



## **Aggressive ACL-reconstruction protocol for MR Functional Squat System:**

It gives an idea of our protocol for an aggressive treatment for an ACL-reconstruction treatment. The accelerated and the conservative treatment protocol we use is basically the same workload only spread over a longer time period respectively 6-8 months and 1 year.

### **Maximal protection phase**

Goal: R.O.M.; full extension and 120 degrees flexion.

Gate without crutches.

Dynamic Stability for limiting daily life activities.

Reactive Neuromuscular Training, Reprogramming, Coordination and Proprioception is where the emphasis lies in this phase.

### **Week 1: (optimal extension/ flexion)**

5x 20 reps 5-10kg 2 legs from 90 degrees of flexion till full extension. Within pain limits.

### **Week 2: (full extension/ 90 degrees flexion)**

5x20 reps 15-20 kg 2 legs emphasis controlled full extension.

### **Week 3:**

F6 isometric gate 5x70 seconds with 40 sec. rest 2 legs with 15-20 kg., slow speed.

5x12 reps 5-10kg 1 leg.

### **Week 4: (full extension / 110 degrees flexion)**

F6 20kg 2 legs, isometric gate and controlled route, 70 sec. with 40 sec. rest, slow speed.

5x12 reps 10kg 1 leg.

### **Week 5:**

F6 20-25 kg, 2 legs, isometric gate, controlled route, 6 series, 70 sec., 30 sec rest, normal speed.

F6 5-10 kg, 1 leg isometric gate, 5series, 70 sec. with 40 sec. rest, slow speed.

### **Week 6: (full extension / 120 degrees flexion)**

F6 25-30kg, 2 legs, isometric gate, controlled route, random explosion, 6 series, 70 sec., 30 sec rest, normal speed.

F6 10-15 kg 1 leg, isometric gate, controlled route, 5 series, 70 sec., 30 sec. rest, slow speed.

Coordination test: 10kg

Proprioception test: both legs, 10 kg

Response Time Test.: 10 kg



### **Moderate activity phase**

Goal: full extension and 140 degrees flexion

Full daily activity

Non excessive jogging

Strength Endurance, Coordination, Proprioception, .

#### **Week 7:**

F5 2 legs 30-35kg, concentric 14cm/s speed, eccentric 6 cm/s speed. 5x15, 40 sec. rest.

1 leg 10-15 kg the same.

#### **Week 8:**

F6 1 leg, 15-20 kg, controlled route, isometric gate, controlled position. 6 series, 80sec., 30 sec. rest, normal speed.

Functional Endurance test 15 kg 20 reps.

#### **Week 9:**

F6 1 leg 25kg, controlled route, isometric gate, controlled position, 6 series, 70sec. 40 sec. rest, normal speed.

F5 1 leg 20kg concentric 15 cm/s, eccentric 5cm/s 5x15, 40 sec. rest.

### **Full daily activity phase**

Agility Drills, Acceleration, Deceleration, Dynamic Stabilization.

#### **Week 10:**

F6 1 leg 25-30 kg, controlled route, isometric gate, random explosion, 6 series 80 sec., 30 sec rest, normal speed.

F5 40-50kg, 5x20 reps, 2 legs, concentric 15 cm/s, eccentric 8 cm/s.

#### **Week 11:**

Isometric exercise, 1 leg, 100-120 degrees, level 1.

F6 1 leg 25-30 kg, controlled route, isometric gate, random explosion, 6 series 80 sec., 30 sec rest, normal speed.

#### **Week 12:**

Coordination test, 10 kg.

Functional Endurance Test, 20 reps 20-25 kg.

Proprioception Test, 10 kg both legs.

Isometric training, 90-100 degrees flexion level 2 – 3.

F5 1 leg 25 kg., 5x15 reps, 40 sec. rest, concentric 15cm/s, eccentric 5 cm/s.

F6 1 leg 30-35 kg., isometric gate, controlled route, controlled position, 6 series, 90 sec., 40 sec. rest, normal speed.



**Week 13:**

F6 2 legs 40-50 kg, controlled route, isometric gate, controlled position. 6 series 70 sec., 40 sec. rest, fast speed.

F6 1 leg, isometric gate, random explosion, 30 kg, 80 sec., 30 sec rest, fast speed.

**Sport specific phase**

Goal: Recreative sport

Jogging/ Running/ Cycling

Explosive strength, isokinetic training, Plyometrics.

**Week 14:**

F5 1 leg / 2 legs, 25-30 kg / 40-50 kg, concentric 15 cm/s, eccentric 5-6 cm/sec.

F6 1 leg, 30-35 kg, controlled position, isometric gate, random explosion, 70 sec., 40 sec rest, fast speed.

**Week 15:**

Isometric training, 90-100 degrees, level 3.

F6 1 leg, controlled position, isometric gate, controlled route, 35 kg, 90 sec., 40 sec. rest, fast speed.

**Week 16:**

Coordination test, 10kg.

Functional Endurance test, 25 kg 20 reps.

Functional Endurance Test 40 kg (depending bodyweight) 5 reps.

Proprioception Test 10 kg both legs.

Response Time test, 10 kg.

F5 2 legs / 1 leg, 45-60 kg / 30-35 kg, concentric 15 cm/sec, eccentric 5 cm/sec.

F6 1 leg, controlled position, isometric gate, controlled route, 35-40 kg, 90 sec., 40 sec. rest, fast speed.