Supplemental Table S1: Outline of exercise streams and running programs prescribed during each level of the intersegmental rehabilitation program

| LEVEL 1 | Stream                    | Segment                  | Target                                      | set | reps |
|---------|---------------------------|--------------------------|---------------------------------------------|-----|------|
| Control | Hip flexor holds          | Pelvis on femur          | Isometric inner range hip flexion           | 3   | 8    |
|         | Palloff press             | Thorax on pelvis/pelvis on femur | Unilateral obliques                        | 3   | 8    |
|         | Deadbugs                  | Thorax on pelvis/pelvis on femur | Bilateral obliques                        | 3   | 8    |
|         | Hip hitch                 | Pelvis on femur          | Inner range hip abduction                   | 3   | 8    |
|         | Banded turn outs          | Pelvis on femur          | Hip external rotation/abduction             | 3   | 8    |
| Strength| Single leg hip thrust     | Thorax on pelvis/pelvis on femur | Single leg hip extension                    | 3   | 8    |
|         | Front squat               | Multi-segmental          | Front squat                                 | 3   | 8    |
|         | Deadlift                  | Multi-segmental          | Deadlift                                    | 3   | 8    |
|         | Split squat               | Multi-segmental          | Split Squat                                 | 3   | 8    |
| Power   | Ankling                   | Multi-segmental          | Reactive strength                           | 4   | 10   |

Progression criteria - pain-free crossover test

| LEVEL 2 | Completed prior to Run A and B |
|---------|--------------------------------|
|         | Switch step                    | Multi-segmental          | Lateral hip RFD                            | 3   | 3    |
|         | Vertical skips                 | Multi-segmental          | Vertical plyometric                         | 4   | 20   |
|         | Resisted box lunge             | Multi-segmental          | Horizontal RFD                             | 3   | 3    |

Progression criteria - symmetrical hip flexion (90°)/IR range, pain-free squeeze (45° hip flexion) and completion Run A program

| LEVEL 3 | Completed prior to Run B |
|---------|--------------------------|
|         | Lateral jump/land        | Multi-segmental          | Lateral deceleration RFD                   | 3   | 3    |
|         | Side shuffle cut         | Multi-segmental          | Lateral reactive strength                  | 3   | 3    |
|         | 180° cut                 | Multi-segmental          | RFD + deceleration/reacceleration          | 3   | 3    |

RTP Criteria – pain-free completion Run B program and multi-directional drills

(continued)
### Run A (Level 2)

| Warm-up   | Distance (m) | Time (sec) | Speed (km/h) | Sets | Reps | Work:Rest ratio | Speed Distance (m) | Total Distance (m) |
|------------|--------------|------------|--------------|------|------|-----------------|-------------------|-------------------|
| Linear exercise drills | 400          | 50%        | 1            | 2    | 1:1  | 0               | 800               |
| Session 1  | 20/80/20     | 24         | 12           | 2    | 8    | 1:2             | 1920              | 2720              |
| Session 2  | 20/80/20     | 24         | 12           | 2    | 10   | 1:2             | 2400              | 3200              |
| Session 3  | 20/80/20     | 21         | 14           | 2    | 10   | 1:2             | 2400              | 3200              |
| Session 4  | 20/80/20     | 21         | 14           | 3    | 8    | 1:2             | 2800              | 3400              |
| Session 5  | 20/80/20     | 19         | 16           | 3    | 8    | 1:2             | 2880              | 3480              |
| Session 6  | 20/80/20     | 17         | 18           | 3    | 8    | 1:2             | 2880              | 3480              |

### Run B (Level 3)

| Warm-up   | Distance (m) | Time (sec) | Speed (km/h) | Sets | Reps | Work:Rest ratio | Speed Distance (m) | Total Distance (m) |
|------------|--------------|------------|--------------|------|------|-----------------|-------------------|-------------------|
| Linear exercise drills | 400          | 50%        | 1            | 2    | 1:1  | 0               | 800               |
| Multi-directional exercise drills |               |            |              |      |      |                 |                   |
| Session 1  | Sprints (rolling start) | 30         | 7           | 18   | 3    | 1:10            | 180               | 2420              |
|            | Intervals     | 80         | 25-22       | 14-16| 6    | 1:1             | 1440              | 2420              |
| Session 2  | Sprints (rolling start) | 30         | 6           | 20-22| 3    | 1:10            | 180               |                   |
|            | Intervals     | 80         | 25-22       | 14-16| 6    | 1:1             | 1440              | 2420              |
| Session 3  | Sprints (rolling start) | 30         | 6           | 20-22| 5    | 1:10            | 300               |                   |
|            | Intervals     | 80         | 25-22       | 14-16| 6    | 1:1             | 1440              | 2540              |
| Session 4  | Sprints (standing start) | 30         | 6           | 20-22| 5    | 1:10            | 300               |                   |
|            | Intervals     | 80         | 25-22       | 14-16| 6    | 1:1             | 1920              | 3020              |
| Session 5  | Sprints (rolling start) | 30         | 5           | 24-26| 5    | 1:10            | 300               |                   |
|            | Intervals     | 80         | 25-22       | 14-16| 6    | 1:1             | 1920              | 3020              |
| Session 6  | Sprints (standing start) | 30         | 5           | 24-26| 5    | 1:10            | 300               |                   |
|            | Intervals     | 80         | 25-22       | 14-16| 6    | 1:1             | 1920              | 3020              |

RFD – rate of force development, IR – internal rotation, RTP – return to play