
Funktionelle Anatomie

Vorlesung 376-0905-00, FS 2013

B. Untere Extremität

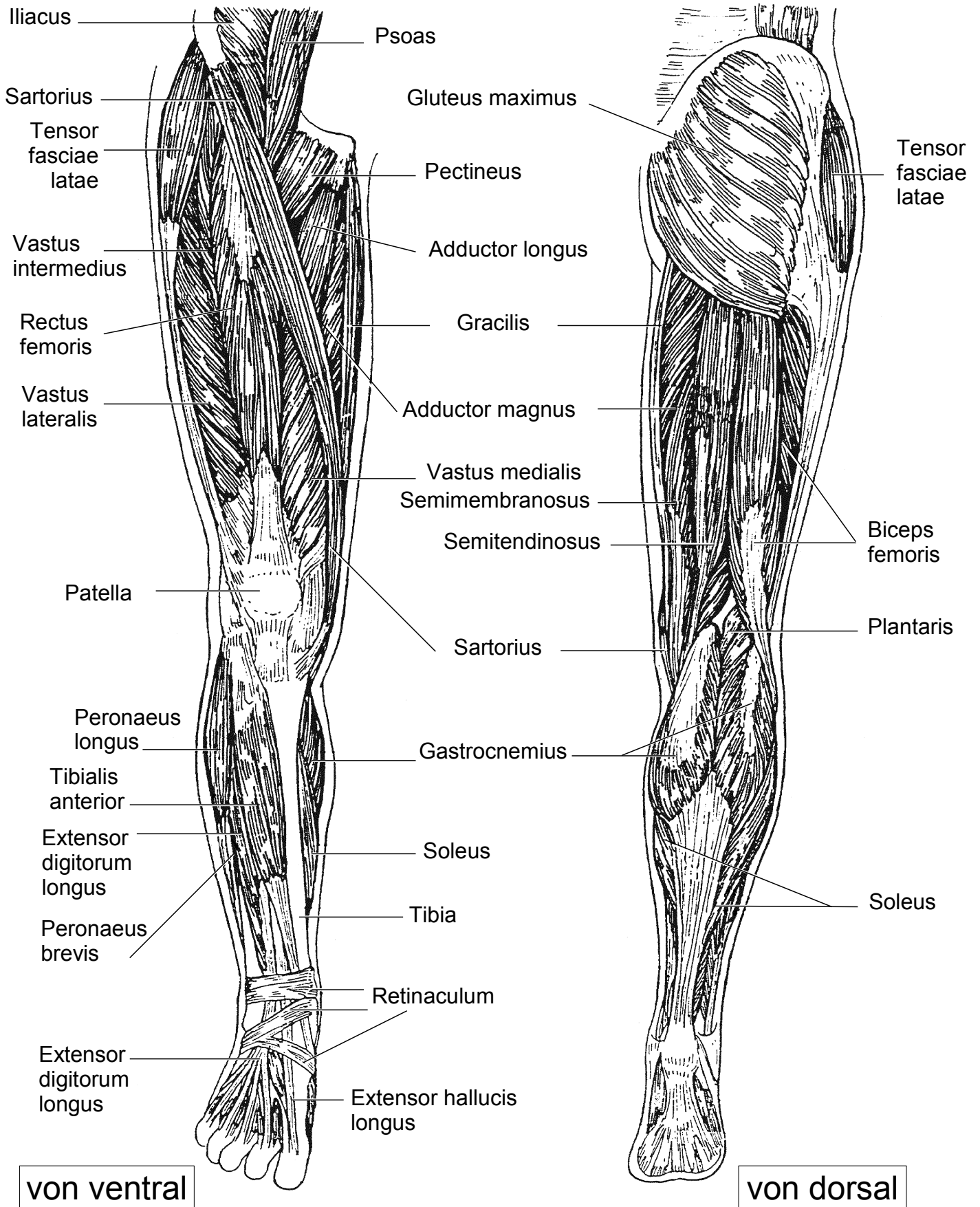
D.P. Wolfer, I. Amrein, A. Rhyner, M.M. Müntener

Bei den Zeichenvorlagen handelt es sich zum Teil um modifizierte Abbildungen aus Lehrbüchern. Sie dürfen deshalb nur zur Mitarbeit in der Vorlesung verwendet werden. Es ist nicht gestattet, die Vorlagen zu vervielfältigen.

19.03.2013	Untere Extremität I
26.03.2013	Untere Extremität II
09.04.2013	Untere Extremität III
16.04.2013	Untere Extremität IV
23.04.2013	Untere Extremität V

Muskeln der unteren Extremität

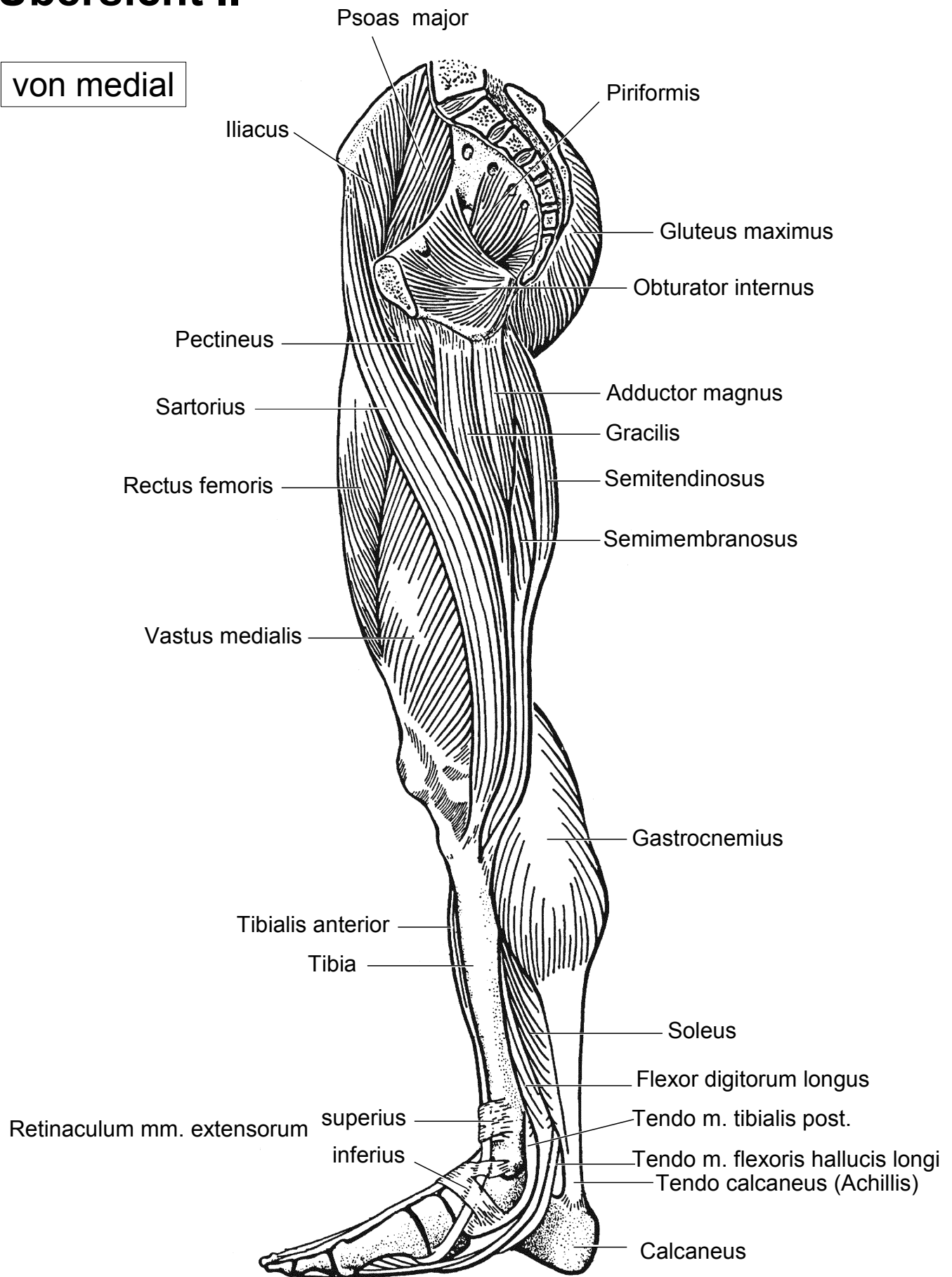
Übersicht I



Muskeln der unteren Extremität

Übersicht II

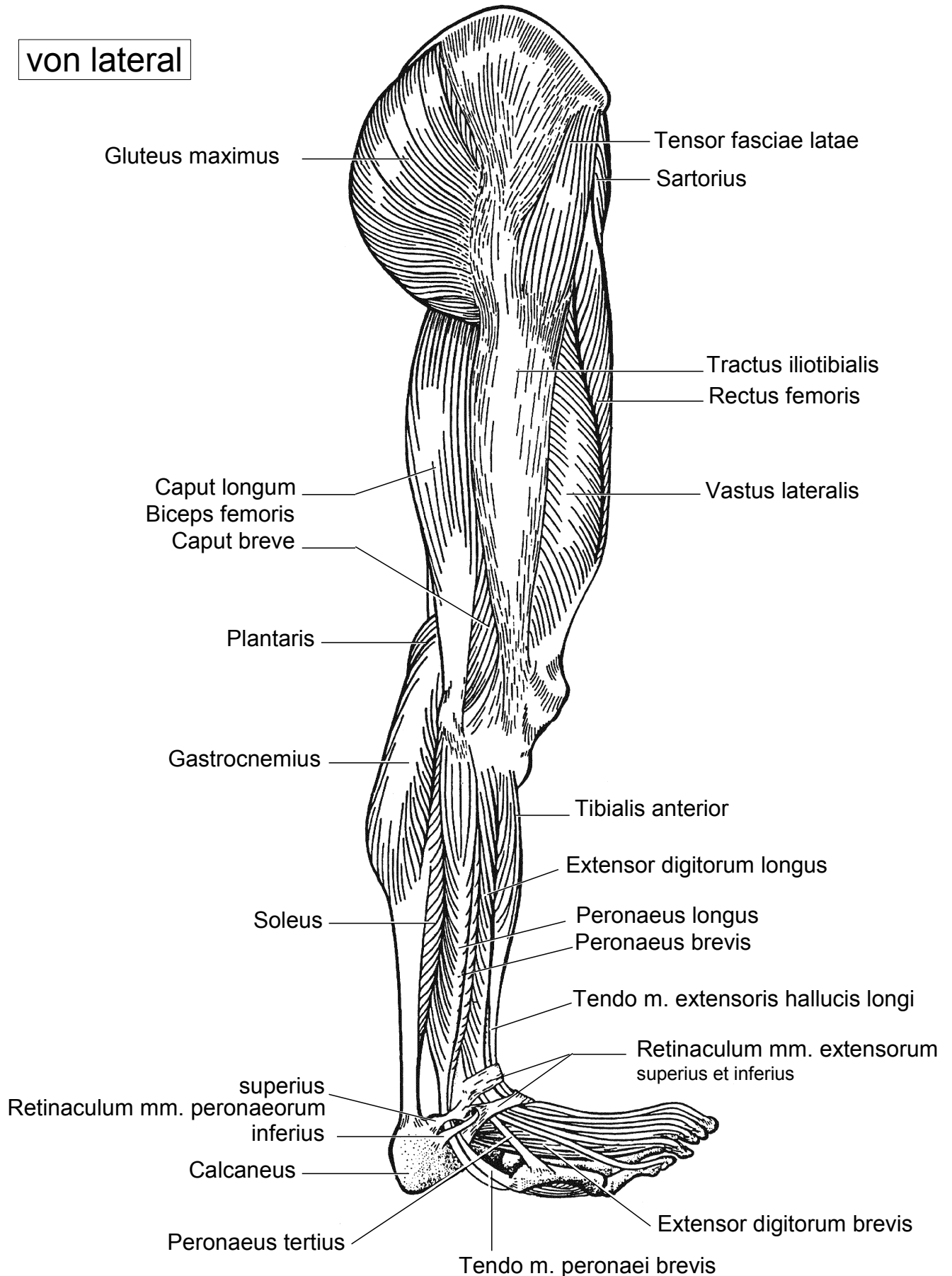
von medial



Muskeln der unteren Extremität

Übersicht III

von lateral



Querschnitt Oberschenkel

M. rectus femoris

M. vastus intermedius

M. vastus lateralis

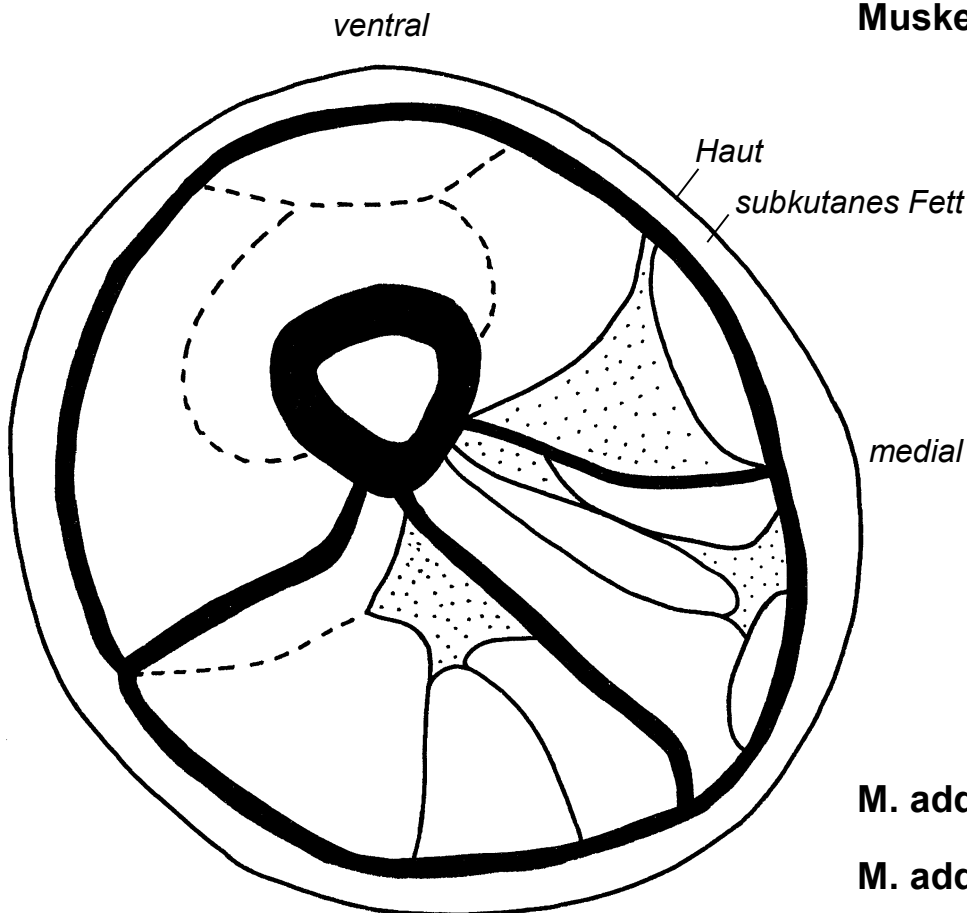
M. vastus medialis

M. sartorius

Muskelloge:

- Knochen (Femur)
- Gruppenfaszie
- Intermuskuläres Septum
- Körperfaszie

Muskelfaszie



*Oberschenkel rechts,
Ansicht von distal*

M. adductor longus

M. adductor brevis

M. gracilis

M. adductor magnus

M. biceps femoris
-kurzer, langer Kopf

M. semimembranosus

M. semitendinosus

Querschnitt Unterschenkel

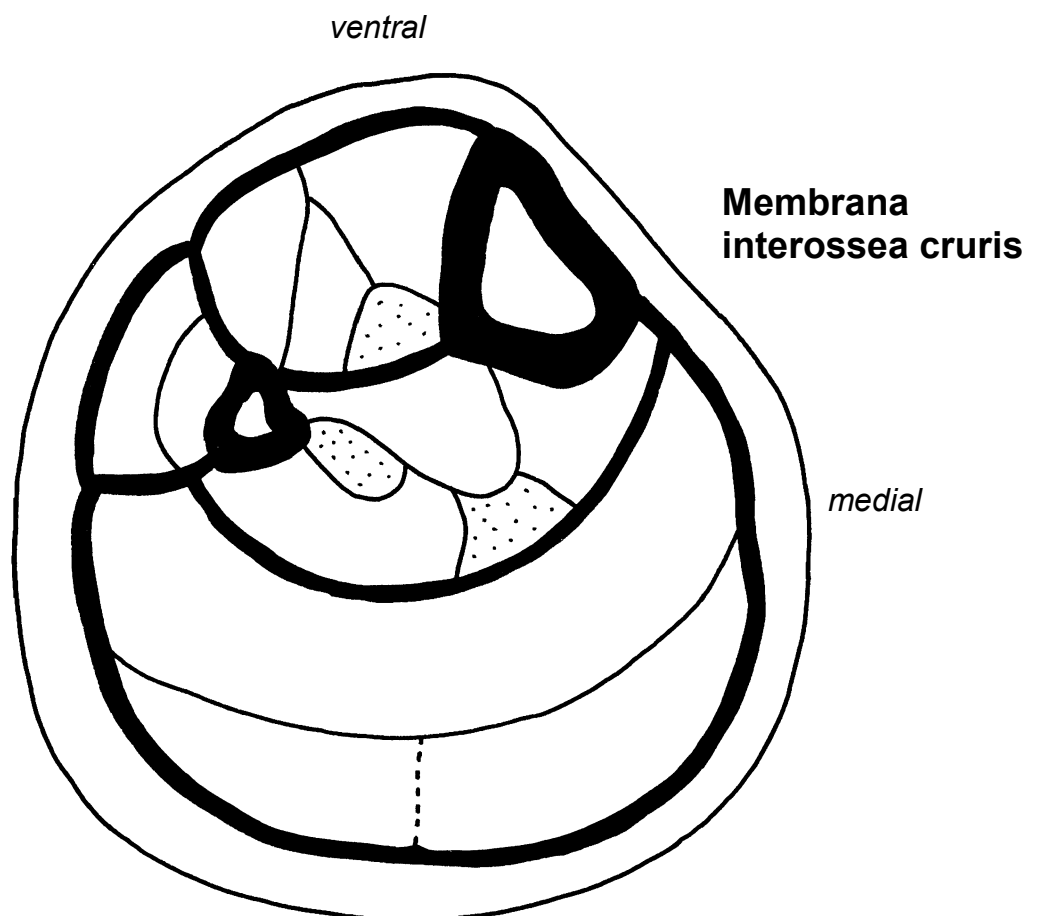
M. peroneus longus

M. peroneus brevis

M. extensor digitorum longus

M. extensor hallucis longus

M. tibialis anterior



*Unterschenkel rechts,
Ansicht von distal*

M. soleus

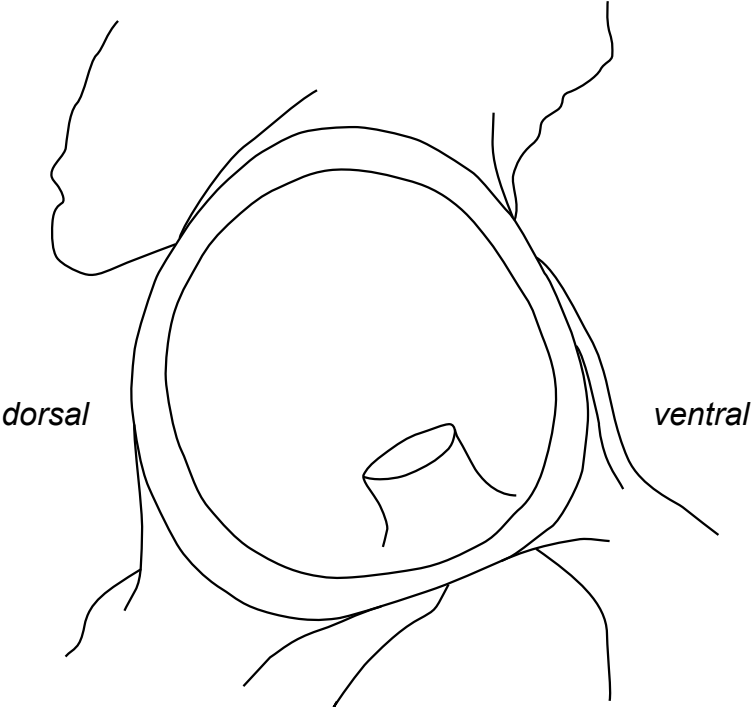
M. gastrocnemius

M. flexor digitorum longus

M. tibialis posterior

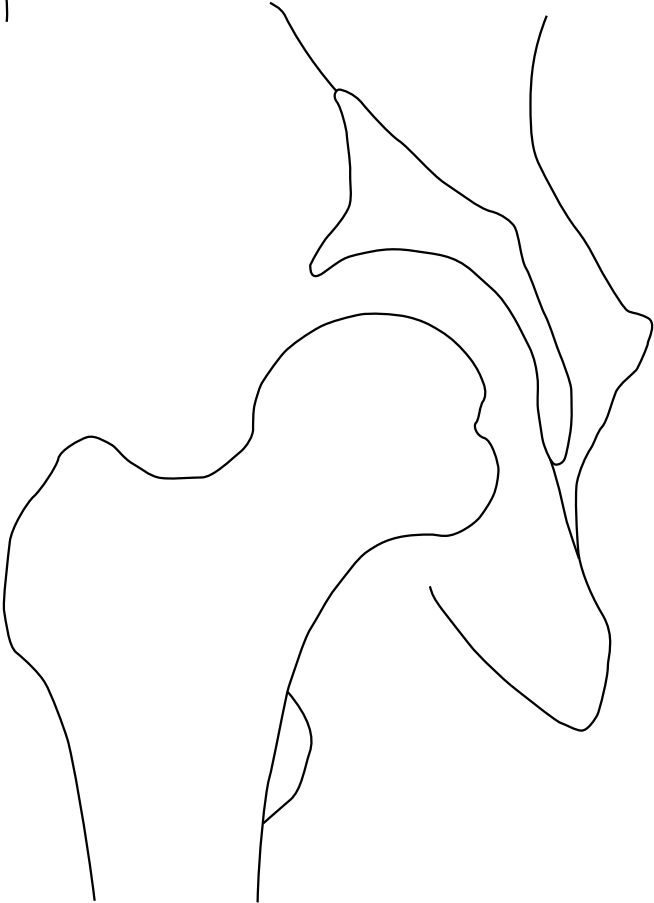
M. flexor hallucis longus

Hüftgelenk



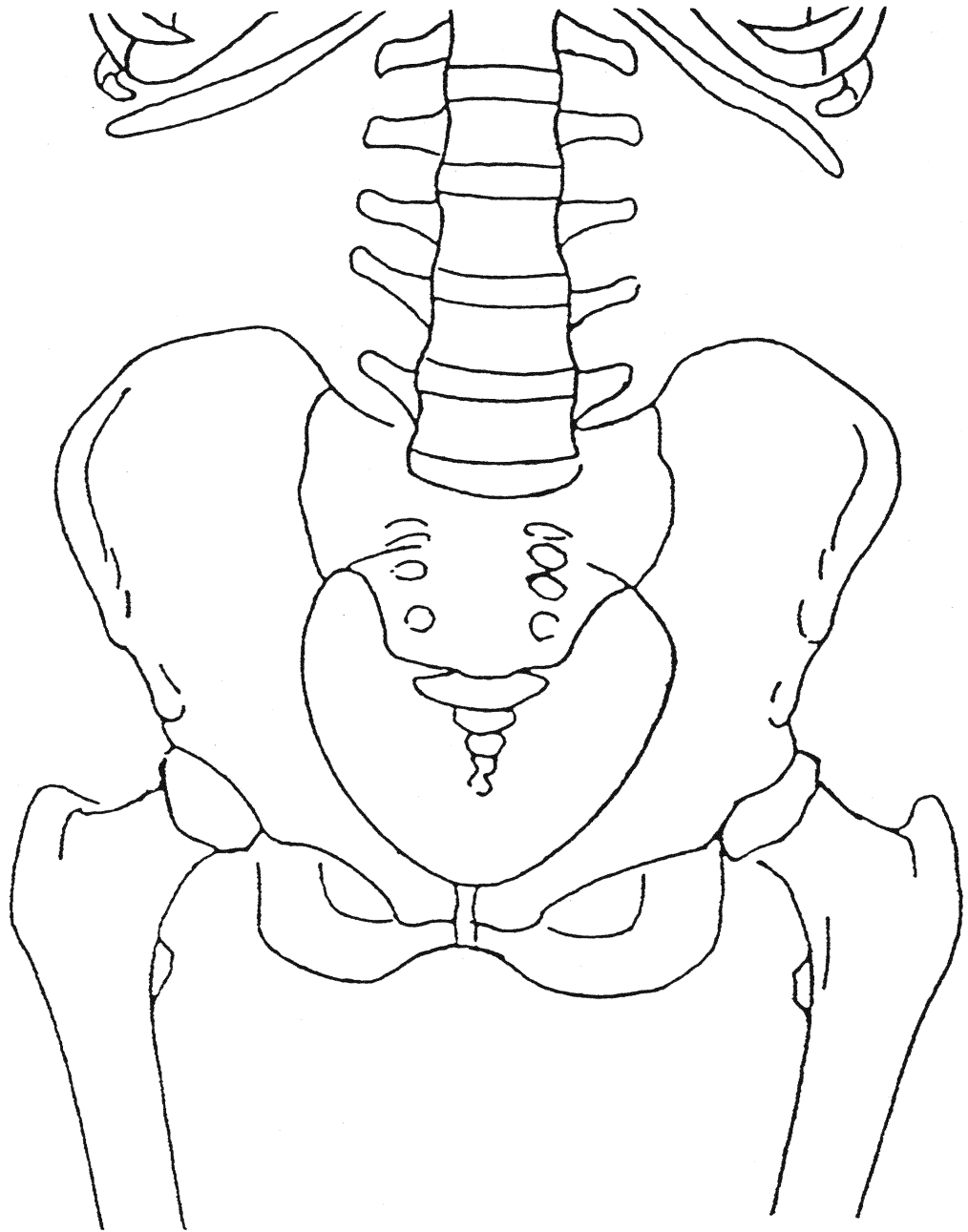
Gelenkpfanne

Frontalschnitt



Hüfte

ventral



M. iliopsoas = M. iliacus + M. psoas major

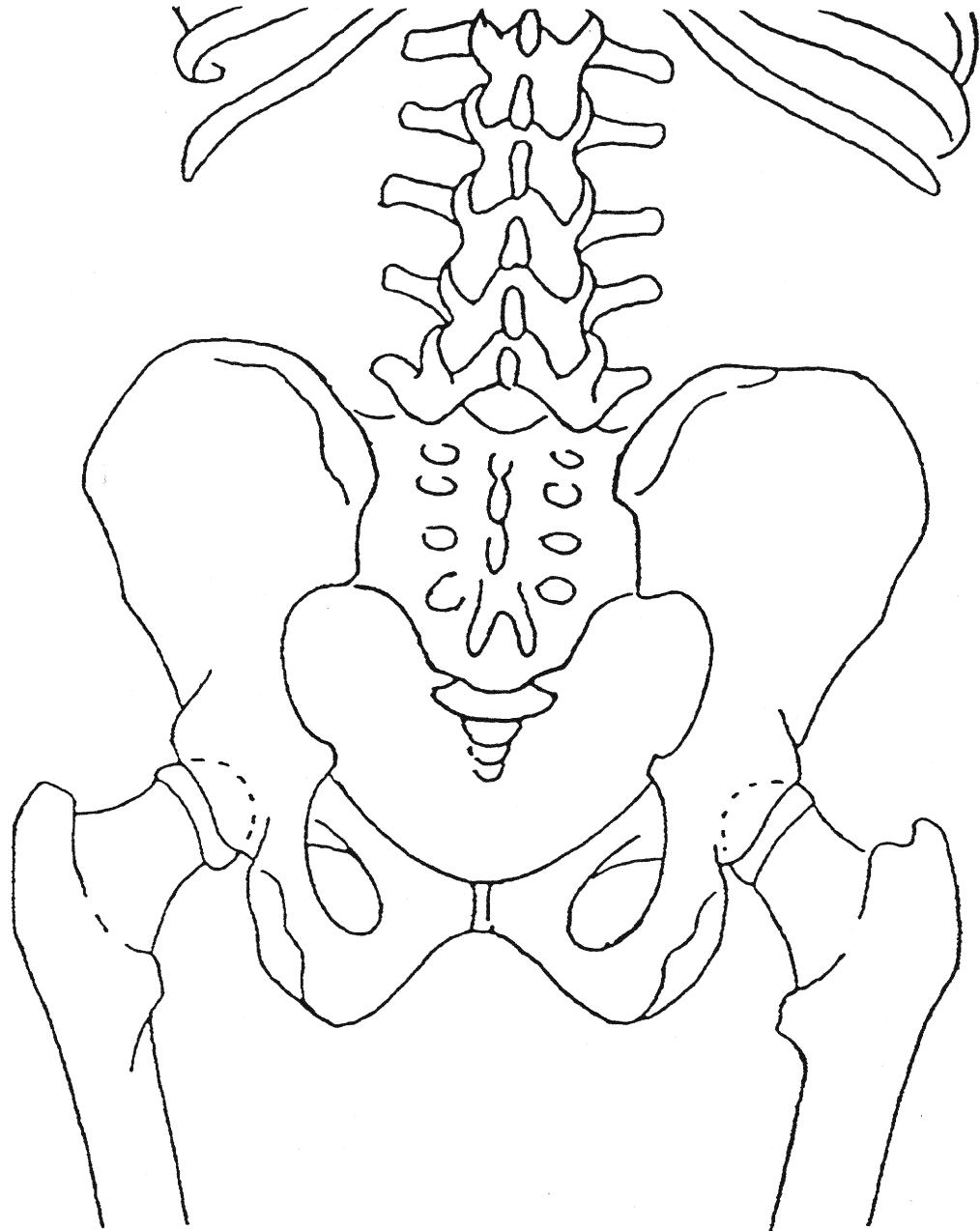
M. piriformis

M. obturator externus

M. quadratus femoris

Hüfte

dorsal



M. gluteus maximus

Tractus iliotibialis

M. gluteus medius

M. gluteus minimus

M. obturator internus

M. gemellus sup.

M. gemellus inf.

Oberschenkel

ventral

M. pectineus

M. sartorius

**M. adductor
brevis**

**M. rectus
femoris**

**M. adductor
longus**

**M. vastus
lat.**

**M. adductor
magnus**

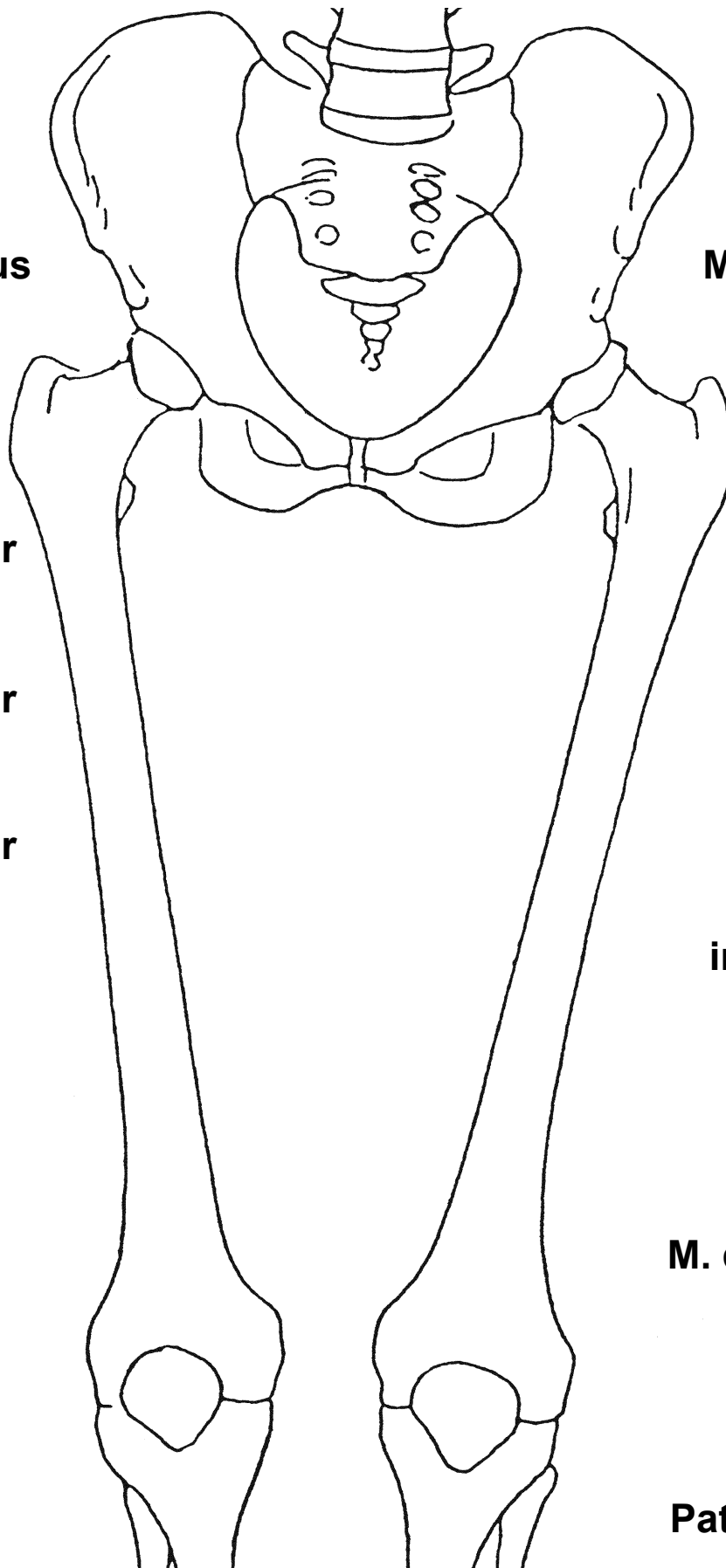
**M. vastus
intermedius**

M. gracilis

**M. vastus
med.**

**M. quadriceps
femoris**

Patellarsehne



Oberschenkel

dorsal

**Ischio-
crurale
Muskeln
("Hamstrings")**

**M. biceps
femoris,
langer Kopf**

**M. biceps
femoris,
kurzer
Kopf**

**M. semi-
tendinosus**

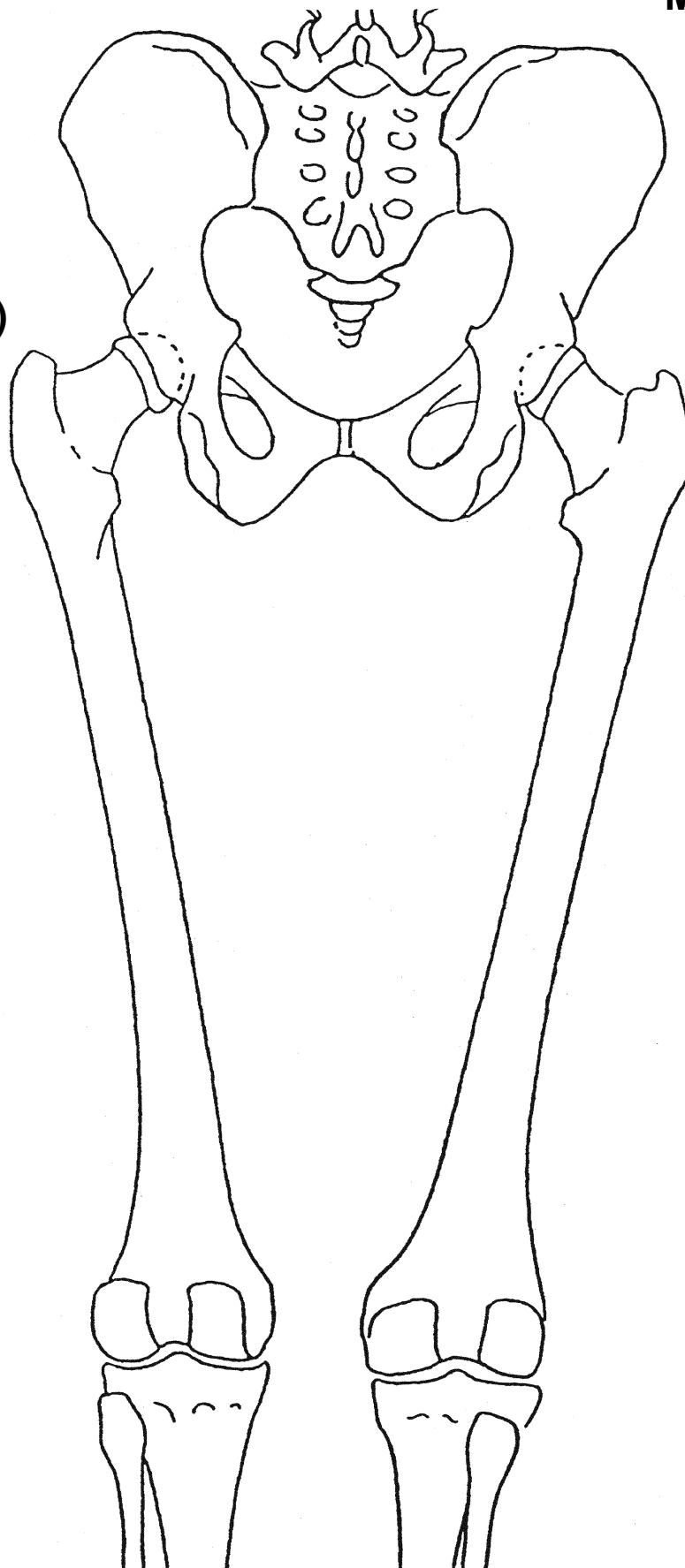
**M. semi-
membranosus**

**Kniegelenk-
kapsel**

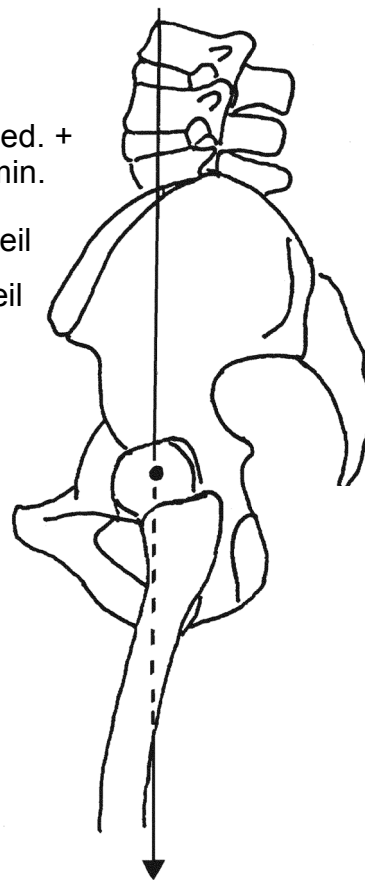
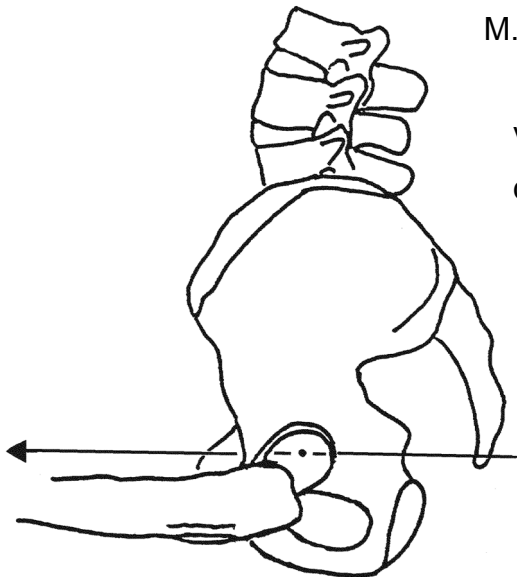
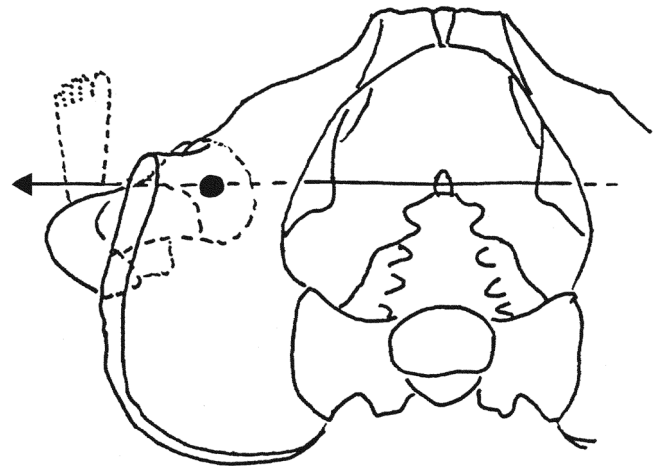
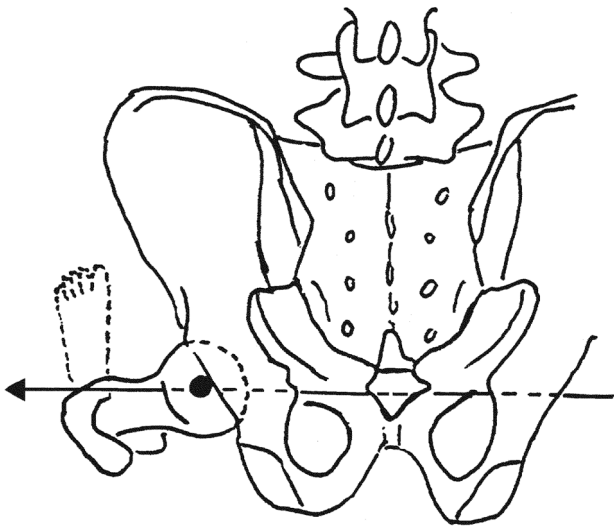
Pes anserinus

**M. tensor
fasciae
latae**

**Tractus
ilio-
tibialis**



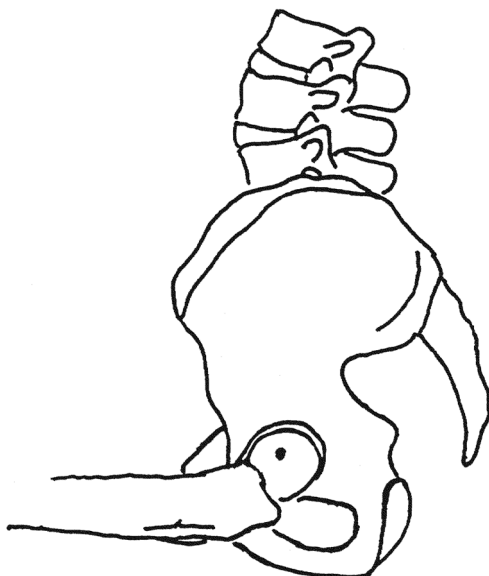
Hüfte und Oberschenkel I



Rotation

M. gluteus med. + min.

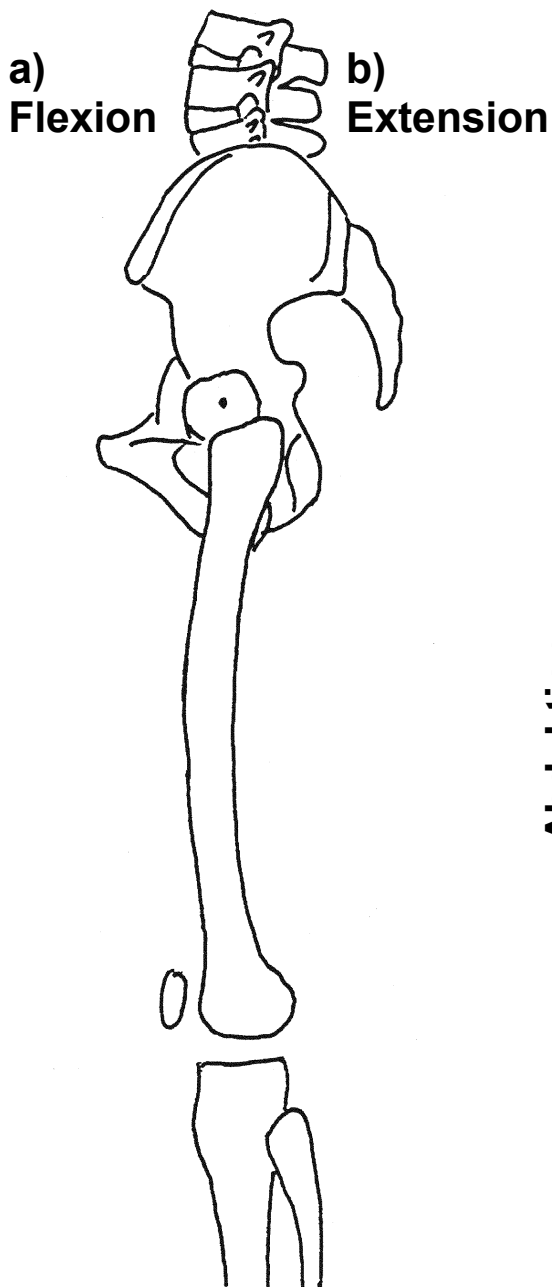
ventraler Teil
dorsaler Teil



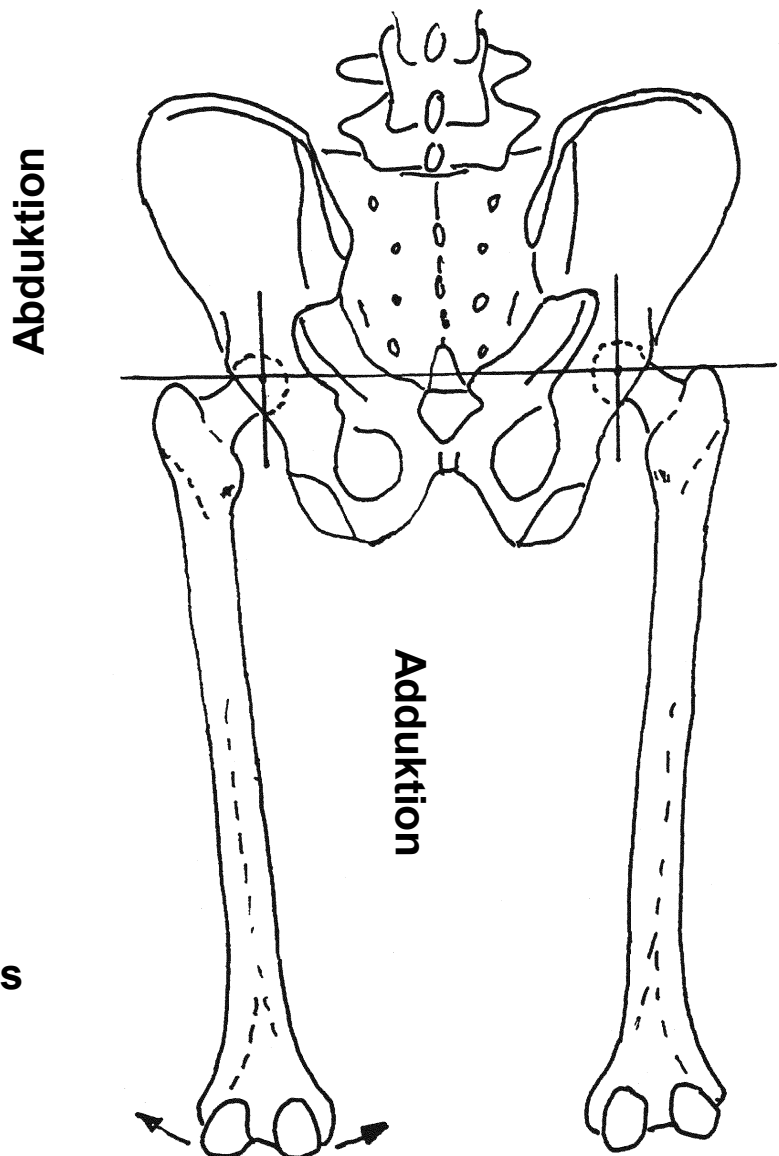
M. gluteus max.
medialer Teil
lateraler Teil

Beugung /
Streckung

Hüfte und Oberschenkel II



- 1) a) M. iliopsoas
b) M. gluteus max. (tief)
- 2) a) M. tensor fasciae latae
b) M. gluteus max. (oberfl.)
- 3) a) M. rectus fem.
+ M. sartorius
b) ischio-crurale Musk.
(Hamstrings)



- 4) Adduktoren
a) M. pectineus
b) M. adductor magnus
- 5) M. glut. med. + min.
a) ventrale
b) dorsale Teile

Muskelfunktionen am Hüftgelenk

	Flexion = Anteversion	Extension = Retroversion	Außenrotation	Innenrotation	Abduktion	Adduktion
M. psoas maj.	+++		+			
M. iliacus	+++		+			
M. gluteus max.		+++	+++		+	+
M. piriformis			++		+	
M. gemellus sup.			++			
M. obturatorius int.			+++			
M. gemellus inf.			++			
M. obturatorius ext.			++			
M. quadratus femoris			+++			+
M. gluteus med.	+	+	+ ²	++	+++	
M. gluteus min.	+	+	+ ²	++	++	
M. pectineus	+		+			+++
M. adductor lon.	+	+ ¹				+++
M. adductor bre.	+	+ ¹				+++
M. adductor magnus		+		+		+++
M. tensor fasciae latae	++			++	+	
M. gracilis	+					++
M. rectus femoris	++					
M. sartorius	+		+			
M. biceps femoris		+				
M. semimembranosus		+				
M. semitendinosus		+				

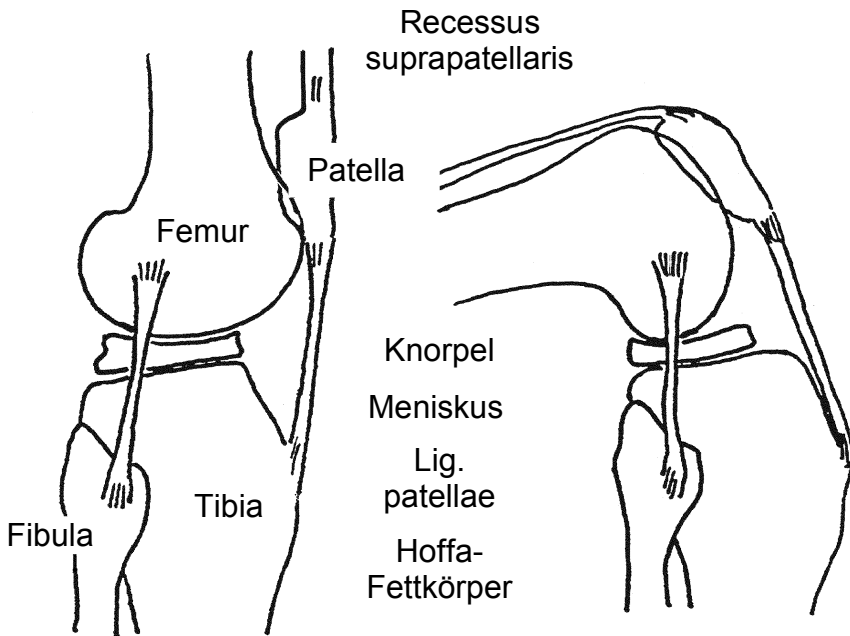
¹ ab 80° Flexion ² in Extension

Kniegelenk, Menisken

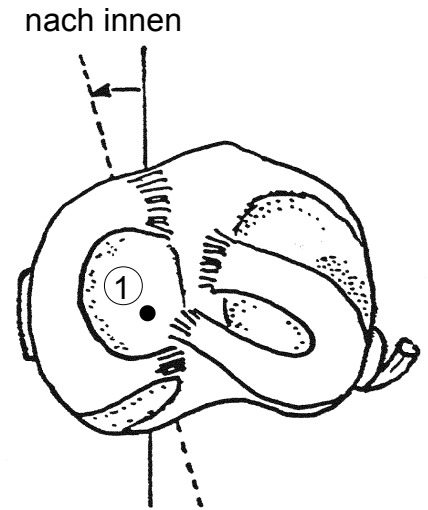
Streckung

Beugung

Rotation



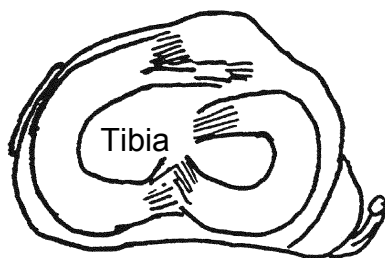
von lateral



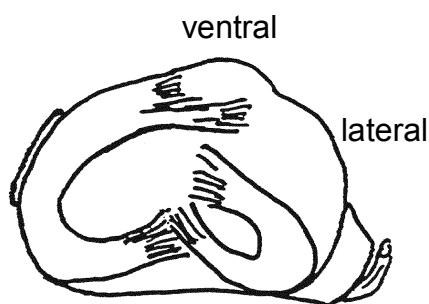
von proximal

Innenmeniskus

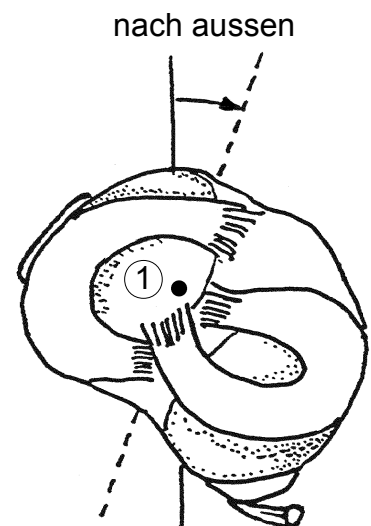
Aussenmeniskus



Stratum fibrosum
Stratum synoviale

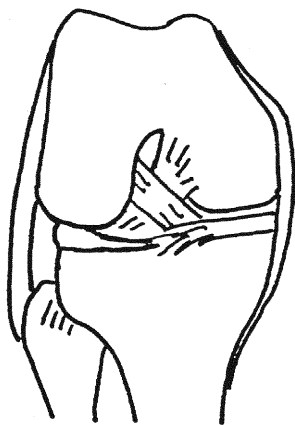


von proximal

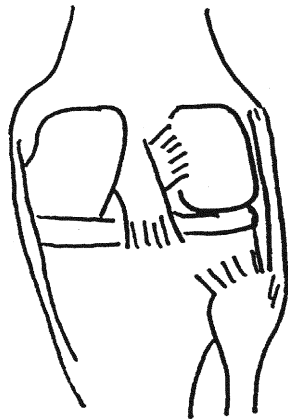


① = Drehachse

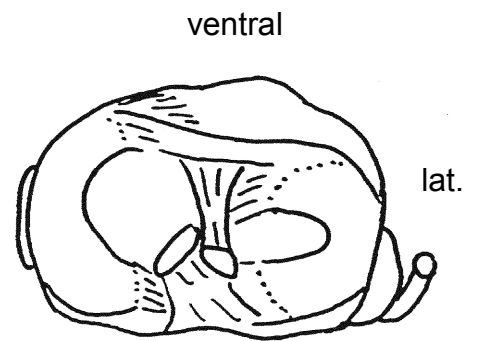
Kniegelenk, Seiten- und Kreuzbänder



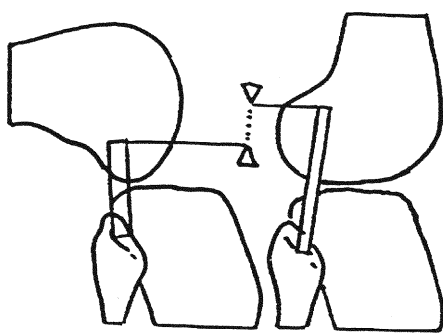
ventral



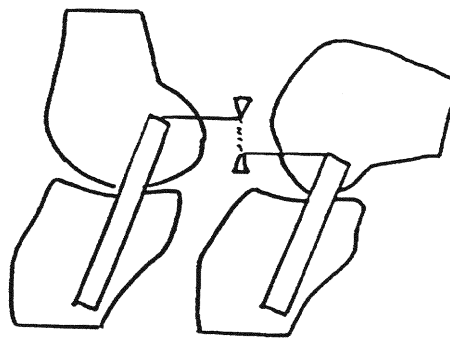
dorsal



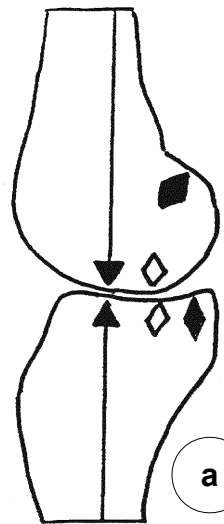
proximal



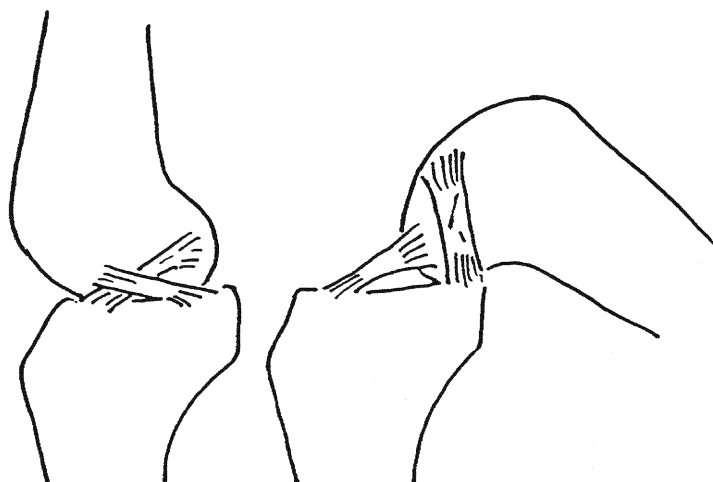
lateral



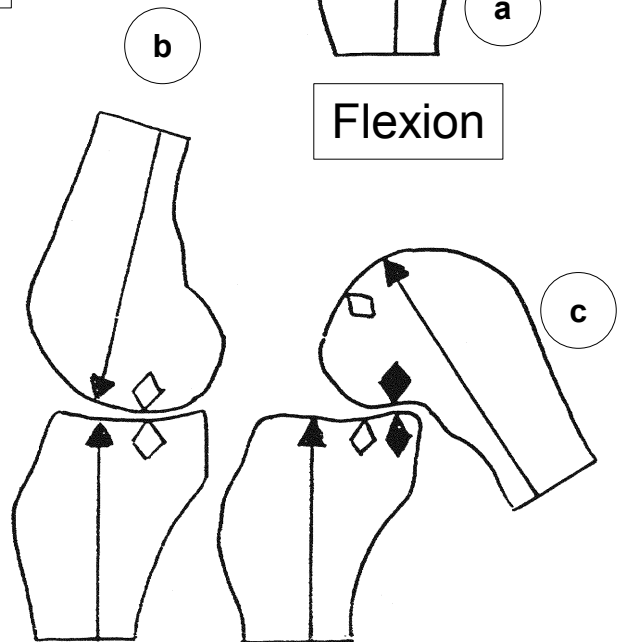
medial



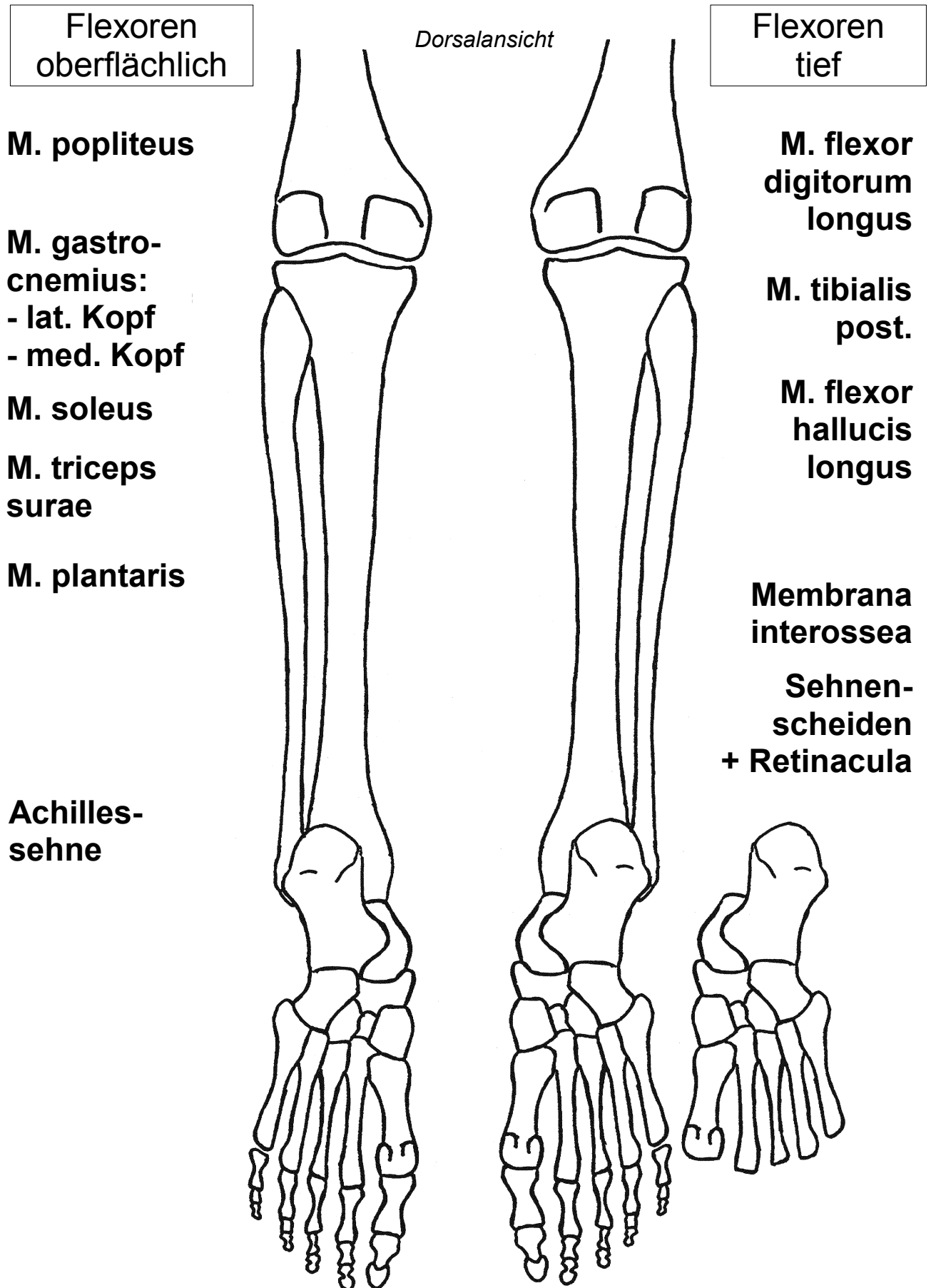
Flexion



Längsschnitt



Unterschenkel



Muskelfunktionen am Kniegelenk

	Flexion	Extension	Außenrotation	Innenrotation
M. gracilis ¹	++			+
M. sartorius ¹	++			++
M. semitendinosus ^{1,2}	+++			++
M. semimembranosus ²	+++			++
M. biceps femoris ²	+++		++	
M. gluteus max.		+ ⁴	+	
M. tensor fasciae latae		+ ⁴	+	
M. rectus femoris ³		+++		
M. vastus medialis ³		+++		
M. vastus lat. ³		+++		
M. vastus intermedius ³		+++		
M. popliteus	+			+
M. gastrocnemius	+			
M. plantaris	+			

¹ Ansatz = Pes anserinus

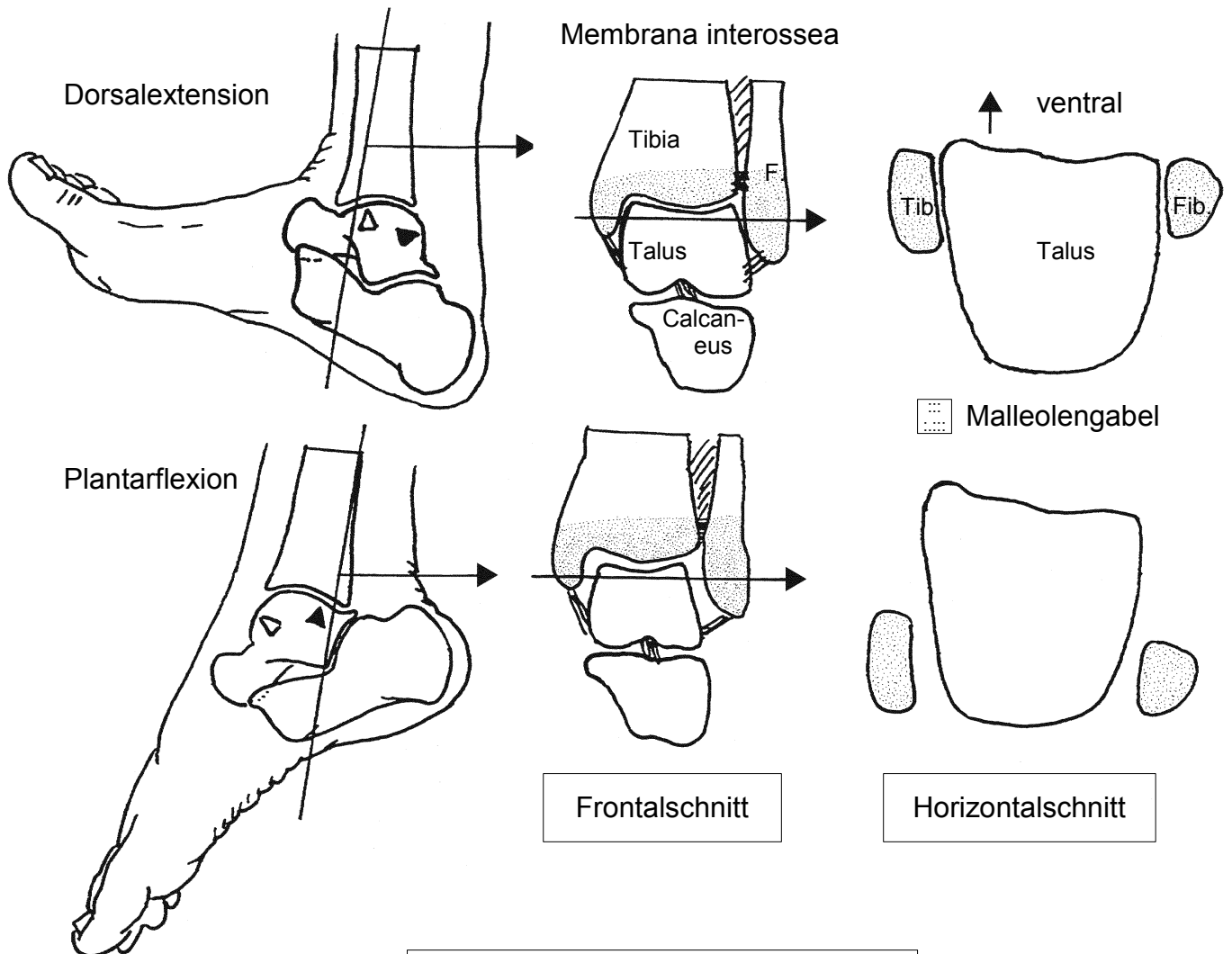
² ischiokrurale Muskeln

³ M. quadriceps femoris

⁴ nur Stabilisierung der Streckstellung

Fuss, Sprunggelenke I

Oberes Sprunggelenk



Unteres Sprunggelenk



Eversion / Pronation

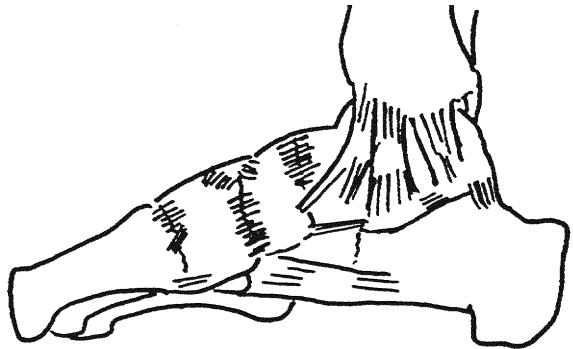
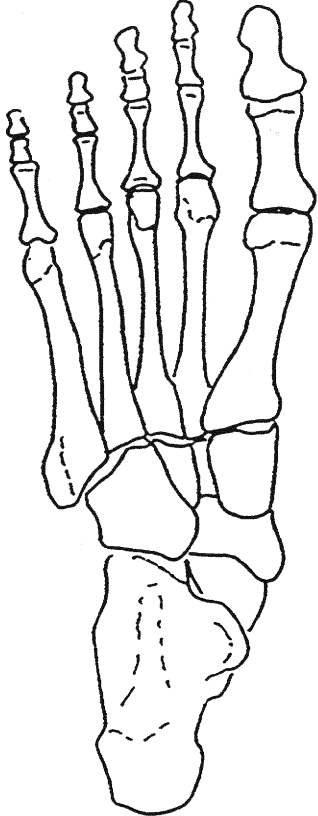
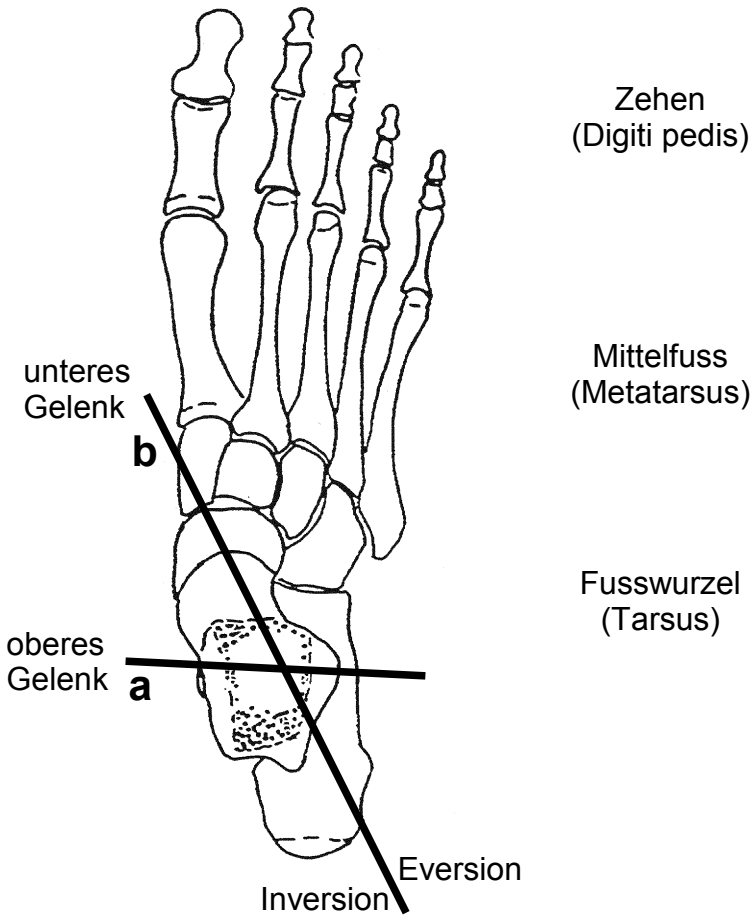


Inversion / Supination

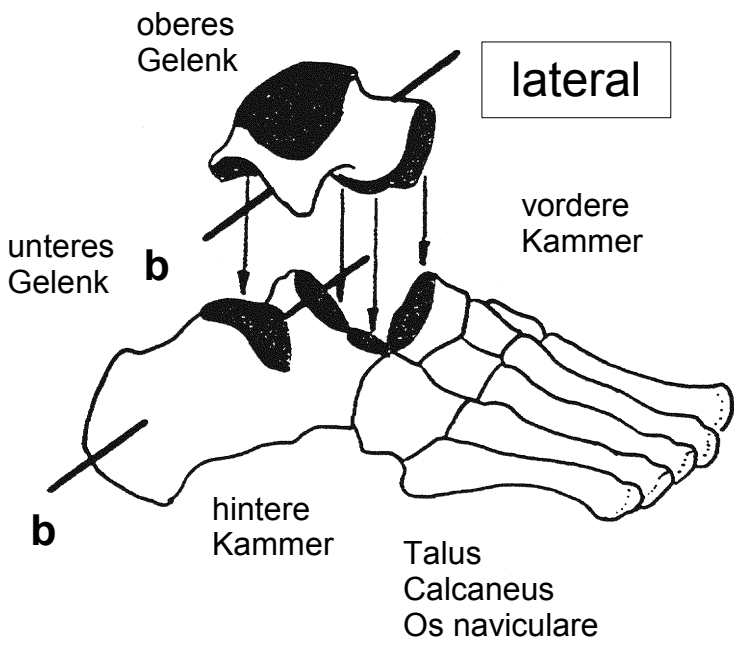
Fuss, Sprunggelenke II

dorsal

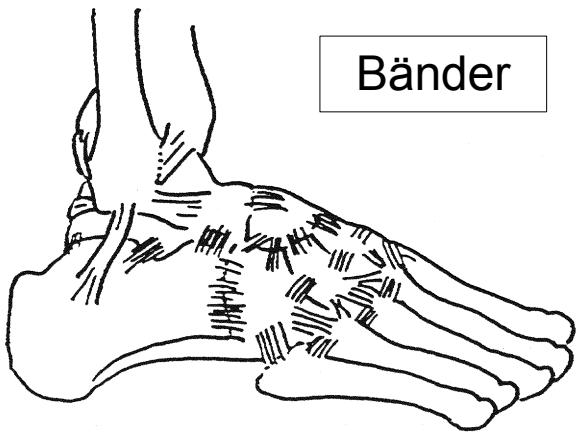
plantar



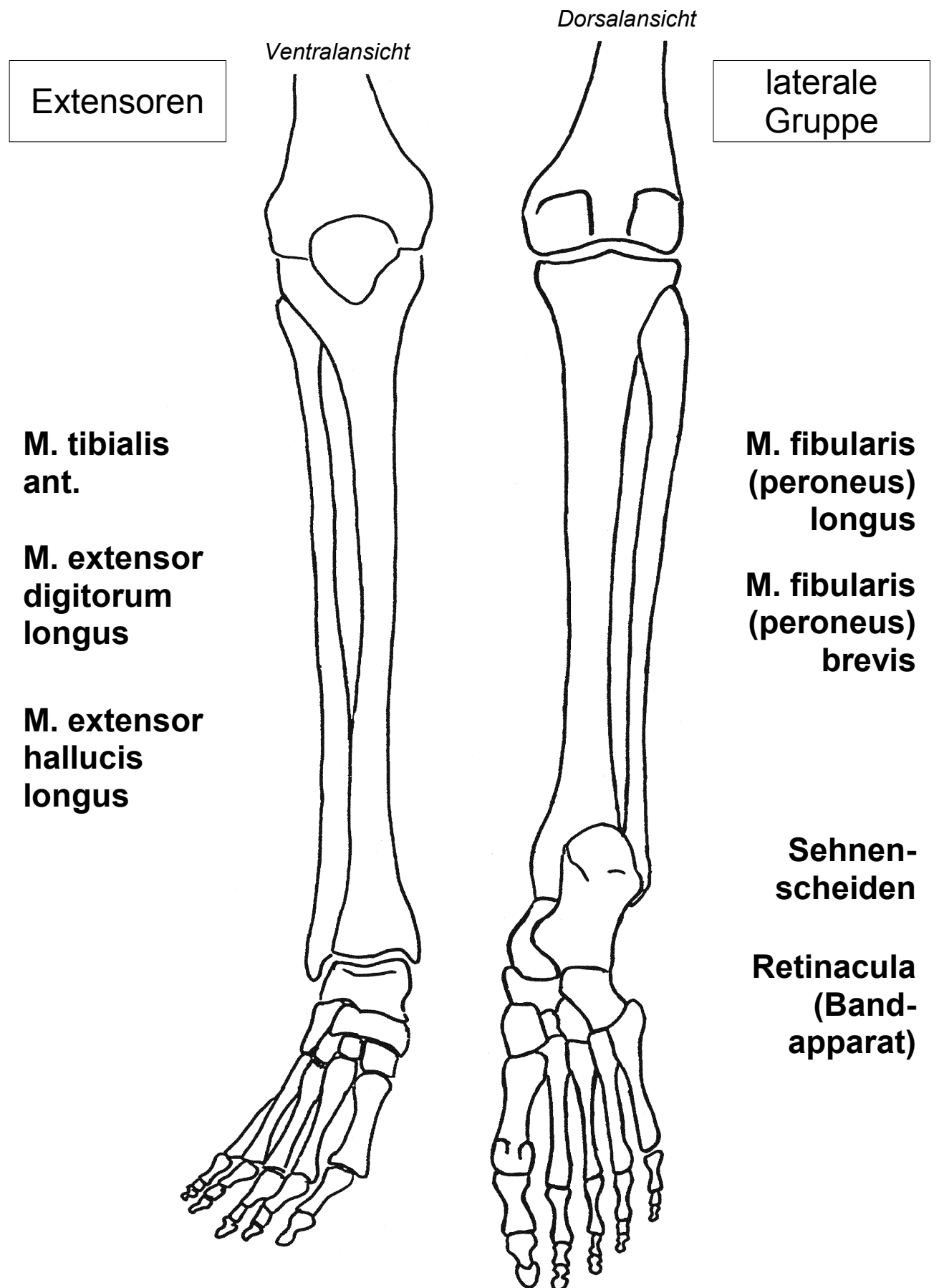
lateral



Bänder



Unterschenkel



Muskelfunktionen an den Sprunggelenken

	Plantarflexion	Dorsalextension	Eversion / Pronation	Inversion / Supination
M. plantaris	+			+
M. gastrocnemius ¹	+++			+++
M. soleus ¹	+++			+++
M. tibialis ant.		+++		+
M. extensor digitorum lon.		++	++	
M. extensor hallucis lon.		+	+	
M. fibularis lon. ²		++	++	
M. fibularis brevis		+	++	
M. tibialis post. ²		+		++
M. flexor digitorum lon.		+		+
M. flexor hallucis lon.		++		+

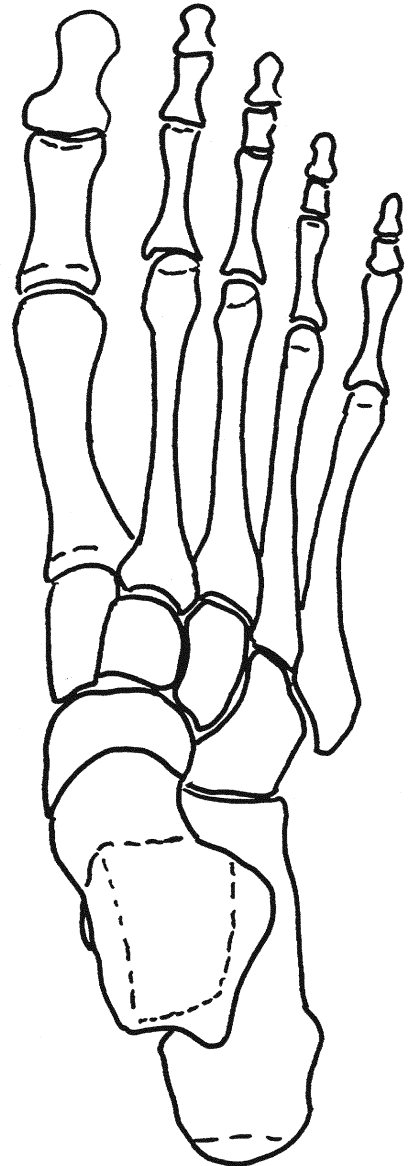
¹ zusammen = M. triceps surae mit Achillessehne

² verspannen Quer- und Längsgewölbe

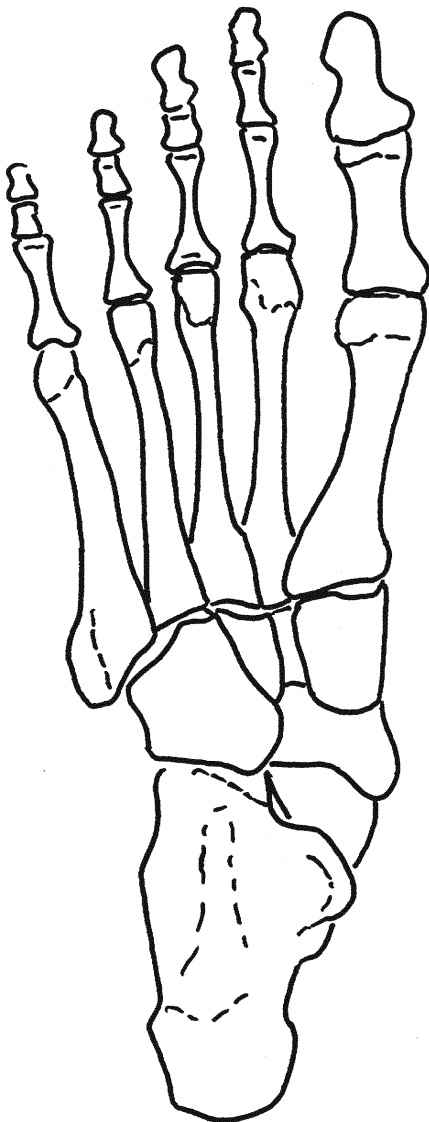
Fuss

**M. extensor
hallucis
brevis**

**M. extensor
digitorum
brevis**



plantar



**M. flexor
hallucis
brevis**

**M. flexor
digitorum
brevis**

dorsal