## APPENDIX A.
**Gait Assessment and Intervention Tool (G.A.I.T.)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Examiner</th>
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<tbody>
<tr>
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**Diagnosis** ____________________  **Limb assessed** _____  **Device/Orthosis/Assist** ____________________________

### Stance and Swing Phases

<table>
<thead>
<tr>
<th>Score</th>
<th>1. Shoulder position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal.</td>
</tr>
<tr>
<td></td>
<td>1 = abnormal position (check all that apply ___ depressed, ___ elevated, ___ retracted, or ___ protracted).</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Score</th>
<th>2. Elbow flexion</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0 = &lt; 45° (normal = ~ 10°).</td>
</tr>
<tr>
<td></td>
<td>1 = 45 – 90° elbow flexion.</td>
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<tr>
<td></td>
<td>2 = &gt; 90° elbow flexion.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>3. Arm swing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal.</td>
</tr>
<tr>
<td></td>
<td>1 = abnormal – reduced or absent arm swing.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Score</th>
<th>4. Trunk alignment (Static)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal erect posture (absence of flexion, extension or lateral flexion).</td>
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<tr>
<td></td>
<td>1 = trunk statically in ___ flexion or ___ extension.</td>
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<tr>
<td></td>
<td>2 = trunk statically in lateral flexion to the ___ right or ___ left.</td>
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<tr>
<td></td>
<td>3 = trunk in both ___ flexion or ___ extension, &amp; lateral flexion to ___ right or ___ left.</td>
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</tbody>
</table>

### Stance Phase

<table>
<thead>
<tr>
<th>Score</th>
<th>5. Trunk posture/movement (Dynamic) (sagittal plane) (lateral view)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal (static trunk alignment maintained).</td>
</tr>
<tr>
<td></td>
<td>1 = trunk ___ flexes or ___ extends (check one) &lt; 30°.</td>
</tr>
<tr>
<td></td>
<td>2 = trunk ___ flexes or ___ extends (check one) 30° or more.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>6. Trunk posture/movement (Dynamic) (coronal plane) (front/back view)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal (static trunk alignment maintained).</td>
</tr>
<tr>
<td></td>
<td>1 = trunk laterally flexes to ___ right or to ___ left (check one) &lt; 30°.</td>
</tr>
<tr>
<td></td>
<td>2 = trunk laterally flexes to ___ right or to ___ left (check one) 30° or more.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>7. Weight shift (lateral displacement of head, trunk and pelvis) (coronal plane) (front/back view)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal weight shift (~ 25 mm shift over stance limb).</td>
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<tr>
<td></td>
<td>1 = reduced weight shift.</td>
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<tr>
<td></td>
<td>2 = almost none or no weight shift.</td>
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<tr>
<td></td>
<td>2 = excessive weight shift.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Score</th>
<th>8. Pelvic position (coronal plane) (front/back view)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal (no Trendelenberg sign)</td>
</tr>
<tr>
<td></td>
<td>1 = mild pelvic drop on contralateral side.</td>
</tr>
<tr>
<td></td>
<td>2 = severe or abrupt pelvic drop on contralateral side.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>9. Hip extension (sagittal plane) (lateral view)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal (moves from 30° of hip flexion at initial contact to neutral by midstance, then to 20° of extension past neutral in terminal stance).</td>
</tr>
<tr>
<td></td>
<td>1 = hip extends to neutral by midstance but lacks further hip extension during terminal stance.</td>
</tr>
<tr>
<td></td>
<td>2 = abnormal throughout stance (hip remains in flexion or marked extension).</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>10. Hip rotation (coronal plane) (front/back view)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = normal (remains in neutral)</td>
</tr>
<tr>
<td></td>
<td>1 = abnormal, internal rotation</td>
</tr>
<tr>
<td></td>
<td>1 = abnormal, external rotation</td>
</tr>
</tbody>
</table>
11. Knee – initial contact phase (sagittal plane) (lateral view). Choose __ A or __ B (check selection) _____
   A. Knee flexion
      0 = normal (knee in neutral/not hyperextended).
      1 = 5° – 15° knee flexion.
      2 = > 15°, but < 30° knee flexion.
      3 = > 30° knee flexion.
   B. Knee extension
      0 = normal (knee in neutral/not in flexion).
      1 = 5° – 15° knee hyperextension.
      2 = > 15° up to 30° knee hyperextension.
      3 = > 30° knee hyperextension.

   A. Knee flexion
      0 = normal (up to 15° knee flexion).
      1 = > 15°, but < 30° knee flexion.
      2 = ≥ 30° knee flexion
   B. Knee extension
      0 = normal (up to 15° knee flexion).
      1 = no knee flexion, up to 15° knee hyperextension.
      2 = ≥ 15° knee hyperextension.

   A. Knee flexion
      0 = normal (knee in 4° flexion at heel strike, increasing to 15° flexion at 14% of gait cycle).
      1 = 5 – 15° flexion throughout midstance; does not achieve neutral at midstance.
      2 = > 15°, but < 30° knee flexion
      3 = ≥ 30° knee flexion.
   B. Knee extension
      0 = normal (knee in 4° flexion at heel strike, increasing to 15° flexion at 14% of gait cycle).
      1 = knee extended through midstance phase; not hyperextended.
      2 = up to 15° knee hyperextension during midstance phase.
      3 = > 15° knee hyperextension during midstance phase.
   C. Knee flexion moving to extension
      0 = normal (knee in 4° flexion at heel strike, increasing to 15° flexion at 14% of gait cycle).
      1 = normal knee flexion during early midstance phase, then knee extends to neutral.
      2 = knee flexion during early midstance phase, then knee extends to full extension range (neutral or beyond) in uncontrolled manner, but not snapping back.
      3 = knee in flexion during early midstance phase, then knee abruptly and forcefully extends into end range in an uncontrolled manner.
   D. Knee extension moving to flexion
      0 = normal (knee in 4° flexion at heel strike, increasing to 15° flexion at 14% of gait cycle).
      1 = knee remains in extension in early midstance, then knee flexes late, but retains control.
      2 = knee remains in extension in early midstance, then knee flexes, losing control and regaining control.
      3 = knee remains in extension in early midstance, then knee buckles with failure to regain control and requires use of compensatory strategies.

14. Knee – terminal stance phase/pre-swing phase (heel-rise to toe-off) (sagittal plane) (lateral view) _____
   0 = normal (knee flexion position in sagittal plane 35 – 45°).
   1 = knee flexes < 35° or > 45°.
   2 = knee flexes 35 – 45°, then extends.
   3 = knee remains in full extension throughout.
15. Ankle movement (sagittal plane) (lateral view). Choose __ A or __ B. (Check selection).  

A. Ankle plantar flexion  
0 = normal (from ankle neutral position at initial heel contact, moving to 10° plantarflexion before midstance, then moving to 10° dorsiflexion at heel off).  
1 = normal from initial contact (with heel strike) to midstance, but in plantarflexion after midstance.  
1 = foot flat at initial contact, moving to slight plantarflexion before midstance, but in plantarflexion after midstance.  
2 = foot flat at initial contact with plantarflexion to heel off.  
3 = no heel contact with excessive plantarflexion to heel off.  
3 = either heel contact or no heel contact followed by excessive and/or early (midstance) plantarflexion (i.e. vaulting).  

B. Ankle dorsiflexion  
0 = normal (from ankle neutral position at initial heel contact, moving to 10° plantarflexion before midstance, then moving to 10° dorsiflexion at heel off).  
1 = normal just prior to midstance, but > 10° dorsiflexion after midstance  
2 = 15 – 20° dorsiflexion at midstance and to terminal stance (heel off).  
3 = excessive ankle dorsiflexion (> 20°) throughout stance.

16. Ankle inversion (coronal plane) (front/back view)  
0 = normal (slight inversion/supination at initial stance; then eversion/pronation until heel-off).  
1 = excessive ankle inversion/supination present at initial contact.  
2 = excessive ankle inversion/supination present at initial contact and at midstance.  
3 = excessive ankle inversion/supination throughout stance.

17. Plantarflexion during terminal stance/pre-swing (heel-rise to toe-off) (sagittal plane) (lateral view)  
0 = normal (adequate push-off at pre-swing for moving from dorsiflexion position to 10° plantarflexion.  
1 = partial/weak push-off while moving into plantarflexion at toe-off.  
2 = absent/lack of plantarflexion; no push-off.

18. Toe position (sagittal plane) (lateral view)  
0 = normal (toes in neutral position)  
1 = excessive toe extension.  
1 = clawing.

**Swing Phase**

19. Trunk posture/movement (Dynamic) (sagittal plane) (lateral view)  
0 = normal (static trunk alignment maintained).  
1 = trunk ___ flexes or ___ extends (check one) < 30°.  
2 = trunk ___ flexes or ___ extends (check one) 30° or more.

20. Trunk posture/movement (Dynamic) (coronal plane) (front/back view)  
0 = normal (static trunk alignment maintained).  
1 = trunk laterally flexes to ___ right or to ___ left (check one) < 30°.  
2 = trunk laterally flexes to ___ right or to ___ left (check one) 30° or more.

21. Pelvic position (coronal plane) (front/back view)  
0 = normal (relatively level pelvis or slightly lower on swing side).  
1 = mild hip hiking.  
2 = moderate to severe hip hiking.

22. Pelvic position (sagittal plane) (lateral view)  
0 = normal (neutral position with respect to anterior or posterior tilt).  
1 = anterior pelvic tilt.  
1 = posterior pelvic tilt.
23. Pelvic rotation as limb swings forward (transverse plane) (top view)  
    0 = normal (from 5° backward rotation at initiation of swing to 5° forward rotation by terminal swing)  
    1 = reduced pelvic rotation.  
    2 = absent pelvic rotation.  

24. Hip flexion (sagittal plane) (lateral view)  
    0 = normal (0° hip flexion at initial swing to ~35° at peak, then reducing to ~25° at terminal swing; hip neutral with respect to hip abduction/adduction).  
    1 = hip begins swing in flexion, but reaches normal peak.  
    2 = >10°, but <30° hip flexion peak in the sagittal plane.  
    3 = >10°, but <30° hip flexion peak, and with hip abduction (e.g. = circumduction).  
    4 = >10°, but <30° hip flexion peak, and with hip adduction (e.g. = scissoring).  
    5 = 0 to 10° hip flexion throughout swing.  
    6 = >35° hip flexion (excessive hip flexion).  

25. Hip rotation (coronal plane) (front/back view)  
    0 = normal (remains in neutral)  
    1 = abnormal, internal rotation  
    2 = abnormal, external rotation  

26. Knee – initial swing (sagittal plane) (lateral view)  
    0 = normal (40–60° of knee flexion).  
    1 = at least 15° knee flexion, but <40° knee flexion.  
    2 = <15° knee flexion.  
    3 = knee never flexes.  

27. Knee – midswing (sagittal plane) (lateral view)  
    0 = normal (60° knee flexion ± 4°.  
    1 = 45° - 55° knee flexion.  
    2 = 25° - 45° knee flexion.  
    3 = 0 to 25° knee flexion.  

28. Knee – terminal swing (sagittal plane) (lateral view)  
    0 = normal (from knee flexed position to full knee extension).  
    1 = from knee flexed position, remaining in knee flexion throughout.  
    2 = from knee extension position, remaining in knee extension throughout.  

29. Ankle movement (sagittal plane) (lateral view)  
    0 = normal (from initial plantarflexion at terminal stance [toe-off] to neutral by midswing, then slight dorsiflexion just prior to initial contact in stance).  
    1 = midswing ankle neutral but no terminal swing dorsiflexion.  
    2 = no midswing ankle neutral and no terminal swing dorsiflexion; plantarflexion throughout.  

30. Ankle inversion (coronal plane) (front/back view)  
    0 = normal (ankle remains in neutral regarding inversion/eversion).  
    1 = ankle in inverted position during swing.  

31. Toe position (sagittal plane) (lateral view)  
    0 = normal (toes in neutral position)  
    1 = inadequate toe extension.  
    2 = clawing.  

Total Score _______ / 62

Comments: