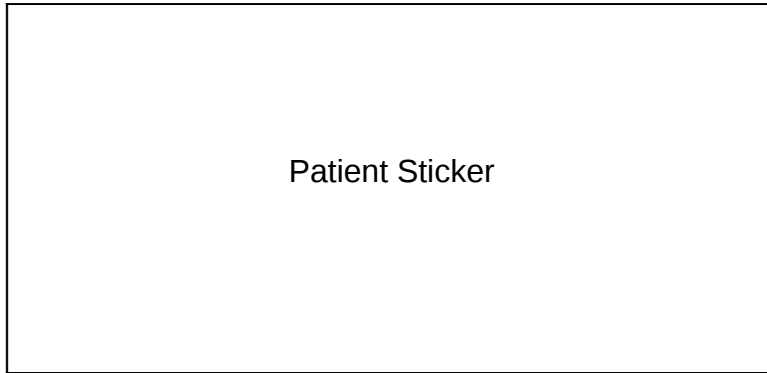


## MPFL Reconstruction – Patient Assessment and Progress Sheet



Thank you for taking the time to answer these questions which should only take a few minutes. The answers you give are very useful as they will help us assess your progress following your surgery. If you have any difficulties with the questions please feel free to ask a member of staff for help.

Once you have filled in the form please hand it to the nurse or doctor in clinic and they will file it in your notes

Mr Dipak Raj  
Consultant Lower Limb Orthopaedic Surgeon  
Pilgrim Hospital, Boston PE21 9QS England

NHS secretary 01205 446415  
Private secretary 0845 6439597 (local call rate), E mail: [contact@medskills.co.uk](mailto:contact@medskills.co.uk)

Date Today			
Your Age			
Your Occupation			
Date of Injury			
Side of injury (left or right)			
If you smoke, how many a day?			
Your Weight		BMI	
Your Height		ASA	

**MPFL Reconstruction – Patient Assessment and Progress Sheet**  
**The Tegner Activity Score**

**Please Tick the maximum activity level which best describes you...**

	Pre Injury	Pre Surgery	Post Surgery	
10				<u>Competitive sports</u> - soccer, football, rugby (national elite)
9				<u>Competitive sports</u> - soccer, football, rugby (lower divisions), ice hockey, wrestling, gymnastics, basketball
8				<u>Competitive sports</u> - racquetball or bandy, squash or badminton, track and field athletics (jumping, etc.), down-hill skiing
7				<u>Competitive sports</u> - tennis, running, motorcars speedway, handball <u>Recreational sports</u> - soccer, football, rugby, bandy, ice hockey, basketball, squash, racquetball, running
6				<u>Recreational sports</u> - tennis and badminton, handball, racquetball, down-hill skiing, jogging at least 5 times per week
5				<u>Work</u> - heavy labour (construction, etc.) <u>Competitive sports</u> - cycling, cross-country skiing, <u>Recreational sports</u> - jogging on uneven ground at least twice weekly
4				<u>Work</u> - moderately heavy labour (e.g. truck driving, etc.)
3				<u>Work</u> - light labour (nursing, etc.)
2				<u>Work</u> - light labour Walking on uneven ground possible, but impossible to back pack or hike
1				<u>Work</u> - sedentary (secretarial, etc.)
0				Sick leave or disability pension because of knee problems

## Kujala score

Knee: L/R

For each question, circle the latest choice (letter), which corresponds to your knee symptoms.

### 1. Limp

- (a) None (5)
- (b) Slight or periodical (3)
- (c) Constant (0)

### 2. Support

- (a) Full support without pain (5)
- (b) Painful (3)
- (c) Weight bearing impossible (0)

### 3. Walking

- (a) Unlimited (5)
- (b) More than 2 km (3)
- (c) 1-2 km (2)
- (d) Unable (0)

### 4. Stairs

- (a) No difficulty (10)
- (b) Slight pain when descending (8)
- (c) Pain both when descending and ascending (5)
- (d) Unable (0)

### 5. Squatting

- (a) No difficulty (5)
- (b) Repeated squatting painful (4)
- (c) Painful each time (3)
- (d) Possible with partial weight bearing (2)
- (e) Unable (0)

### 6. Running

- (a) No difficulty (10)
- (b) Pain after more than 2 km (8)
- (c) Slight pain from start (6)
- (d) Severe pain (3)
- (e) Unable (0)

### 7. Jumping

- (a) No difficulty (10)
- (b) Slight difficulty (7)
- (c) Constant pain (2)
- (d) Unable (0)

### 8. Prolonged sitting with the knees flexed

- (a) No difficulty (10)
- (b) Pain after exercise (8)
- (c) Constant pain (6)
- (d) Pain forces to extend knees temporarily (4)
- (e) Unable (0)

### 9. Pain

- (a) None (10)
- (b) Slight and occasional (8)
- (c) Interferes with sleep (6)
- (d) Occasionally severe (3)
- (e) Constant and severe (0)

### 10. Swelling

- (a) None (10)
- (b) After severe exertion (8)
- (c) After daily activities (6)
- (d) Every evening (4)
- (e) Constant (0)

### 11. Abnormal painful kneecap (patellar) movements (subluxations)

- (a) None (10)
- (b) Occasionally in sports activities (6)
- (c) Occasionally in daily activities (4)

## MPFL Reconstruction – Patient Assessment and Progress Sheet

(d) At least one documented dislocation (2)

(e) More than two dislocations (0)

### 12. Atrophy of thigh

(a) None (5)

(b) Slight (3)

(c) Severe (0)

### 13. Flexion deficiency

(a) None (5)

(b) Slight (3)

(c) Severe (0)

Reference: Kujala UM, Jaakkola LH, Koskinen SK, Taimela S, Hurme M, Nelimarkka O: **Scoring of patellofemoral disorders.** *Arthroscopy* 1993, **9**:159-163.

**MPFL Reconstruction – Patient Assessment and Progress Sheet**

Knee injury and Osteoarthritis Outcome Score (KOOS), English version LK1.0 1

**KOOS KNEE SURVEY**

**INSTRUCTIONS:** This survey asks for your view about your knee. This information will help us keep track of how you feel about your knee and how well you are able to perform your usual activities. Answer every question by ticking the appropriate box, only one box for each question. If you are unsure about how to answer a question, please give the best answer you can.

**Symptoms**

These questions should be answered thinking of your knee symptoms during the **last week**.

S1. Do you have swelling in your knee?

Never          Rarely          Sometimes          Often          Always

S2. Do you feel grinding, hear clicking or any other type of noise when your knee moves?

Never          Rarely          Sometimes          Often          Always

S3. Does your knee catch or hang up when moving?

Never          Rarely          Sometimes          Often          Always

S4. Can you straighten your knee fully?

Always          Often          Sometimes Rarely          Never

S5. Can you bend your knee fully?

Always          Often          Sometimes Rarely          Never

**Stiffness**

The following questions concern the amount of joint stiffness you have experienced during the **last week** in your knee. Stiffness is a sensation of restriction or slowness in the ease with which you move your knee joint.

S6. How severe is your knee joint stiffness after first wakening in the morning?

None          Mild          Moderate          Severe          Extreme

S7. How severe is your knee stiffness after sitting, lying or resting **later in the day**?

None          Mild          Moderate          Severe          Extreme

**Pain**

P1. How often do you experience knee pain?

**MPFL Reconstruction – Patient Assessment and Progress Sheet**

Never                      Monthly    Weekly    Daily            Always

What amount of knee pain have you experienced the **last week** during the following activities?

P2. Twisting/pivoting on your knee

None      Mild      Moderate    Severe      Extreme

P3. Straightening knee fully

None      Mild      Moderate    Severe      Extreme

P4. Bending knee fully

None      Mild      Moderate    Severe      Extreme

P5. Walking on flat surface

None      Mild      Moderate    Severe      Extreme

P6. Going up or down stairs

None      Mild      Moderate    Severe      Extreme

P7. At night while in bed

None      Mild      Moderate    Severe      Extreme

P8. Sitting or lying

None      Mild      Moderate    Severe      Extreme

P9. Standing upright

None      Mild      Moderate    Severe      Extreme

**Function, daily living**

The following questions concern your physical function. By this we mean your ability to move around and to look after yourself. For each of the following activities please indicate the degree of difficulty you have experienced in the **last week** due to your knee.

A1. Descending stairs

None      Mild      Moderate    Severe      Extreme

A2. Ascending stairs    None    Mild    Moderate    Severe      Extreme

For each of the following activities please indicate the degree of difficulty you have experienced in the **last week** due to your knee.

A3. Rising from sitting

None      Mild      Moderate    Severe      Extreme

A4. Standing

None      Mild      Moderate    Severe      Extreme

## MPFL Reconstruction – Patient Assessment and Progress Sheet

A5. Bending to floor/pick up an object

None Mild Moderate Severe Extreme

A6. Walking on flat surface

None Mild Moderate Severe Extreme

A7. Getting in/out of car

None Mild Moderate Severe Extreme

A8. Going shopping

None Mild Moderate Severe Extreme

A9. Putting on socks/stockings

None Mild Moderate Severe Extreme

A10. Rising from bed

None Mild Moderate Severe Extreme

A11. Taking off socks/stockings

None Mild Moderate Severe Extreme

A12. Lying in bed (turning over, maintaining knee position)

None Mild Moderate Severe Extreme

A13. Getting in/out of bath

None Mild Moderate Severe Extreme

A14. Sitting

None Mild Moderate Severe Extreme

A15. Getting on/off toilet

None Mild Moderate Severe Extreme

For each of the following activities please indicate the degree of difficulty you have experienced in the **last week** due to your knee.

A16. Heavy domestic duties (moving heavy boxes, scrubbing floors, etc)

None Mild Moderate Severe Extreme

A17. Light domestic duties (cooking, dusting, etc)

None Mild Moderate Severe Extreme

### Function, sports and recreational activities

The following questions concern your physical function when being active on a higher level. The questions should be answered thinking of what degree of difficulty you have experienced during

**MPFL Reconstruction** – Patient Assessment and Progress Sheet  
the **last week** due to your knee.

SP1. Squatting

None      Mild      Moderate      Severe      Extreme

SP2. Running

None      Mild      Moderate      Severe      Extreme

SP3. Jumping

None      Mild      Moderate      Severe      Extreme

SP4. Twisting/pivoting on your injured knee

None      Mild      Moderate      Severe      Extreme

SP5. Kneeling

None      Mild      Moderate      Severe      Extreme

**Quality of Life**

Q1. How often are you aware of your knee problem?

Never      Monthly      Weekly      Daily      Constantly

Q2. Have you modified your life style to avoid potentially damaging activities to your knee?

Not at all      Mildly      Moderately      Severely      Totally

Q3. How much are you troubled with lack of confidence in your knee?

Not at all      Mildly      Moderately      Severely      Extremely

Q4. In general, how much difficulty do you have with your knee?

None      Mild      Moderate      Severe      Extreme



# MPFL Reconstruction – Patient Assessment and Progress Sheet

## Tegner Lysholm Knee Scoring Scale

This questionnaire has been designed to give your therapist information as to how your knee pain has affected your ability to manage in everyday life. Please answer every question by placing a mark in the box that best describes your condition today.

During the past 4 weeks.....

<b>Section 1 –Limp</b>	<b>Section 2 –Support</b>
None	None
Slight or periodical	Stick or crutch
Severe and constant	Weight-bearing impossible

<b>Section 3 – Pain</b>	<b>Section 4 - Instability</b>
None	Never giving way
Inconstant and slight during severe exertion	Rarely during athletics or other severe exertion
Marked during severe exertion	Frequently during athletics or other severe exertion (or incapable of participation)
Marked on or after walking more than 2 km	Occasionally in daily activities
Marked on or after walking less than 2 km	Often in daily activities
Constant	Every step

<b>Section 5 –Locking</b>	<b>Section 6 - Swelling</b>
No locking and no catching sensations	None
Catching sensation but no locking	On severe exertion
Locking Occasionally	On ordinary exertion
Frequently	Constant
Locked joint on examination	

<b>Section 7 - Stair-climbing</b>	<b>Section 8 - Squatting</b>
No problems	No problems
Slightly impaired	Slightly impaired
One step at a time	Not beyond 90°
Impossible	Impossible

**TOTAL \_\_\_\_\_/100**

INSTRUCTIONS: Please place an X on the line to indicate the amount of pain you have had in your knee(s) the past 24 hours. The scale ranges from “no pain at all” to the “worst possible pain”.

RIGHT KNEE \_\_\_\_\_  
no pain worst possible pain

LEFT KNEE \_\_\_\_\_  
no pain worst possible pain

## The IKDC Evaluation Form

### SYMPTOMS\*:

\*Grade symptoms at the highest activity level at which you think you could function without significant symptoms, even if you are not actually performing activities at this level...

1. What is the highest level of activity that you can perform without significant knee pain?

- <sub>4</sub> Very strenuous activities like jumping or pivoting as in basketball or soccer
- <sub>3</sub> Strenuous activities like heavy physical work, skiing or tennis
- <sub>2</sub> Moderate activities like moderate physical work, running or jogging
- <sub>1</sub> Light activities like walking, housework or yard work
- <sub>0</sub> Unable to perform any of the above activities due to knee pain

2. During the past 4 weeks, or since your injury, how often have you had pain?

- |       |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |          |
|-------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------|
|       | 10                       | 9                        | 8                        | 7                        | 6                        | 5                        | 4                        | 3                        | 2                        | 1                        | 0                        |          |
| Never | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Constant |

3. If you have pain, how severe is it?

- |         |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                          |                       |
|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-----------------------|
|         | 10                       | 9                        | 8                        | 7                        | 6                        | 5                        | 4                        | 3                        | 2                        | 1                        | 0                        |                       |
| No pain | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Worst pain imaginable |

4. During the past 4 weeks, or since your injury, how stiff or swollen was your knee?

- <sub>4</sub> Not at all
- <sub>3</sub> Mildly
- <sub>2</sub> Moderately
- <sub>1</sub> Very
- <sub>0</sub> Extremely

5. What is the highest level of activity you can perform without significant swelling in your knee?

- <sub>4</sub> Very strenuous activities like jumping or pivoting as in basketball or soccer
- <sub>3</sub> Strenuous activities like heavy physical work, skiing or tennis
- <sub>2</sub> Moderate activities like moderate physical work, running or jogging
- <sub>1</sub> Light activities like walking, housework, or yard work
- <sub>0</sub> Unable to perform any of the above activities due to knee swelling

**MPFL Reconstruction – Patient Assessment and Progress Sheet**

6. During the past 4 weeks, or since your injury, did your knee lock or catch?

Yes     No

7. What is the highest level of activity you can perform without significant giving way in your knee?

- Very strenuous activities like jumping or pivoting as in basketball or soccer
- Strenuous activities like heavy physical work, skiing or tennis
- Moderate activities like moderate physical work, running or jogging
- Light activities like walking, housework or yard work
- Unable to perform any of the above activities due to giving way of the knee

**SPORTS ACTIVITIES:**

8. What is the highest level of activity you can participate in on a regular basis?

- Very strenuous activities like jumping or pivoting as in basketball or soccer
- Strenuous activities like heavy physical work, skiing or tennis
- Moderate activities like moderate physical work, running or jogging
- Light activities like walking, housework or yard work
- Unable to perform any of the above activities due to knee

9. How does your knee affect your ability to:

		Not difficult at all	Minimally difficult	Moderately Difficult	Extremely difficult	Unable to do
a.	Go up stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Go down stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Kneel on the front of your knee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Squat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Sit with your knee bent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Rise from a chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Run straight ahead	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Jump and land on your involved leg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Stop and start quickly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**MPFL Reconstruction – Patient Assessment and Progress Sheet**

**FUNCTION:**

10. How would you rate the function of your knee on a scale of 0 to 10 with 10 being normal, excellent function and 0 being the inability to perform any of your usual daily activities which may include sports?

FUNCTION PRIOR TO YOUR KNEE INJURY:

Couldn't perform daily activities	0	1	2	3	4	5	6	7	8	9	10	No limit in daily activities
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

CURRENT FUNCTION OF YOUR KNEE:

Can't perform daily activities	0	1	2	3	4	5	6	7	8	9	10	No limit in daily activities
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

**Thank you** for taking the time to answer all the above questions which will prove very useful in helping us to assess your progress following surgery. If you have any comments which you feel we should know about then please write them in the box below or discuss with your surgeon in the clinic....

Comments...

The following pages will be filled in by your surgeon, you do **not** need to answer these questions...

**MPFL Reconstruction – Patient Assessment and Progress Sheet**

**2000  
IKDC KNEE EXAMINATION FORM**

<b>Generalized Laxity:</b>	q tight	q normal	q lax	
<b>Alignment:</b>	q obvious varus	q normal	q obvious valgus	
<b>Patella Position:</b>	q obvious baja	q normal	q obvious alta	
<b>Patella Subluxation/Dislocation:</b>	q centered	q subluxable	q subluxed	q dislocated
<b>Range of Motion (Ext/Flex):</b>	Index Side:	passive _____/_____/_____	active _____/_____/_____	
	Opposite Side:	passive _____/_____/_____	active _____/_____/_____	

SEVEN GROUPS	FOUR GRADES *Group					Grade		
		A	B	C	D	B	C	D
Normal	Nearly Normal	Abnormal	Severely Abnormal	A	B	C	D	

<b>1. Effusion</b>	q None	q Mild	q Moderate	q Severe	q	q	q	q
<b>2. Passive Motion Deficit</b>								
ΔLack of extension	q <3°	q 3 to 5°	q 6 to 10°	q >10°				
ΔLack of flexion	q 0 to 5°	q 6 to 15°	q 16 to 25°	q >25°	q	q	q	q
<b>3. Ligament Examination</b> (manual, instrumented, x-ray)								
ΔLachman (25° flex) (134N)	q -1 to 2mm	q 3 to 5mm(1*) q <-1 to -3	q 6 to 10mm(2*) q <-3 stiff	q >10mm(3*)				
ΔLachman (25° flex) manual max	q -1 to 2mm	q 3 to 5mm	q 6 to 10mm	q >10mm				
Anterior endpoint:	q firm		q soft					
ΔTotal AP Translation (25° flex)	q 0 to 2mm	q 3 to 5mm	q 6 to 10mm	q >10mm				
ΔTotal AP Translation (70° flex)	q 0 to 2mm	q 3 to 5mm	q 6 to 10mm	q >10mm				
ΔPosterior Drawer Test (70° flex)	q 0 to 2mm	q 3 to 5mm	q 6 to 10mm	q >10mm				
ΔMed Joint Opening (20° flex/valgus rot)	q 0 to 2mm	q 3 to 5mm	q 6 to 10mm	q >10mm				
ΔLat Joint Opening (20° flex/varus rot)	q 0 to 2mm	q 3 to 5mm	q 6 to 10mm	q >10mm				
ΔExternal Rotation Test (30° flex prone)	q <5°	q 6 to 10°	q 11 to 19°	q >20°				
ΔExternal Rotation Test (90° flex prone)	q <5°	q 6 to 10°	q 11 to 19°	q >20°				
ΔPivot Shift	q equal	q +glide	q ++(clunk)	q +++(gross)				
ΔReverse Pivot Shift	q equal	q glide	q gross	q marked				
<b>4. Compartment Findings</b>								
ΔCrepitus Ant. Compartment	q none	q moderate	q mild pain	q >mild pain				
ΔCrepitus Med. Compartment	q none	q moderate	q mild pain	q >mild pain				
ΔCrepitus Lat. Compartment	q none	q moderate	q mild pain	q >mild pain				
<b>5. Harvest Site Pathology</b>	q none	q mild	q moderate	q severe				
<b>6. X-ray Findings</b>								
Med. Joint Space	q none	q mild	q moderate	q severe				
Lat. Joint Space	q none	q mild	q moderate	q severe				
Patellofemoral	q none	q mild	q moderate	q severe				
Ant. Joint Space (sagittal)	q none	q mild	q moderate	q severe				
Post. Joint Space (sagittal)	q none	q mild	q moderate	q severe				

**7. Functional Test**

# MPFL Reconstruction – Patient Assessment and Progress Sheet

One Leg Hop (% of opposite side)

q  $\geq 90\%$

q 89 to 76%

q 75 to 50%

q  $<50\%$

## \*\*Final Evaluation

q q q q

\* Group grade: The lowest grade within a group determines the group grade

\*\* Final evaluation: the worst group grade determines the final evaluation for acute and subacute patients. For chronic patients compare preoperative and postoperative evaluations. In a final evaluation only the first 3 groups are evaluated but all groups must be documented.  $\Delta$  Difference in involved knee compared to normal or what is assumed to be normal.

## INSTRUCTIONS FOR THE 2000 IKDC KNEE EXAMINATION FORM

The Knee Examination Form contains items that fall into one of seven measurement domains. However, only the first three of these domains are graded. The seven domains assessed by the Knee Examination Form are:

1. *Effusion*

An effusion is assessed by ballotting the knee. A fluid wave (less than 25 cc) is graded mild, easily ballotteable fluid – moderate (25-60 cc), and a tense knee secondary to effusion (greater than 60 cc) is rated severe.

2. *Passive Motion Deficit*

Passive range of motion is measured with a goniometer and recorded on the form for the index side and opposite or normal side. Record values for zero point/hyperextension/flexion (e.g. 10 degrees of hyperextension, 150 degrees of flexion = 10/0/150; 10 degrees of flexion to 150 degrees of flexion = 0/10/150). Extension is compared to that of the normal knee.

3. *Ligament Examination*

The Lachman test, total AP translation at 70 degrees, and medial and lateral joint opening may be assessed with manual, instrumented or stress x-ray examination. Only one should be graded, preferably a “measured displacement”. A force of 134 N (30 lbs) and the maximum manual are recorded in instrumented examination of both knees. Only the measured displacement at the standard force of 134 N is used for grading. The numerical values for the side to side difference are rounded off, and the appropriate box is marked.

The end point is assessed in the Lachman test. The end point affects the grading when the index knee has 3-5 mm more anterior laxity than the normal knee. In this case, a soft end point results in an abnormal grade rather than a nearly normal grade.

The 70-degree posterior sag is estimated by comparing the profile of the injured knee to the normal knee and palpating the medial femoral tibial stepoff. It may be confirmed by noting that contraction of the quadriceps pulls the tibia anteriorly.

The external rotation tests are performed with the patient prone and the knee flexed 30° and 70°. Equal external rotational torque is applied to both feet and the degree of external rotation is recorded.

The pivot shift and reverse pivot shift are performed with the patient supine, with the hip in 10-20 degrees of abduction and the tibia in neutral rotation using either the Losee, Noyes, or Jakob techniques. The greatest subluxation, compared to the normal knee, should be recorded.

4. *Compartment Findings*

Patellofemoral crepitation is elicited by extension against slight resistance. Medial and lateral compartment crepitation is elicited by extending the knee from a flexed position with a varus stress and then a valgus stress (i.e., McMurray test). Grading is based on intensity and pain.

5. *Harvest Site Pathology*

Note tenderness, irritation or numbness at the autograft harvest site.

6. *X-ray Findings*

A bilateral, double leg PA weightbearing roentgenogram at 35-45 degrees of flexion (tunnel view) is used to evaluate narrowing of the medial and lateral joint spaces. The Merchant view at 45 degrees is used to document patellofemoral narrowing. A mild grade indicates minimal changes (i.e., small osteophytes, slight sclerosis or flattening of the femoral condyle) and narrowing of the joint space which is just detectable. A moderate grade may have those changes and joint space narrowing (e.g., a joint space of 2-4 mm side or up to 50% joint space narrowing). Severe changes include a joint space of less than 2 mm or greater than 50% joint space narrowing.

7. *Functional Test*

The patient is asked to perform a one leg hop for distance on the index and normal side. Three trials for each leg are recorded and averaged. A ratio of the index to normal knee is calculated.