APPENDIX 2: Motomed Letto 2 Cycling Protocol

Cycling will be performed for 45 minutes per session using the Motomed Letto 2 cycle.

How to Detect Active Cycling (all criteria are required to occur simultaneously):
1. Active cycling time will be displayed on screen
2. While patient is actively cycling, there is a moving bike icon on the screen
3. While patient is actively cycling, actual cycling speed displayed on screen is greater than the default setting of 10 or 25 rpm

Training will occur in 3 Phases according to the 3 Steps below:

I: ASSESSMENT PHASE (10 minutes):
1. Using the following Initial Settings:
   Spasm control: off; Default speed: 10 rpm
2. Initial gear setting: 0 (this is default gear)
3. Vigorously verbally encourage the patient to cycle – the goal is to maximize the duration that the patient spends actively cycling.
4. At the end of 10 minute interval, determine the duration of active cycling
   a. if >5 minutes, move to Active Interval 1 [Step IIA (2)]
   b. if <5 minutes, move to Assisted Interval 1 [Step IIB (2)].

IIA: ACTIVE INTERVALS (3 intervals of 10 minutes each; 30 minutes total):
1. Vigorously verbally encourage the patient to actively cycle during all intervals.
2. Active Interval 1 (10 minutes): Select the gear
   a. Start at Gear 1 If today is the first day of the intervention OR
   b. Start at Gear 1 If the highest gear achieved for >5 minutes in one interval on the prior day’s intervention was ≤2 OR
   c. Start at one gear lower than the highest gear achieved for >5 minutes in one interval on the prior day’s intervention when the highest gear achieved was ≥3 (i.e. Yesterday patient cycled at gear 5 for 6 minutes, today patient starts at gear 4)
3. At the end of 10 minute interval, determine duration of active cycling during this interval using this calculation:
   Cumulative Active Cycling Minutes at end of current interval MINUS Cumulative Active Cycling Minutes at end of prior interval
4. If the duration of active cycling is:
   a. >5 minutes, move to Active Interval 2 [Step IIA (5)].
   b. ≤5 minutes, move to Assisted Interval 2-A [Step IIB (3)].
5. Active Interval 2 (10 minutes): Increase the Gear by 1 for and repeat step (3). If the duration of active cycling is:
   a. >5 minutes, move to Active Interval 3-A [Step IIA (6)].
   b. ≤5 minutes, move to Assisted Interval 3-A [Step IIB (5)]
6. Active Interval 3A (10 minutes): Increase the Gear by 1 and repeat step (3).
7. Active Interval 3B (10 minutes): Select the gear
   a. Start at Gear 1 If today is the first day of the intervention OR
   b. Start at Gear 1 If the highest gear achieved for >5 minutes in one interval on the prior day’s intervention was ≤2 OR
   c. Start at one gear lower than the highest gear achieved for >5 minutes in one interval on the prior day’s intervention when the highest gear achieved was ≥3 (i.e. Yesterday patient cycled at gear 5 for 6 minutes, today patient starts at gear 4)

IIB: ASSISTED INTERVALS (3 intervals of 10 minutes each; 30 minutes total):
1. Vigorously verbally encourage the patient to actively cycle during all intervals
2. Assisted Interval 1 (10 minutes):
   a. Increase speed to 25 RPM with Gear set at 0
   b. Do not assess for active cycling
   c. Move to Assisted Interval 2-B [Step IIB (5)]
3. Assisted Interval 2-A (10 minutes):
   a. Keep speed at 10 RPM
   b. Decrease gear by 1.
4. Determine duration of active cycling [as defined in Step IIA (3) above]. If duration of active cycling is:
   i. >5 minutes, move to Active Interval 3-A [Step IIA (6)]
(5) **Assisted Interval 2-B (10 minutes):**
   a) Decrease speed to 10 RPM
   b) Keep gear at 0.
   c) Determine duration of active cycling [as defined in *Step IIA (3)* above]. If duration of active cycling is:
      i.  >5 minutes, move to **Active Interval 3-B [Step IIA (7)]**
      ii. ≤5 minutes, move to **Assisted Interval 3B [Step IIB (7)]**

(6) **Assisted Interval 3A (10 minutes):**
   a) Decrease Gear by 1
   b) If already at Gear 0, then increase speed to 25 RPM

(7) **Assisted Interval 3B (10 minutes):**
   a) Increase speed to 25 RPM with Gear set at 0.

**III: COOL DOWN Phase (5 minutes):**
(1) Revert to Initial Settings (spasm control off; 10 RPM, gear set at 0).
(2) Encourage slow-paced active cycling.
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Starting Gear:
If today is the first day of the intervention, use Gear 1; Otherwise:

<table>
<thead>
<tr>
<th>Highest gear achieved &gt;5 min. during a completed 10 min. active interval on prior day</th>
<th>Starting gear</th>
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**Vigorously verbally encourage the patient to actively cycle during each interval**

**Assessment Phase**
- Gear 0
- Speed: 10 RPM
- 10 minutes

Active Cycling >5 minutes?

**Active Interval 1**
- Gear: See below for Starting Gear*
- 10 minutes

Active Cycling >5 minutes?

**Active Interval 2**
- Gear: Increase Gear setting by 1
- 10 minutes

Active Cycling >5 minutes?

**Active Interval 3-A**
- Gear: Increase by 1
- 10 minutes

**Active Interval 3-B**
- Gear: Decrease by 1
- If already at Gear 0, Change to 25 RPM
- 10 minutes

**Assisted Interval 1**
- Gear 0
- Speed: Change to 25 RPM

Do not assess for active cycling

**Assisted Interval 2-A**
- Gear: Decrease Gear setting by 1
- 10 minutes

**Assisted Interval 2-B**
- Gear 0
- Speed: Change to 10 RPM
- 10 minutes

**Assisted Interval 3-A**
- Gear: Decrease by 1
- 10 minutes

**Assisted Interval 3-B**
- Gear: See below for Starting Gear*
- 10 minutes

**Cool Down Interval**
- Gear 0
- Speed: 10 RPM
- 5 minutes

*Starting Gear:
If today is the first day of the intervention, use Gear 1; Otherwise: