

The Score of Marshall et al for Follow-up Evaluation of Athletes After Knee Ligament Surgery

Overview: Marshall et al developed a scoring system for the followup evaluation of athletes after knee ligament surgery. This can help monitor recovery and improvement in function after surgery. The authors are from the Hospital for Special Surgery in New York City.

Parameters:

- (1) pain
- (2) swelling
- (3) using stairs
- (4) clicking and/or numbness
- (5) giving way
- (6) return to sports/work
- (7) functional tests: duck walk run in place jump on one leg half squat full squat
- (8) specific knee examinations: tenderness joint effusion swelling of soft tissue crepitations muscle power
- (9) thigh sizes
- (10) range of motion
- (11) stability of LCL (lateral collateral ligament)
- (12) stability of MCL (medial collateral ligament)
- (13) stability of ACL (anterior cruciate ligament)
- (14) stability of PCL (posterior cruciate ligament)

Parameter	Finding	Points
pain	no	1
	yes	0
swelling	no	1
	yes	0
difficulty with stairs	no	1
	yes	0
clicking and/or numbness	no	1
	yes	0

giving way	regularly during daily activities	0
	with stress upon daily activities	1
	with stress only	2
	none	4
return to sports or work	no return	0
	return to different sport or work	1
	return to original sport or work but with limitations	2
	full return	3
duck walk	cannot perform	0
	can perform but with discomfort	1
	can perform	2
run in place	cannot do	0
	can	1
jump on 1 leg	cannot perform	0
	can perform but with discomfort	1
	can perform	2
half squat	cannot do	0
	can	1
full squat	cannot do	0
	can	1
tenderness	no	1
	yes	0
joint effusion	no	1
	yes	0
swelling of soft tissue	no	1
	yes	0
creptitations	no	1
	yes	0

muscle power	very weak	0
	diminished flexion AND extension	1
	diminished flexion OR extension	2
	normal	3
thigh size	> 2 cm difference	0
	1 – 2 cm difference	1
	equal (< 1 cm)	2
range of motion	< 90°	0
	limited flexion AND extension	1
	limited flexion OR extension	2
	normal	3
stability LCL	gross instability	0
	instability in flexion and extension	2
	moderate instability in flexion	3
	mild instability in flexion	4
	normal	5
stability of MCL	gross instability	0
	instability in flexion and extension	2
	moderate instability in flexion	3
	mild instability in flexion	4
	normal	5
stability of ACL	severe instability in neutral and rotation	0
	severe instability in neutral	2
	moderate jog	3
	slight jog	4
	normal	5
stability of PCL	severe instability in neutral and rotation	0
	severe in neutral	2

	moderate jog	3
	slight jog	4
	normal	5

where:

- Normal for the ligament stability is based on the unaffected knee (if there is one).
- Rotation tests for the cruciate ligaments include the Pivot shift Slocum and jerk test.
- My guess is that "moderate jog" indicates moderate instability when jogging.

score = SUM(points for all parameters)

Interpretation:

- minimum score: 0
- maximum score: 50
- The higher the score the more normal the knee.
- The lower the score the less likely that the person can participate in most sports.

References:

Marshall JL Fetto JF Botero PM. Knee ligament injuries. Clin Orthopaedics and Related Research. 1977; 123: 115-129. (Figure 2A-E page 125)

Tegner Y Lysholm J. Rating systems in the evaluation of knee ligament injuries. Clin Orthopaedics and Related Research. 1985; 198: 43-49. (Table 2 page 45).