ARA PHYSIOTHERAPY

Protokol Fisioterapi Pemeriksaan Sendi Lutut

Knee Joint Assessment Guideline

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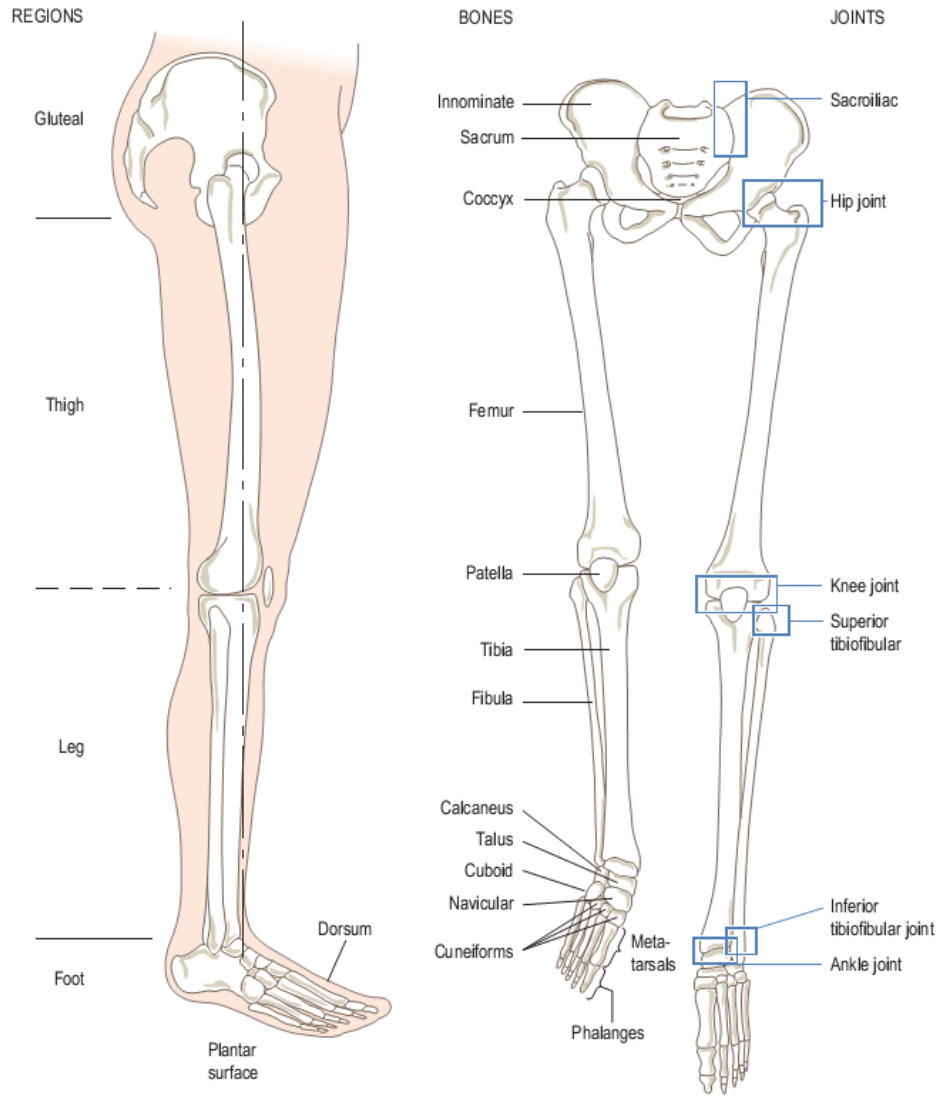
A. Latar Belakang

Definisi	:	Upaya untuk melakukan pencarian dan pencatatan data awal yang berhubungan dengan sebab dan akibat keluhan pasien pada sendi lutut.
Tujuan	:	1. Menemukan kerusakan jaringan spesifik pada sendi lutut baik trauma dan non trauma. 2. Menemukan penyebab dari kerusakan jaringan spesifik pada sendi lutut non trauma. 3. Menganalisa anatomi dan biomekanika sendi lutut terkait dalam tujuan hasil akhir program fisioterapi.
Dokumen	:	1. Form Rujukan (jika ada) 2. Form Registrasi (A) 3. Form Pemeriksaan (B) 4. Form Penanganan & Dokumentasi (C)

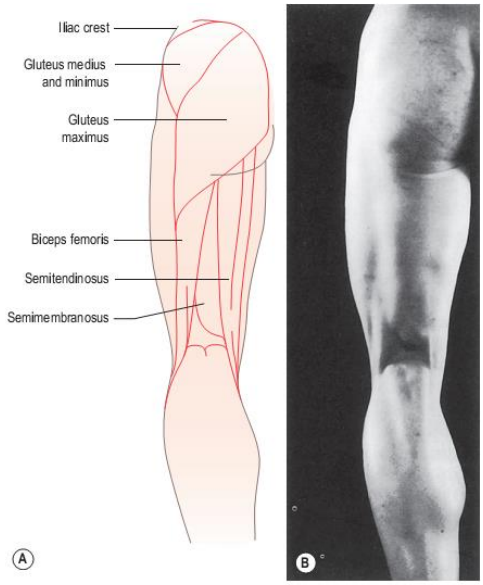
B. Anatomi Sendi Lutut

1. Tulang dan Sendi (Palastanga *et al*. 2012; Donatelli *et al*. 2010)

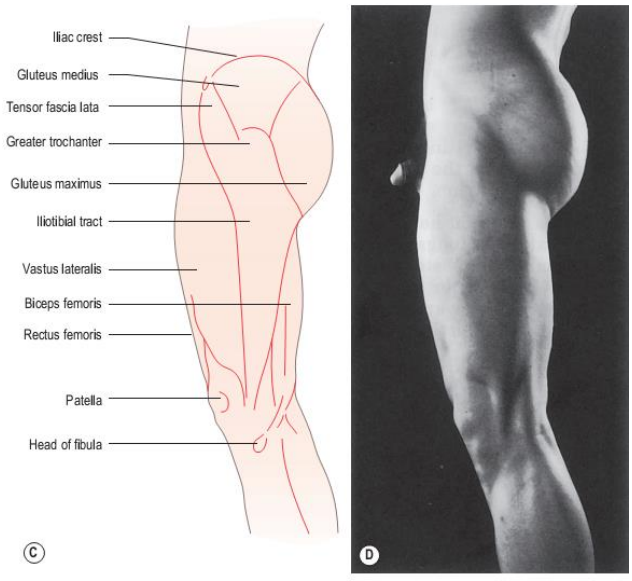


3.4 The regions, bones and joints of the lower limb.

2. **Otot** (Palastanga *et al*. 2012;)



Left thigh: (A, B) posterior view;



Cont'd (C, D) lateral view. *(B, D, reproduced with permission from Keogh B, Ebbs S (1984) Normal Surface An.*

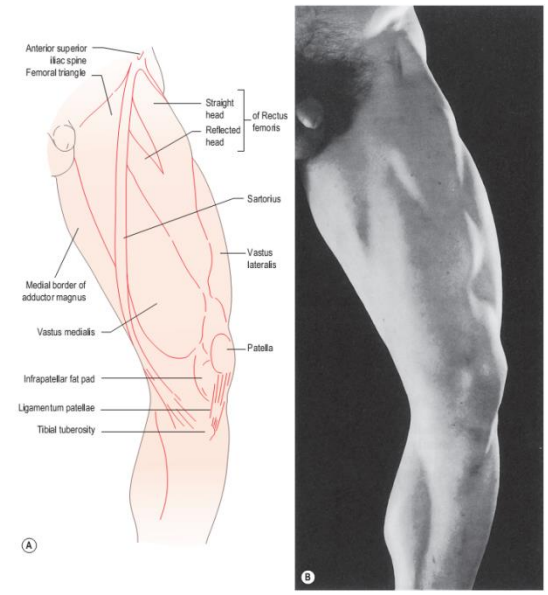
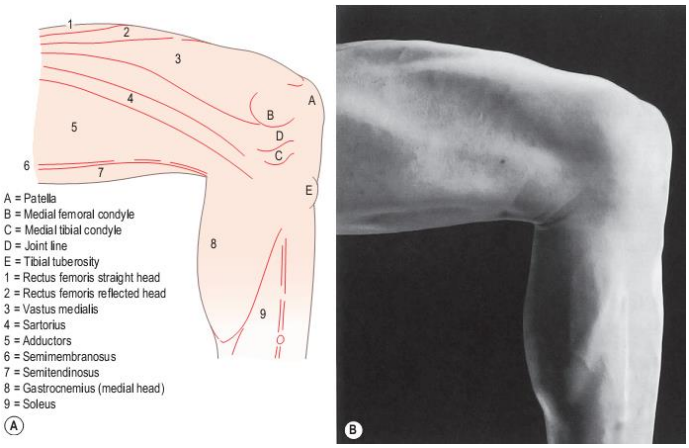
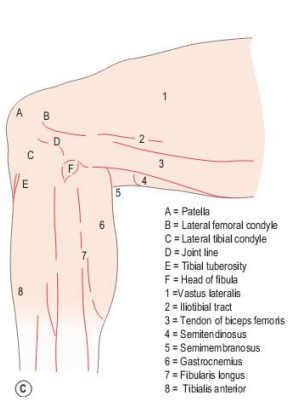
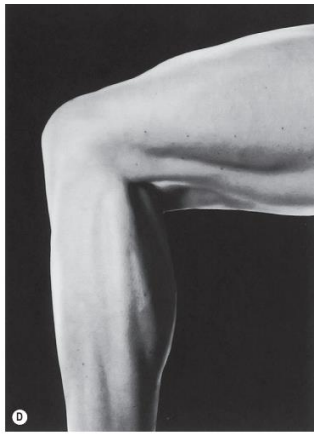


Figure 3.36 (A, B) Left thigh, anteromedial aspect. *(B, reproduced with permission from Keogh B, Ebbs S (1984) Normal Surface Anaton*







igure 3.37 Left lower limb with flexed knee: (A, B) medial aspect, (C, D) lateral aspect. *(B, D, reproduced with permission from Keogh*

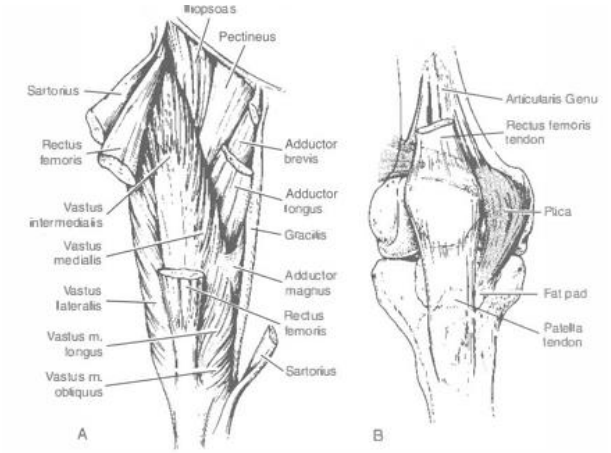


Figure 21-3 A, Muscles of the extensor mechanism. B, Patellar tendon ligament and articularis genu mus

rounded cord, which is attached to the lateral epicondyle of the

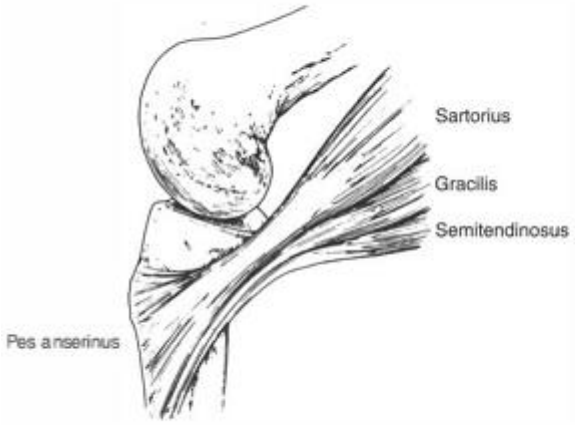


Figure 21-4 Muscles of the pes anserinus group, medial aspect of the knee.

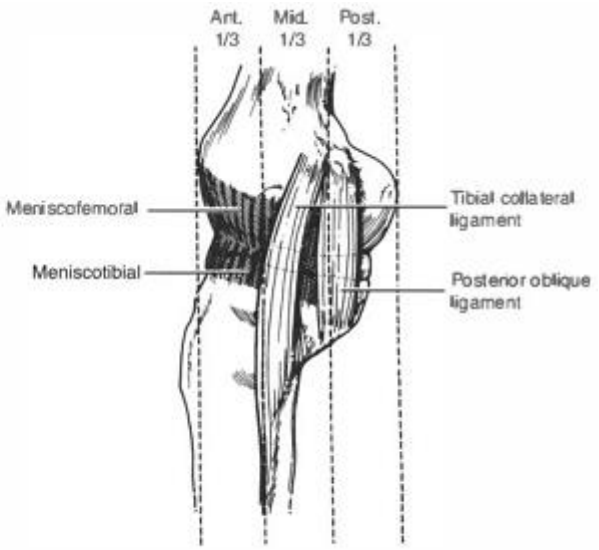
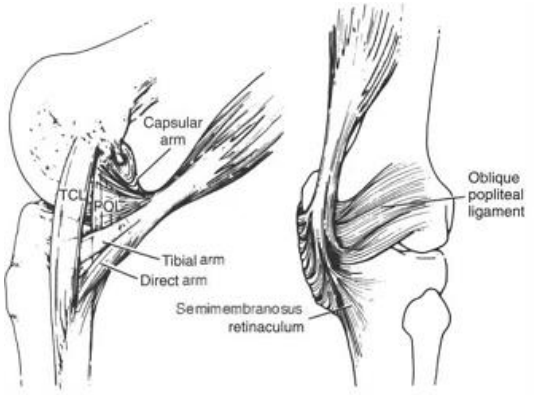


Figure 21-6 Divisions of the medial capsular ligaments.



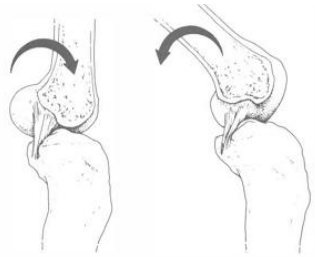


Figure 21-7 Attachment of the posterior cruciate ligament. The different bundles change in tension as the knee moves from extension to flexion.

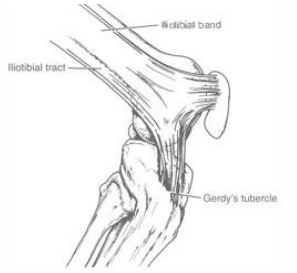


Figure 21-8 Iliotibial band and iliotibial tract and their attachment to Gerdy's tubercle.

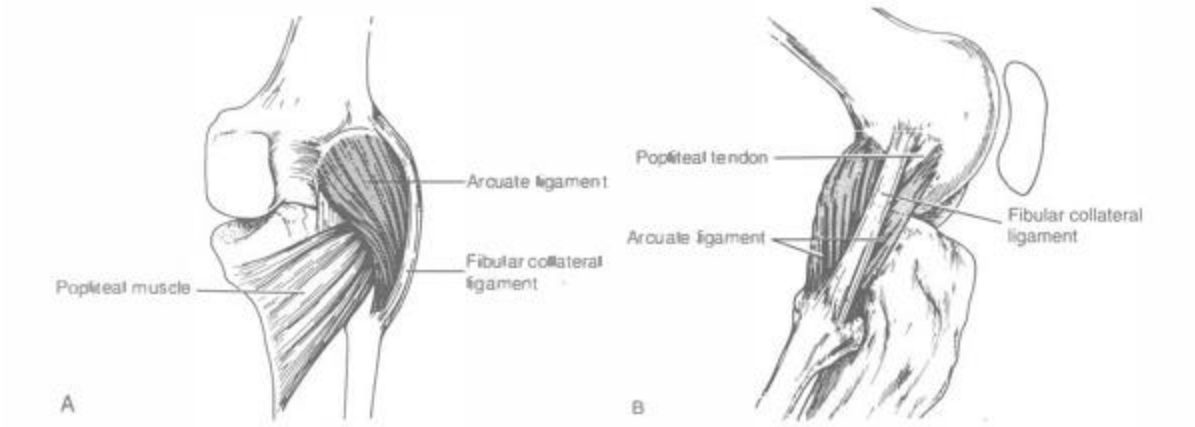


Figure 21-9 **A,** The popliteus muscle forms the deep floor of the popliteal fossa. **B,** The fibular collateral ligament and the arcuate ligament. Components of the arcuate complex.

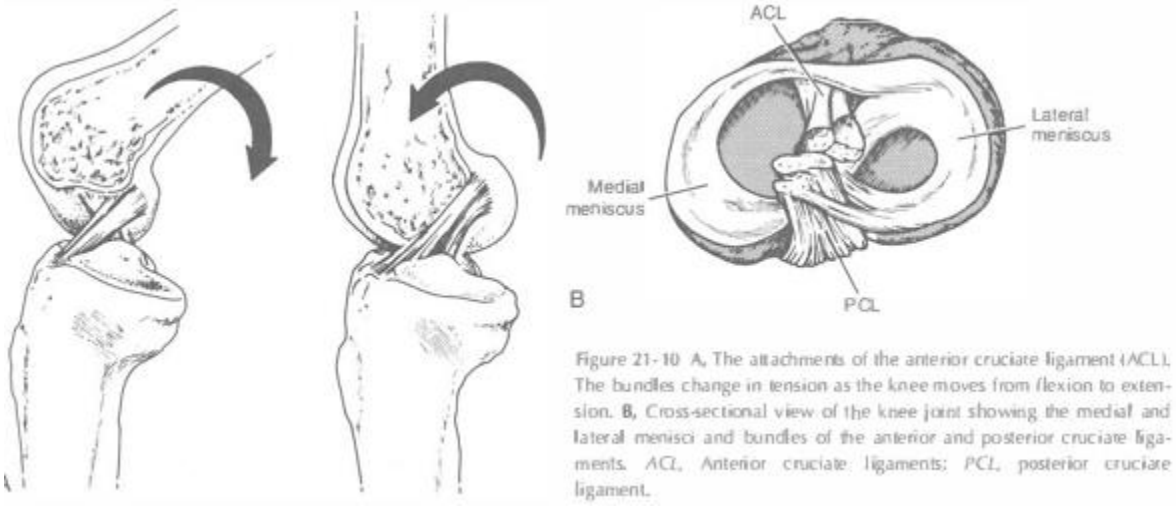


Figure 21-10 **A,** The attachments of the anterior cruciate ligament (ACL). The bundles change in tension as the knee moves from flexion to extension. **B,** Cross-sectional view of the knee joint showing the medial and lateral menisci and bundles of the anterior and posterior cruciate ligaments. *ACL,* Anterior cruciate ligaments; *PCL,* posterior cruciate ligament.

C. Biomekanika

Movements at knee joint

The knee joint consists of the distal end of the femur and proximal end of the tibia with the patella anterior. It primarily flexes and extends but is also capable of some rotation when the knee is flexed. These movements are produced by the following muscles:

Movement	Muscles
Flexion	Hamstrings: Semitendinosus Semimembranosus Biceps femoris Gastrocnemius Gracilis Sartorius Popliteus
Extension	Quadriceps femoris: Rectus femoris Vastus lateralis Vastus medialis Vastus intermedius Tensor fascia lata
Lateral rotation	Biceps femoris
Medial rotation	Semitendinosus Semimembranosus Gracilis Sartorius Popliteus

- The knee extensors are important 'antigravity' muscles as they frequently extend the knee working concentrically and control knee flexion working eccentrically.
- The rotational movements of the knee are complex, involving interaction between muscles and ligaments.

D. Tata Laksana Pemeriksaan

Tahap 1 (Registrasi)	:	Pastikan Klien/Calon Pasien menandatangani informed consent pada form registrasi dan berikan tanggal.
Tahap 2 (Anamnesa)	:	1. Berikan tanggal pemeriksaan 2. Periksa & Catat Pulse & Blood Pressure 3. Tanyakan & catat riwayat keluhan klien saat ini kemudian lingkari area keluhan pada peta tubuh. 4. Observasi & catat jika ada tanda radang, bengkak, pola jalan, besar otot, posisi tulang, penggunaan alat bantu, dll yang berkaitan dengan sendi lutut. 5. Palpasi & catat jika ada tanda radang, letak nyeri, posisi tulang, tonus otot, dll yang berkaitan dengan sendi lutut.
Tahap 3 (Pemeriksaan Fungsi Sendi)	:	1. Aktif : Perintahkan klien untuk melakukan gerak sendi (fleksi & ekstensi), Ukur ROM dan catat. 2. Pasif : Gerakkan sendi lutut secara pasif(fleksi & ekstensi) oleh pemeriksa, rasakan *end feel* sendi, Ukur ROM dan catat. 3. Isometrik : Pemeriksa persiapkan posisi sendi lutut, kemudian jelaskan perintah ke klien dengan mendorong tahanan dari tangan pemeriksa (fleksi & ekstensi).

Tahap 4 (Pemeriksaan Spesifik) : Lakukan pemeriksaan ortopedi pada sendi lutut sebagai berikut:

1. **Stabilisasi Patella** (Hertling *et al*. 1996)

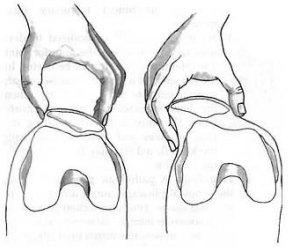


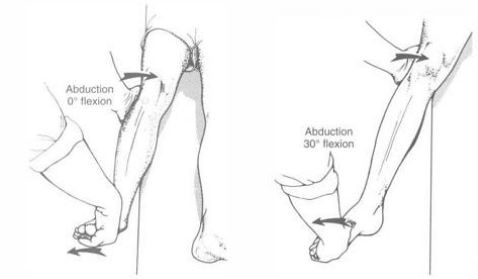
FIG. 13-20. [A] Passive patellar tilt of +15°, and [B] passive lateral glide test, demonstrating a patella being subluxated laterally to half its width.

2. **Stabilitas Sendi** : Rasakan stabilitas dan *endfeel*, catat derajat nyeri (Donatelli *et al*. 2010)

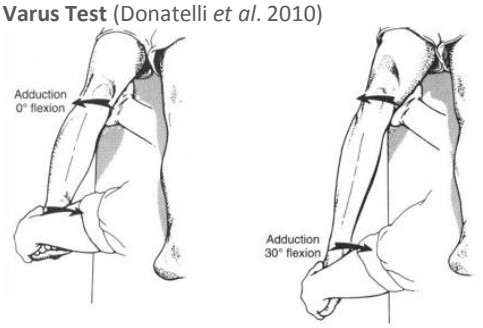
Instability	Tear	Test
Straight Medial	Struktur medial & PCL	Abduction/valgus Tes extensi, Posterior drawer test
Straight Lateral	Struktur Lateral & PCL	Adduction/varus test Posterior drawer test
Straight posterior	PCL & posterior capsule	Posterior drawer test
Straight Anterior	PCL, ACL, Struktur Lateral	Anterior drawer test & tes instabilitas di atas
Anteromedial Rotatory Instability (AMRI)	Struktur medial, posterior oblique, MCL	Valgus tes 30°, Anterior drawer test
Anterolateral Rotatory Instability (ALRI)	1/3 capsul, ACL	Anterior drawer test, Lachman, Picot shift test
Posterolateral Rotatory Instability (AMRI)	Struktur complex	Varus tes 30°, Posterior drawer test

Tahap 4 (Pemeriksaan Spesifik) Lanjutan :

a. **Valgus Test** (Donatelli *et al*. 2010)



b. **Varus Test** (Donatelli *et al*. 2010)



c. **Anterior Drawer Test** (Donatelli *et al*. 2010)

d. **Lachman Test** (Donatelli *et al*. 2010)

e. **Posterior Drawer Test** (Donatelli *et al*. 2010)

3. **Meniscus**

a. **McMurray (Rolf, 2007)**

Fig. 95 McMurray's test is specific for a medial meniscal flap tear

b. Appley (Rolf, 2007)

Fig. 94 Compression rotation test eliciting pain reflects a cartilage or meniscus injury

Tahap 5 (Antropometri)	:	**Ukur dan catat luas diameter sendi dan kelompok otot paha dan betis**

Titik Ukur	Kanan	Kiri
Mid Patella	…….Cm	…….Cm
10cm atas Mid Patella	…….Cm	…….Cm
20cm atas Mid Patella	…….Cm	…….Cm
9cm bawah tuberositas tibia	…….Cm	…….Cm

Tahap 6 (Radiologi)	:	Catat hasil foto radiologi, MRI, Arthroscopi dll
Tahap 7 (Diagnosa FT)	:	Berdasarkan hasil pemeriksaan, buat kesimpulan diagnosa fisioterapi, *Contoh: Patellofemoralpain syndrome et causa (ec) VMO weakness / Jumpers knee*
Tahap 8 (Goal)	:	Tuliskan dan jelaskan kepada klien rencana jangka pendek dan jangka panjang yang akan dicapai berdasarkan hasil pemeriksaan
Tahap 9 (Pengesahan)	:	Pemeriksa wajib menandatangani form pemeriksaan, jika sudah selesai melakukan pemeriksaan dengan melaporkannya kepada *Head Physiotherapy* untuk di tanda tangani juga.

Daftar Pustaka

Donatelli, R A. Wooden, M J. 2010. *Orthopaedic Physical Therapy 4th Edition*. United States. Elsevier. Hal. 499-535.

Hertling, D. Kessler, RM. 1996. *Management Common Musculoskeletal Disorders Physical Therapy Principles and Methode 3rd Edition*. New York. Lippincott. Hal. 315-378.

Palastanga, N. Soames, R. 2012. *Anatomy and Human Movement, Structure and Function 6th edition*. London. Elsevier. Hal. 206,244-247.

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