


CANCER REHABILITATION

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## Exercise and cancer rehabilitation

Screening and assessment guidance

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## Individualisation

- Limited sources for guidance (Schmitz et al., 2010)
- Presents many complications (cancer site, aggression, treatments, side effects)
- Individual attitude and perception
- Prior fitness level
- Thorough screening and reading to determine required testing and adaptations.

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## Screening

- Cardiovascular disease risk factors;
- Co-morbidities;
- Orthopaedic problems;
- Fitness and activity level prior to diagnosis;
- Type, site and stage of cancer;
- Type, site and stage of treatment;
- Side effects of treatment ;
- Psychological health;
- Particular attention to test time and condition on testing.

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**Limitations to testing**

- CV disease
- Neuropathies
- Site and size of tumour
- Secondary's
- Radiotherapy/surgery site
- Lymphoedema
- Pain/discomfort
- Throat and mouth cancer
- Mobility
- **Any more?**

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**ACSM guidelines for exercise testing**

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- Increased risk of fracture- Hormone therapy
- CV events
- Neuropathies- Chemo
- Musculoskeletal morbidities
- Treatment related toxicity
- Metastatic disease in the bone will require adaptation due to fragility

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| Cancer site   |  |   |  |      |      |  |  |
|---|--|---|--|------|------|--|--|
| General medical assessment recommended before exercise            | Evaluation recommended for peripheral neuropathies and musculoskeletal morbidities. For hormonal therapies and metastatic bone disease, assessment of fracture risk recommended. Patients with CV disease should seek assessment of fitness to exercise. |   |  |      |      |  |  |
| Consider the specific medical assessment required before exercise | Evaluation of upper limb/shoulder mobility before upper body exercise  | Evaluation of muscle strength and walking | Assessment before starting to march that is walking programme for consistent reduction | NONE | NONE | Assess for lower extremity lymphoedema before vigorous CV or resistance training |  |
| Exercise testing recommended                                      | None required before walking, resistance training or flexibility. Follow ACSM guidelines before mid- and high- aerobic training. One step max safe in breast cancer survivors with and at risk from lymphoedema  |   |  |      |      |  |  |
| Exercise testing order and timing                                 | As per outcome of medical assessments and following ACSM guidelines for exercise testing   |   |  |      |      |  |  |
| Contra-indication for exercise testing                            | Follow ACSM for exercise testing   |   |  |      |      |  |  |

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### Before testing

- Reduce external influence on variables:
  - No caffeine
  - No exercise
  - No eating (2 hours)
  - No alcohol
  - Same time of day/circumstances
  - Same equipment/technician
  - Hydration

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### Data collection

- **S**ubjective
- **O**bjective- prioritise and choose suitable test and adapt for cancer
- **A**ssess
- **P**rioritise/**P**lan
- **P**rogramme

Useful resource : The Cancer and physical activity standard evaluation framework (Macmillan 2013)



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### Rules of assessment

- Every 4-6 weeks
- Standardised
- Relevant
- Reliable
- Valid
- Interpretable/meaningful
- Adaptation- very important for cancer

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| Method  | Measures                                   | End point  |
|---|--|--|
| <b>Protocol:</b><br>Intermittent exercise protocol<br>3-min stage incremental test    | RPE<br>HR<br>SP<br>VO2                     | VO2 peak<br>Lactate threshold<br>RPE following<br>RPE following<br>Appetitive response |
| <b>Protocol:</b><br>0-12 minute constant test   | RPE<br>VO2<br>Distance                     | Lactate threshold<br>RPE   |
| <b>Protocol:</b><br>Isometric EMG (L4)<br>Isometric EMG<br>Hand grip strength test    | Max voluntary contraction                  | Max voluntary contraction<br>Peak torque<br>Perceived exertion<br>Abdominal pain       |
| <b>Protocol:</b><br>Bromberg<br>60 sec reach  | ROM  | Max end of range<br>Joint awareness  |
| <b>Protocol:</b><br>ABC<br>60 sec stand<br>Chair climbing                             | Physical functional ability                | Change assessment  |
| <b>Protocol:</b><br>Health 5 Test<br>60 sec stand<br>Balance assessment<br>30 sec sit | Quality of life<br>HRV<br>Balance<br>Speed | Composite score of activities<br>Respective joint pain                                 |

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**Page 82**      **Assessing fatigue**

- Piper fatigue scale:
  - Used in research
  - Assesses fatigue beyond the norm
  - Assesses four dimensions of subjective fatigue: behavioural/severity (2-7); affective meaning (5 items: # 8-12); sensory (5 items: # 13-17); and cognitive/mood (6 items: # 18-23)

Plus 5 qualitative questions

• Piper BF, Dibble SL, Dodd MJ, Weiss MC, Slaughter RE, Paul SM. The revised Piper Fatigue Scale: psychometric evaluation in women with breast cancer. *Oncol Nurs Forum.* 1998 May;25(4):677-84.

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**Page 67-88**      **Psychological health**

- General Health Questionnaire
  - [www.gi-assessment.co.uk/health.../products/general-health-questionnaire-0](http://www.gi-assessment.co.uk/health.../products/general-health-questionnaire-0)
- Patient Health Questionnaire
  - [www.cqaimh.org/pdf/tool\\_phq9.pdf](http://www.cqaimh.org/pdf/tool_phq9.pdf)

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### Considerations

- Client may be in a debilitated condition
- Treatment therapy may mean more weakness, pain and lost motivation on certain days
- Be aware of tumour and treatment sites
- Take care of Hickman catheters, Port-a-caths and other access lines
- Remember hydration
- Consider co-morbidities before testing.

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### Considerations

- Is exercise safe?
- Is a supervised exercise programme appropriate?
- What are the goals of the exercise programme?
- What particular aspects of their cancer or/and treatments could affect the exercise abilities?
- What extra monitoring is required?

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### Red Flags

- **Neurology:**
- Sudden loss of sensation
- Unexplained weakness,
- Pins and needles / numbness down a limb
- Seizure (fitting) or collapse
- Confusion or disorientation
- Loss of vision
- Persistent headaches

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### Red Flags



- **Cardio-respiratory:**
- Sudden unexplained breathlessness (Pulmonary embolism?)
- Central chest pain particularly if radiating down the arm or up into the neck (Angina?)
- **Peripheral vessels:**
- A swollen leg, especially if hot and tender (DVT?)
- Sudden onset of a cold pale leg/arm (arterial embolus)

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### Red Flags



- **Bony disease:**
- Sudden or severe pain in the back, ribs or long bones (this is distinct from joint pains, which although uncomfortable do not have the same connotations)
- New deformity of the limb
- Unexplained excessive thirst
- **Blood disorders:**
- Symptoms of infection; Fever, malaise burning passing urine, coughing up green sputum
- Anaemia; looking very pale, dizzy when standing, excessive breathlessness on minimal exertion
- Low platelets; unexplained bruising, nose bleeds.

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### Task



- Decide in your group which assessments you would carry out for your given example.

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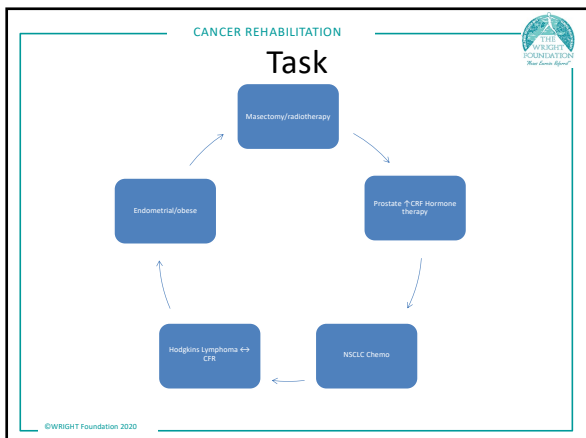
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