<td>• Time</td>
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</tbody>
</table>

| Not meeting Guideline recommendations and/or Moderate- to high-risk patients |

<table>
<thead>
<tr>
<th>Initial prescription:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Frequency: 1-3 days/week</td>
</tr>
<tr>
<td>• Intensity: Light to moderate</td>
</tr>
<tr>
<td>• Type: Brisk walking and/or resistance prescription</td>
</tr>
<tr>
<td>• Time goal: 20 minutes/session</td>
</tr>
</tbody>
</table>

| Periodic reassessment, positive reinforcement with review of benefits of exercise, and encouragement to maintain activity level |
| Discuss and review possible side effects of exercise (eg, pain) |
| Continued reinforcement of guideline recommendations at follow-up visits |
| If tolerating, consider variation, additional activity, or progression to: |
| • Frequency: 4-6 days/week |
| • Intensity: Light to vigorous |
| • Type: Varied aerobic, resistance prescription, endurance |
| • Time: 20-60 minutes/session |

<table>
<thead>
<tr>
<th>Progression:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Frequency: Up to 5 days/week</td>
</tr>
<tr>
<td>• Intensity: Light to moderate</td>
</tr>
<tr>
<td>• Type: Brisk walking and/or resistance prescription</td>
</tr>
<tr>
<td>• Time: 20-60 minutes/session as tolerated</td>
</tr>
</tbody>
</table>

**Note:** All recommendations are category 2A unless otherwise indicated.

**Clinical Trials:** NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

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9 See General Principles of Physical Activity (SPA-1).


1 If tolerating minimum guideline recommendations, consider encouragement of variation within exercise program or physical activities.

k Moderate to high-risk patients may need additional evaluation before doing more rigorous activity.

1 See Examples of Exercise, Strategies to Increase Physical Activity (SPA-B).

m See Guidance For Resistance Training Recommendations (SPA-C).

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**SPA-4**
CONSIDERATIONS FOR SPECIFIC POPULATIONS

- Lymphedema:
  - Survivors with lymphedema should utilize compression garments when engaging in exercise.
  - Work with trained exercise professional if considering weight training or resistance training.
  - Undergo baseline and periodic evaluation for development or exacerbation of lymphedema.
  - Initiate strength training exercise involving affected body part only if lymphedema stable:
    - No need for lymphedema therapy within past 3 months
    - No recent limb infections requiring antibiotics
    - No change in limb circumference >10%
    - No change in ability to perform activities of daily living
  - Resistance training/weight lifting: Gradually increase resistance by smallest increment possible with monitoring.
  - Stop exercise and refer to lymphedema specialist if exacerbation of lymphedema occurs.
  - Continued full use of the extremity and range-of-motion exercises are encouraged to maintain strength and range of motion even in the presence of lymphedema.

- Ostomy:
  - Empty ostomy bag before engaging in exercise.
  - Weight lifting/resistance exercises should start with low resistance and progress slowly under the guidance of trained exercise professionals.
  - Avoid contact sports and exercises that result in excessive intra-abdominal pressure.
  - Infection precautions recommended.

- Stem cell transplant:
  - Initiate physical activity as tolerated, with clearance by transplant provider.
  - Survivors with indwelling catheters should avoid swimming until catheter is removed.
  - Avoid hot tubs for one year after transplant.
  - Public gym use should not be discouraged because the benefits of exercise outweigh the risk of exposure.

- Peripheral neuropathy:
  - Stability, balance, and gait should be assessed before engaging in exercise.
  - Consider alternative aerobic exercise (stationary biking, water aerobics) rather than walking if neuropathy affects stability.
  - Monitor discomfort in hands when using hand-held weights. Consider using dumbbells with soft/rubber coating, and/or wear padded gloves (e.g., cycling gloves).

- Bone loss/bone metastases:
  - Survivors with osteoporosis or bone metastases should have fracture risk and bone density assessed before initiation of exercise program as clinically indicated.

Note: All recommendations are category 2A unless otherwise indicated.

Clinical Trials: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

1When possible, survivors in these populations should initiate exercise program under supervision by trained personnel. Trained personal can include physical therapists, certified trainers, cancer rehabilitation specialists, or exercise specialists. Specialized training in cancer exercise is available through the American College of Sports Medicine (ACSM) (http://www.acsm.org/get-certified). Patients should be encouraged to use an ACSM-certified trainer when available.
Note: All recommendations are category 2A unless otherwise indicated.

Clinical Trial: NCCN believes that the best management of any cancer patient is in a clinical trial. Participation in clinical trials is especially encouraged.

Risk Assessment for Exercise-Induced Adverse Events

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Low Risk:
- Early-stage cancer survivors
- High baseline level of physical activity
- No significant comorbidities

Moderate Risk:
- Peripheral neuropathy
- Arthritis/musculoskeletal issues
- Bone metastases/poor bone health
- Lymphedema

High Risk:
- History of lung surgery or major abdominal surgery
- Ostomy
- Cardiopulmonary comorbidities
- Extreme fatigue
- Ataxia
- Severe nutritional deficiencies

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Considerations for specific populations (See SPA-A)

Implementation of physical activity recommendations (See SPA-4)

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Avoid Physical Activity/Exercise:
- Severe anemia
- Immediately after surgery (wound healing)
- Worsening/changing physical condition (e.g., lymphedema exacerbation)
- Active infection

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General recommendations for physical activity for cancer survivors
- Consider medical evaluation prior to initiation of exercise program
- Consider referral to trained personnel
- Medical clearance by physician
- Refer to trained personnel

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Avoid unsupervised physical activity for approximately 6 weeks. However, supervised physical activity with early mobilization and referral to a trained therapist is strongly encouraged.

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Supervised physical activity is advised for persons who are in a clinical trial or who have high-risk conditions. Patients should be referred to a trained professional for evaluation and referral to a trained therapist.

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http://www.acsm.org/get-certified