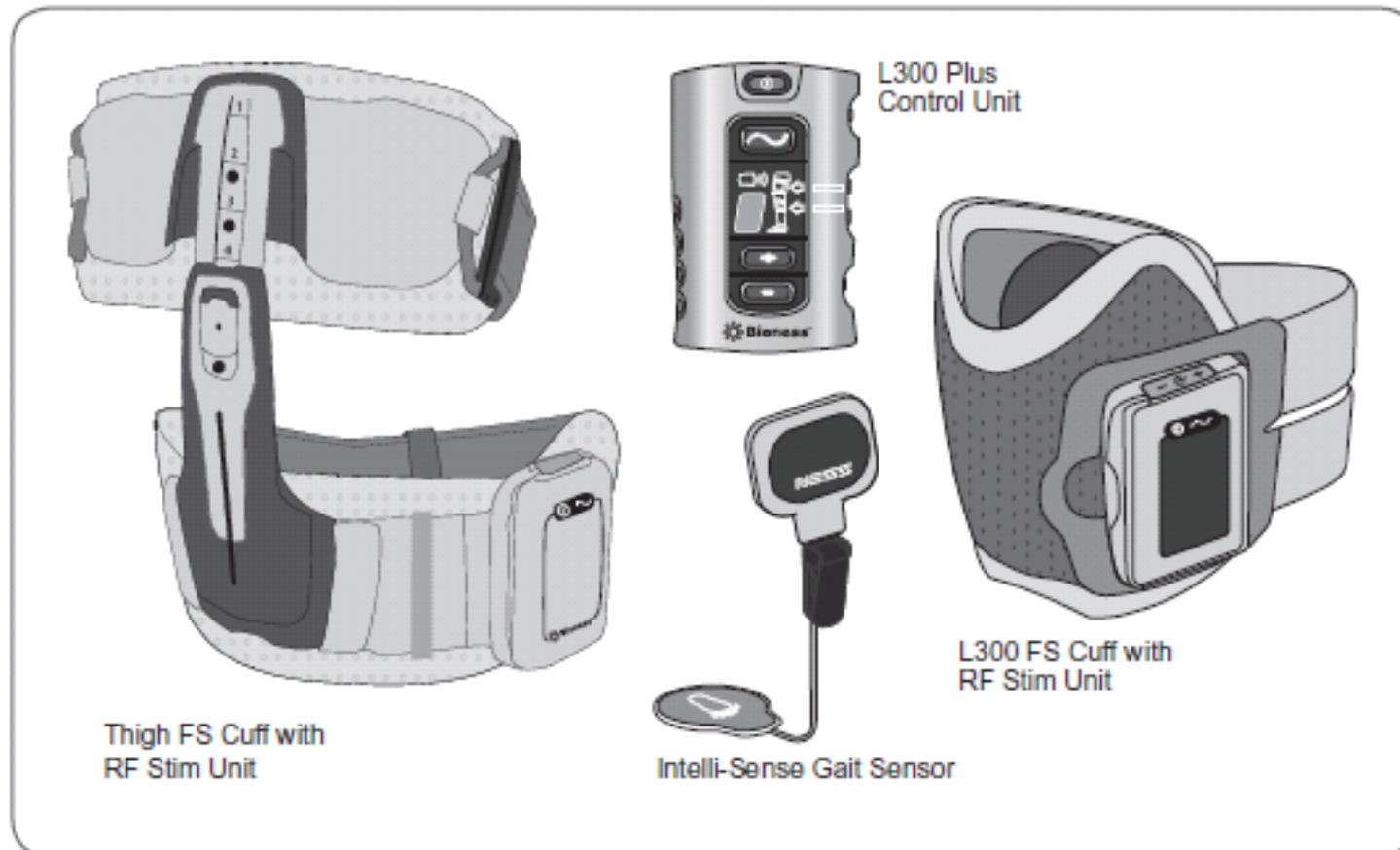


NESS L300[®] Plus



NESS L300[®] Plus System

Une technologie innovante



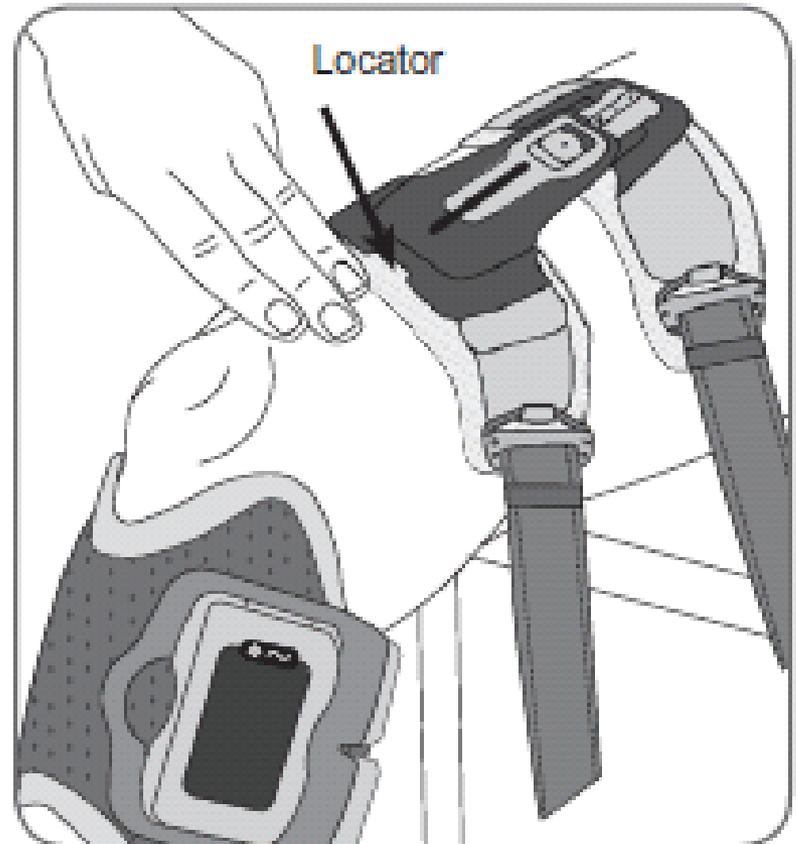
Manchon de cuisse

- 2 Panneaux, un proximal, un distal l'unité de stimulation se trouve sur celui-ci.
- Ajustement à la taille de la cuisse
- Le localisateur garanti la précision et le contact répété



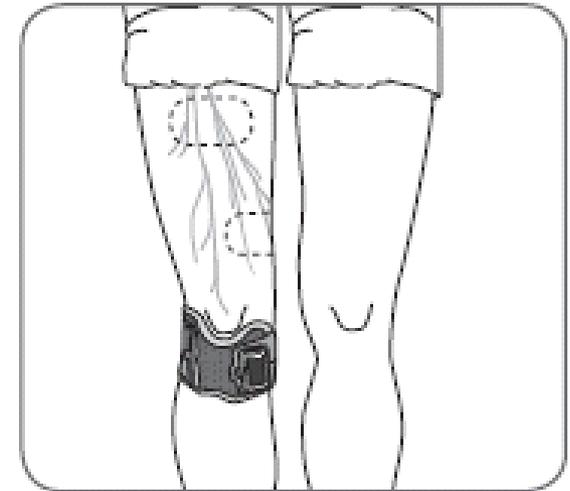
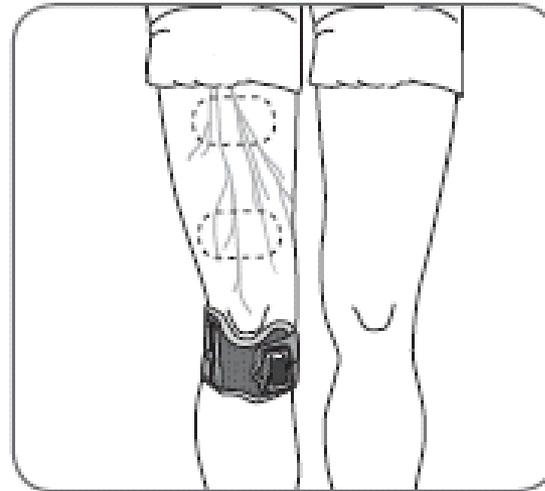
Manchon de cuisse - Localisateur

- Assure la reproductibilité
- Localisateur de position:
 - Placé sur la ligne médiale de la patella (quadriceps) ou du creux poplité (ischios)
 - Minimum 3 travers de doigts du bord supérieur de la patella
 - Minimum 4 travers de doigts du creux poplité

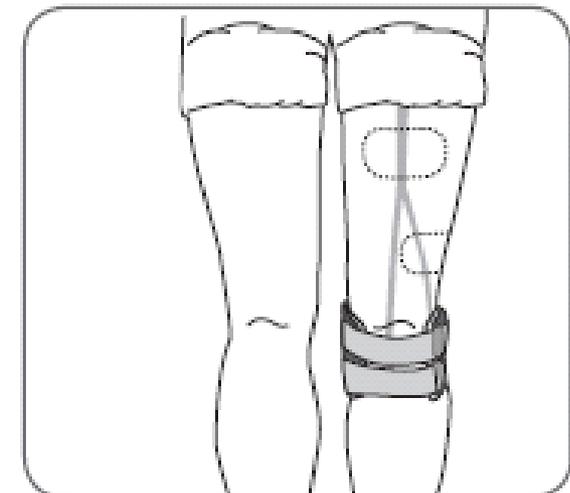
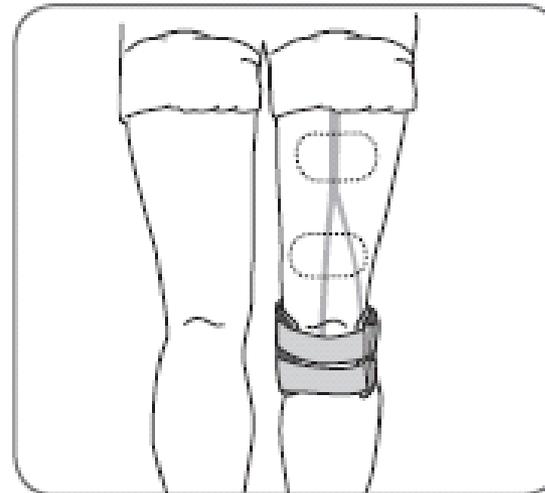


Manchon de cuisse électrodes en tissu

- **Positionnement Quadriceps**

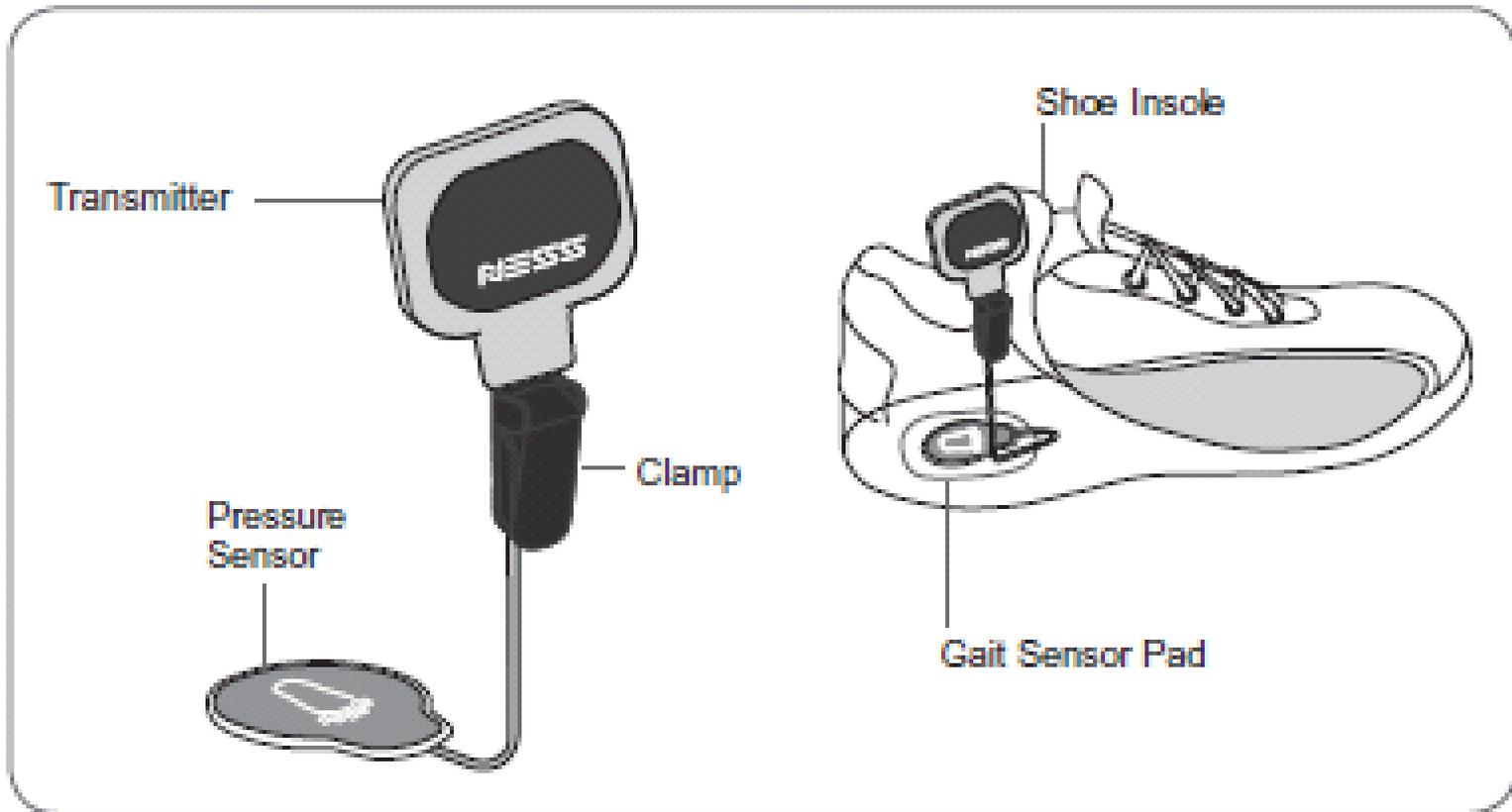


- **Positionnement Ischios**



NESS L300[®] Plus

Capteur Intelli-Sense Gait™



Télécommande L300 Plus

- Communication sans fil
- Démarrer / arrêter
- Test la position des manchons
- Sélection du mode
- Ajuste l'intensité de la stimulation
- Alertes audio/visuelles feedback



Logiciel NESS L300 Plus

NESS L300[®]Plus

Intelli-Gait Plus Software



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Version 1.1.0.6

Sélection de la configuration du système

Setup Settings - John D. 02:59

Select System Configuration.

Thigh (checked)
Hamstrings
Quadriceps

L300

Setup Stim Gait Training

Exit | Patients | Settings | History | Tools

Detailed description: This screenshot shows the 'Select System Configuration' window. At the top, a blue header bar contains the Windows logo, the text 'Setup Settings - John D.', and a timer '02:59'. Below the header, the title 'Select System Configuration.' is displayed. On the left, a 3D anatomical model of a human leg is shown with the thigh muscle highlighted in red. To the right of the model, there are three buttons: 'Thigh' (with a green checkmark and a green circle), 'Hamstrings' (with a green circle), and 'Quadriceps' (with a grey circle). Below these buttons is a 'L300' button. At the bottom, there are four tabs: 'Setup', 'Stim', 'Gait', and 'Training'. A navigation bar at the very bottom contains the text 'Exit | Patients | Settings | History | Tools' and a keyboard icon.

Setup Settings - John D. 02:59

Select System Configuration.

Thigh
Hamstrings
Quadriceps (checked)

L300

Setup Stim Gait Training

Exit | Patients | Settings | History | Tools

Detailed description: This screenshot shows the 'Select System Configuration' window with a different selection. The header bar is identical to the first screenshot. The 3D anatomical model of the leg now has the quadriceps muscle highlighted in red. The 'Thigh' button has a grey circle, 'Hamstrings' has a grey circle, and 'Quadriceps' has a green circle. The 'L300' button remains below. The tabs at the bottom are 'Setup', 'Stim', 'Gait', and 'Training'. The navigation bar at the bottom contains 'Exit | Patients | Settings | History | Tools' and a keyboard icon.

Paramètres de marche, ischios-jambiers

Phase d'appui

Gait Settings - John D. 03:00

Thigh **Hams.**

Start

Delay (%) 10 End (%) 10

47

10% 30% 50% 70% 90% 10% 30% 50% 70% 90%

Swing Control Stance Control

Default

Setup Stim Gait Training

Exit | Patients | Settings | History | Tools

Paramètres de marche, ischios-jambiers

Phase oscillante

The screenshot displays the 'Gait Settings' interface for a user named 'Joe D.'. The interface is divided into several sections:

- Header:** Shows the Windows logo, the title 'Gait Settings - Joe D.', and system icons for network, volume, and time (08:46).
- Muscle Selection:** On the left, there are two anatomical diagrams of a leg. The top one is labeled 'Thigh' and the bottom one 'L300'. A vertical slider labeled 'Hams.' is set to 65.
- Settings:** Includes a gear icon, a speaker icon, and a green 'Start' button with a power icon.
- Phase Control:** Features two sliders for 'Delay (%)' (set to 30) and 'End (%)' (set to 80). Below these is a trapezoidal graph showing the pulse profile over a 100% gait cycle, with markers at 10%, 30%, 50%, 70%, and 90%.
- Options:** Includes a checked checkbox for 'Swing Control' and an unchecked checkbox for 'Stance Control'. A 'Default' button is also present.
- Navigation:** A bottom bar contains buttons for 'Setup', 'Stim', 'Gait', and 'Training'. Below this is a menu with 'Exit', 'Patients', 'Settings', 'History', and 'Tools', along with a keyboard icon and an arrow.

Paramètres de marche avancés, ischios-jambiers

Durée maximale de la stimulation

The screenshot displays the 'Adv. Gait Settings' interface for a patient named 'John D.'. The interface is divided into several sections:

- Header:** Shows the Windows logo, the title 'Adv. Gait Settings - John D.', a refresh icon, a volume icon, and the time '11:33'.
- Muscle Selection:** On the left, there are two muscle groups: 'Thigh' (with a diagram of the thigh muscle) and 'Hams.' (with a diagram of the hamstring muscle). A vertical slider is positioned between them, with the number '51' displayed in the center.
- Stimulation Parameters:** Four trapezoidal graphs represent the stimulation profiles for 'Swing Ramp Up', 'Swing Ramp Down', 'Stance Ramp Up', and 'Stance Ramp Down'. Each graph has a numerical value of '0.1' in the center, flanked by left and right arrow buttons.
- Max. Duration of Stimulation:** A central box contains the text 'Max. Duration of Stimulation' and a numerical value '4' flanked by left and right arrow buttons, followed by the word 'Seconds' and a question mark icon.
- Buttons:** A large green 'Start' button is located in the top right. A 'Default' button is located in the bottom right of the parameter section.
- Navigation:** At the bottom, there are four tabs: 'Setup', 'Stim', 'Gait', and 'Training'. Below these is a menu bar with 'Exit', 'Patients', 'Settings', 'History', and 'Tools', along with a keyboard icon and an upward arrow.

Paramètres d'entraînement - L300 et manchon

Training Settings - John D. 03:01

L300 **Thigh**

30 47

On Time 5 (4-20 Sec)

Off Time 8 (4-60 Sec)

Ramp Up 1 (0 - 2 Sec)

Ramp Down 1 (0 - 2 Sec)

Total Time 20 (5-60 Min)

Enable specific training intensity ?

Start

Both

Thigh Only

L300 Only

Default

Setup Stim Gait Training

Exit | Patients | Settings | History | Tools

Historique - tableau de données

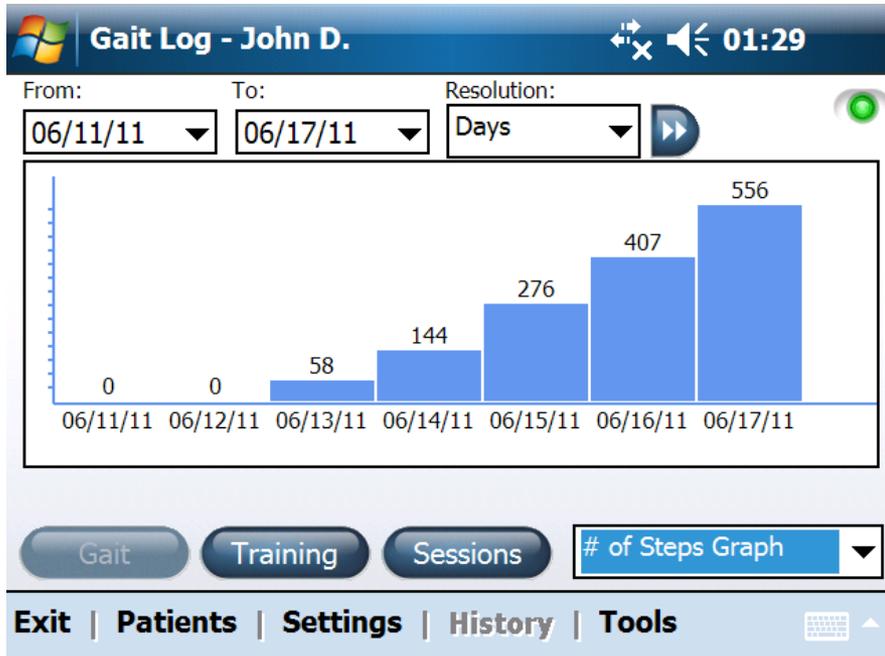
 **Gait Log - John D.**   **01:28**

From: To: Resolution:  

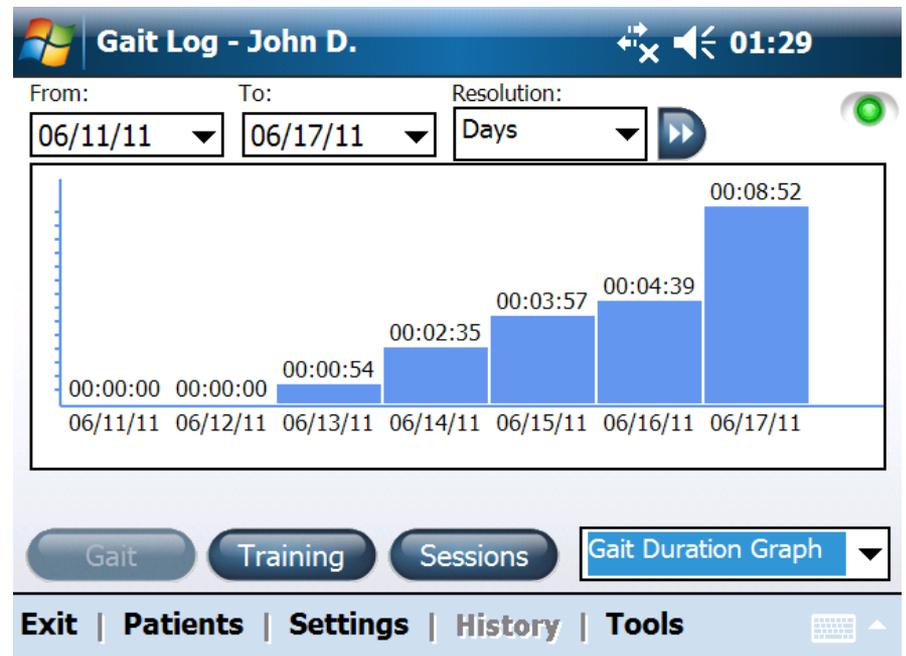
Date	# of Steps	Total	Gait Duration	Total
06/11/11	0	0	00:00:00	00:00:00
06/12/11	0	0	00:00:00	00:00:00
06/13/11	58	58	00:00:54	00:00:54
06/14/11	144	202	00:02:35	00:03:29
06/15/11	276	478	00:03:57	00:07:26
06/16/11	407	885	00:04:39	00:12:05
06/17/11	556	1441	00:08:52	00:20:57
Average:	206		00:03:00	

Exit | **Patients** | **Settings** | **History** | **Tools**  

Historique - graphique

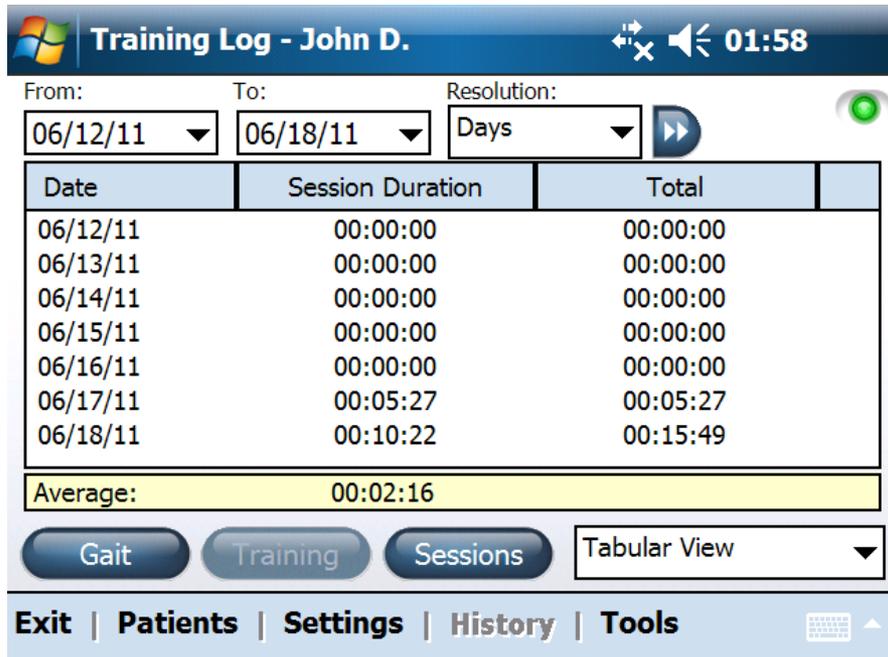


Nombre de pas

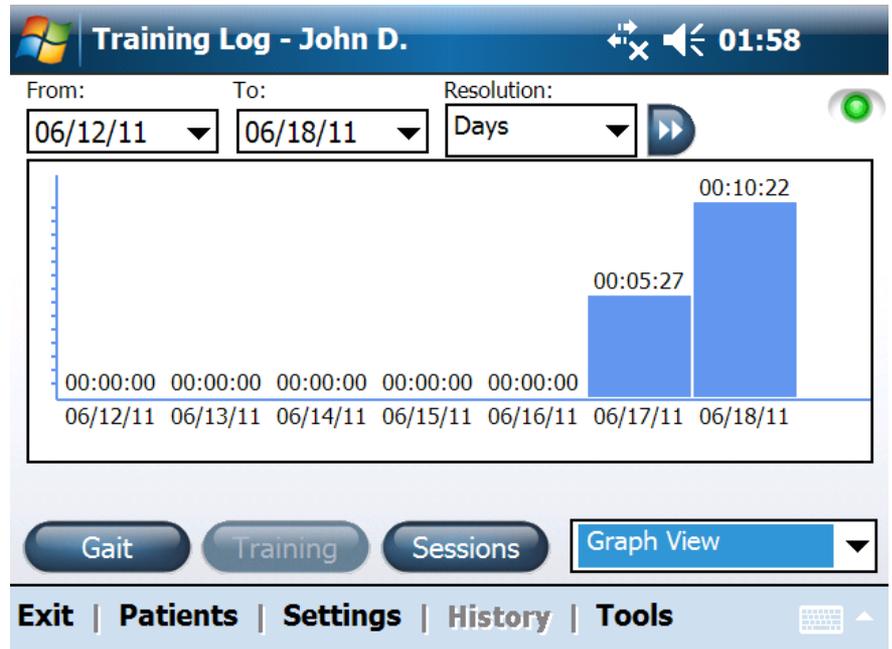


Temps de marche

Historique



Tableau

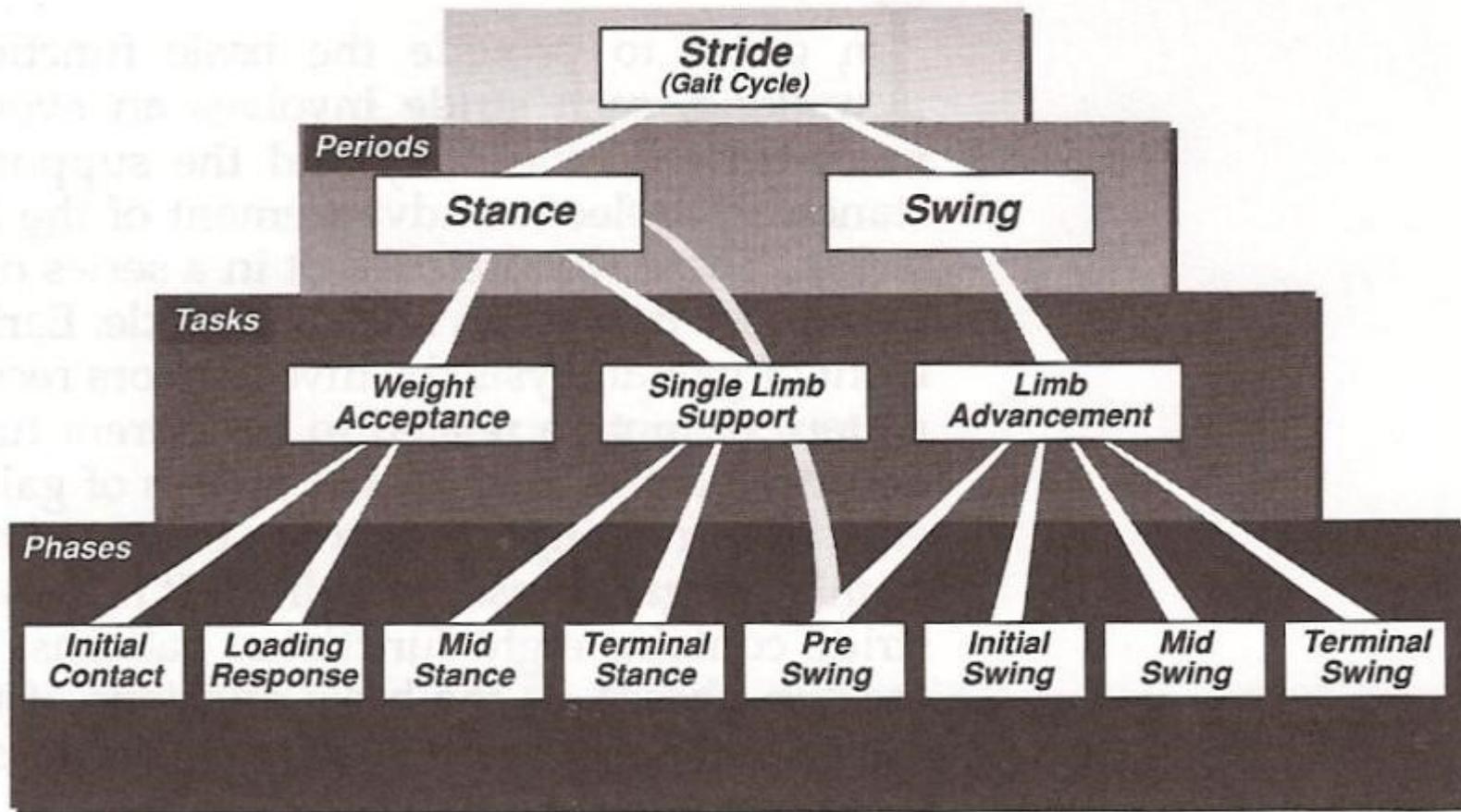


Graphique

Formation NESS L300[®] Plus System



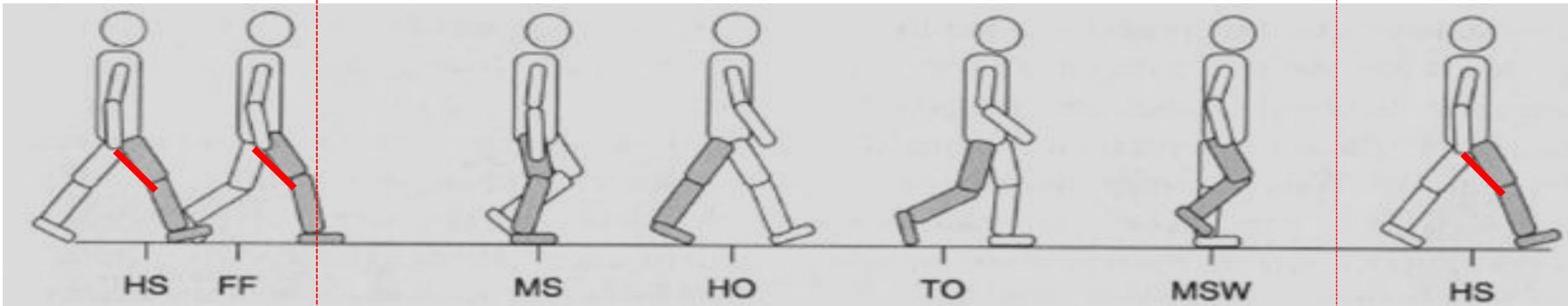
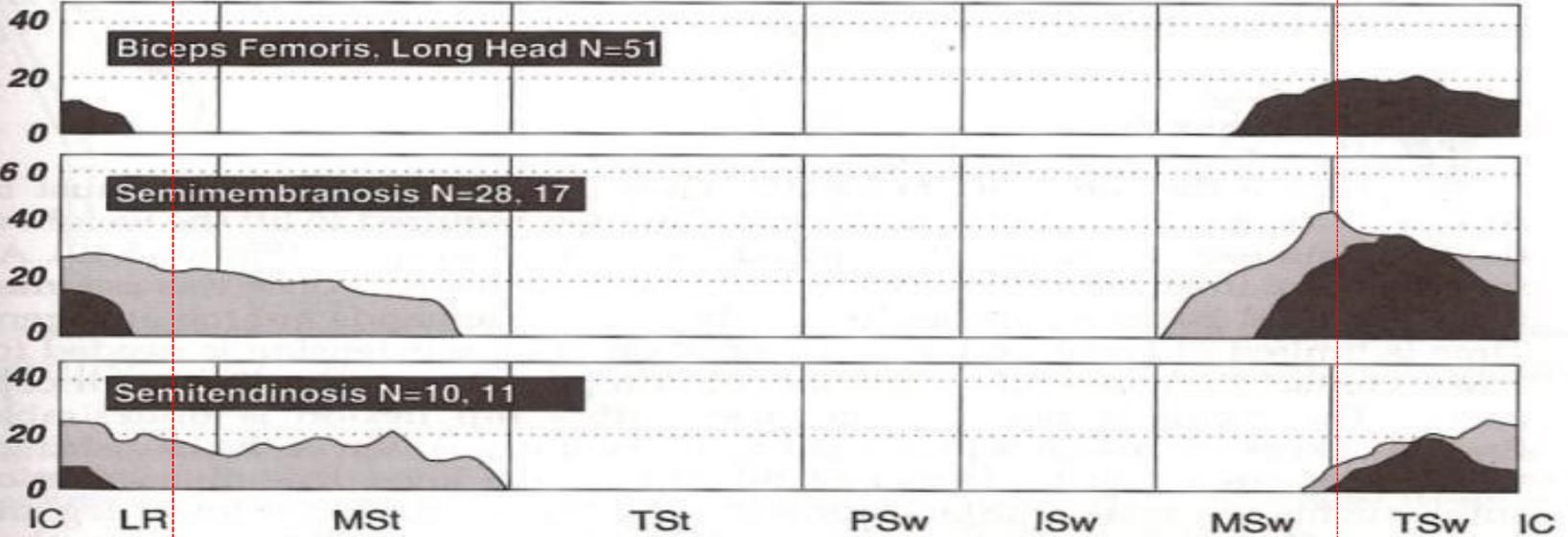
Les différentes étapes du cycle de la marche



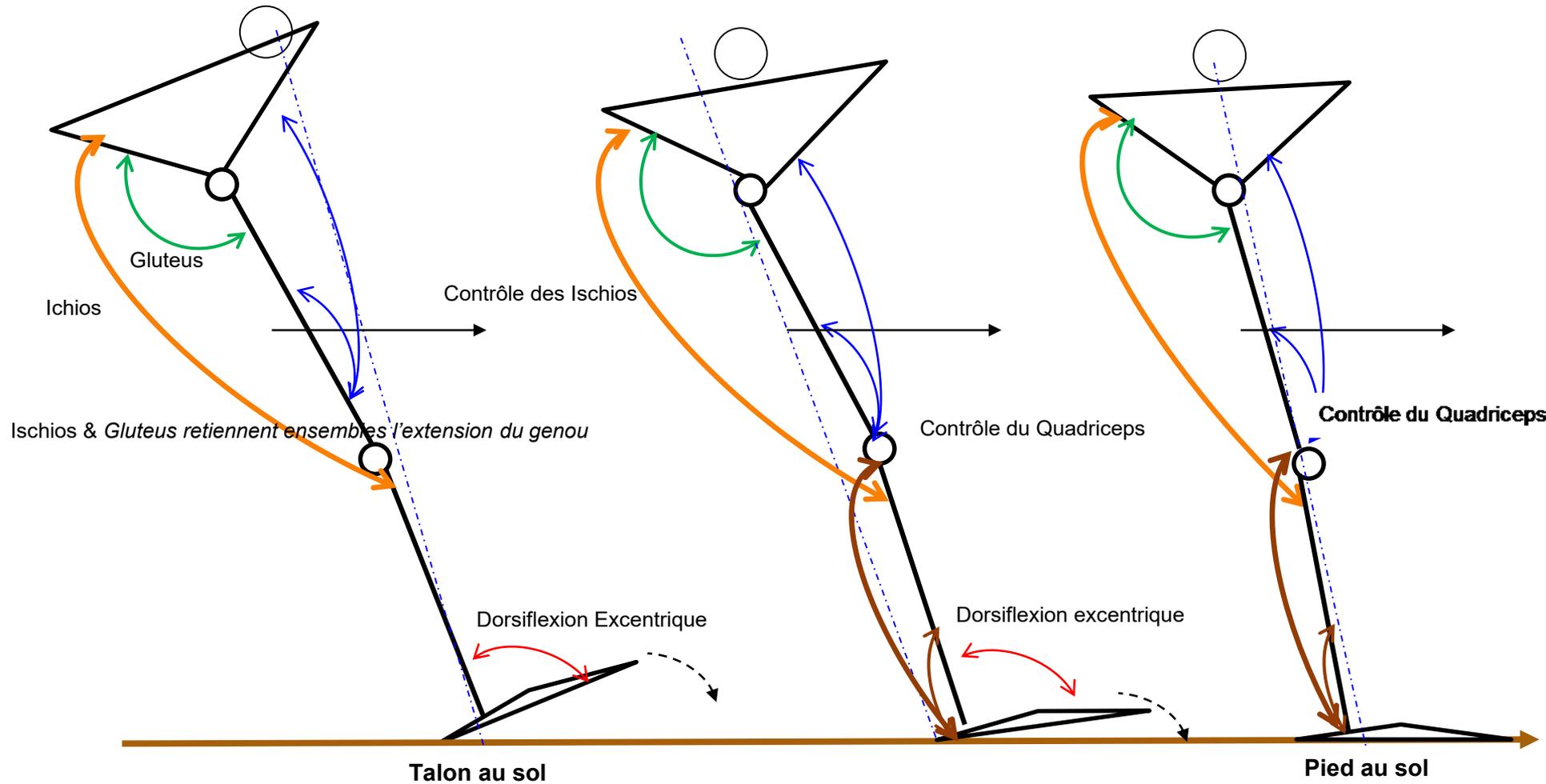
Activité des ischios-jambiers

Knee Flexor Muscles

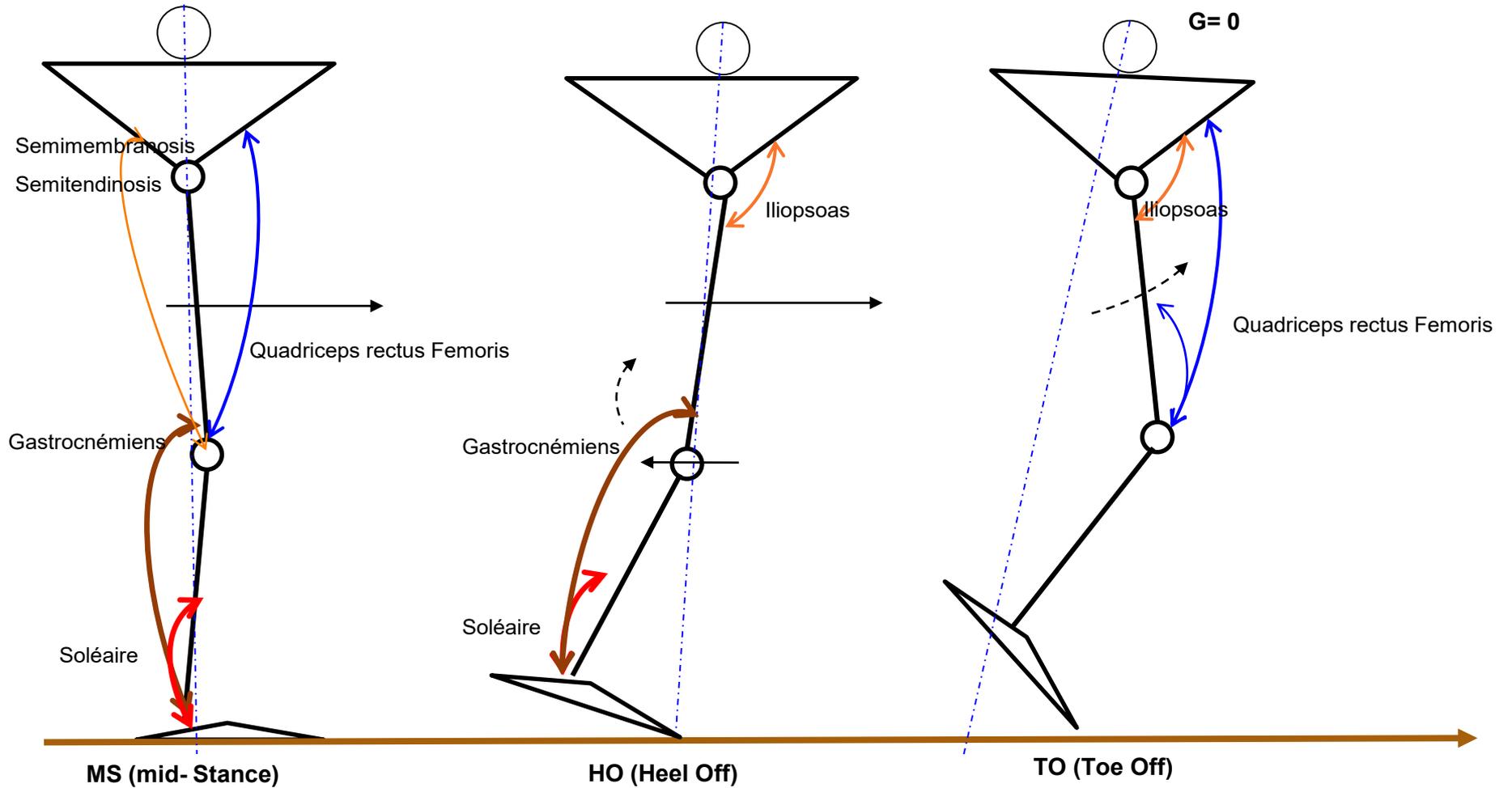
EMG (%MMT)



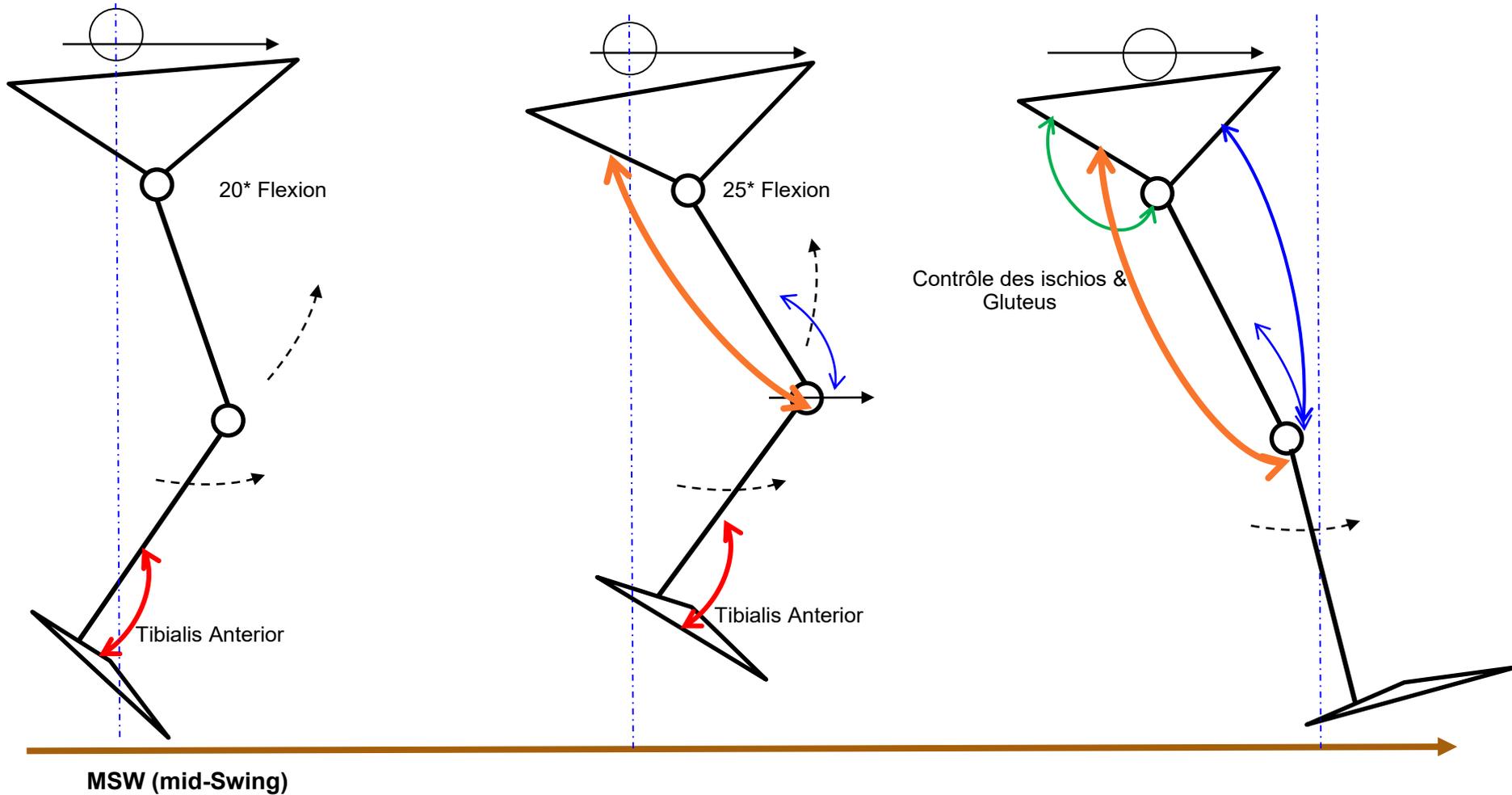
Analyse cinétique au contact initial



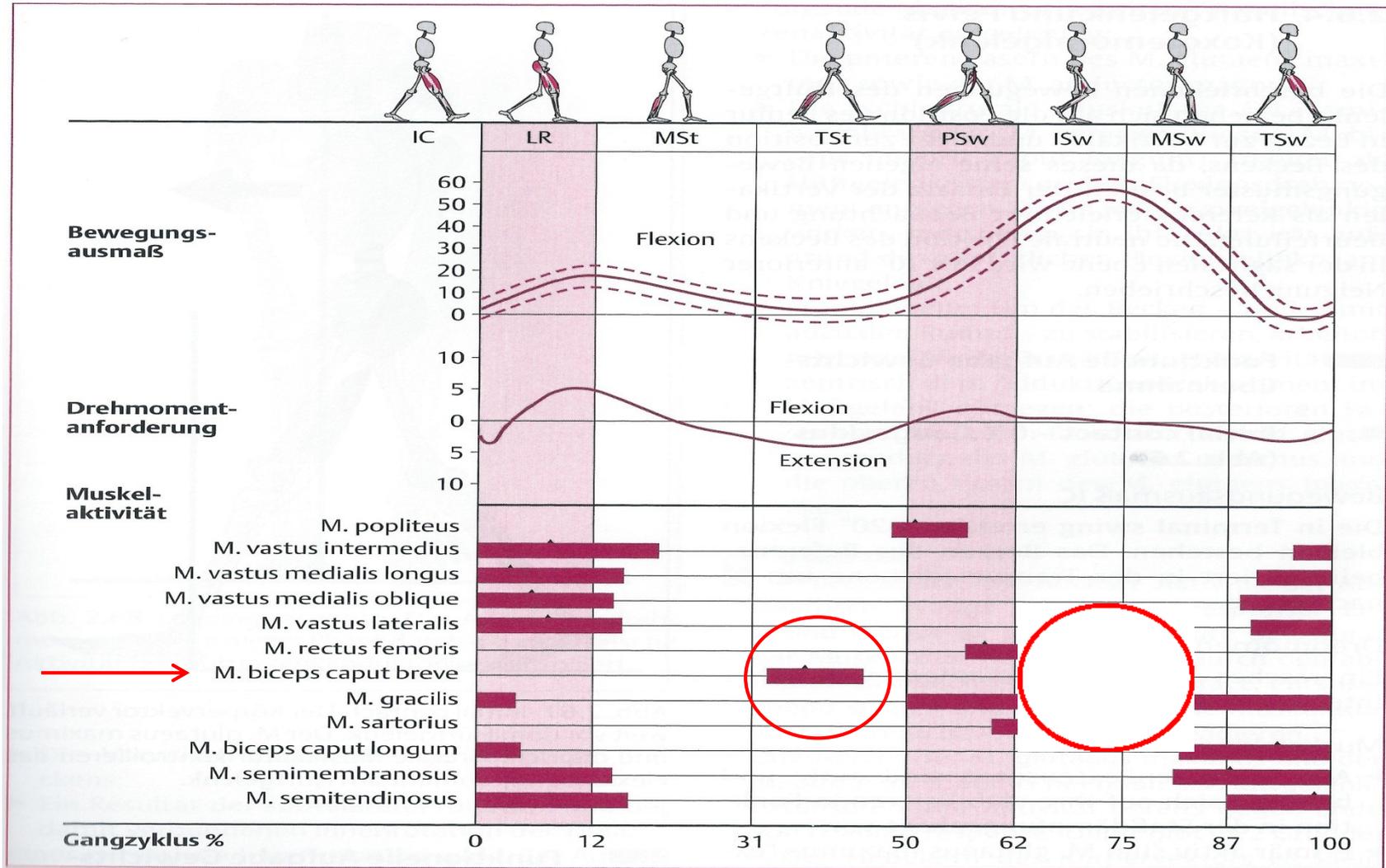
Analyse cinétique en phase d'appui / début de phase oscillante



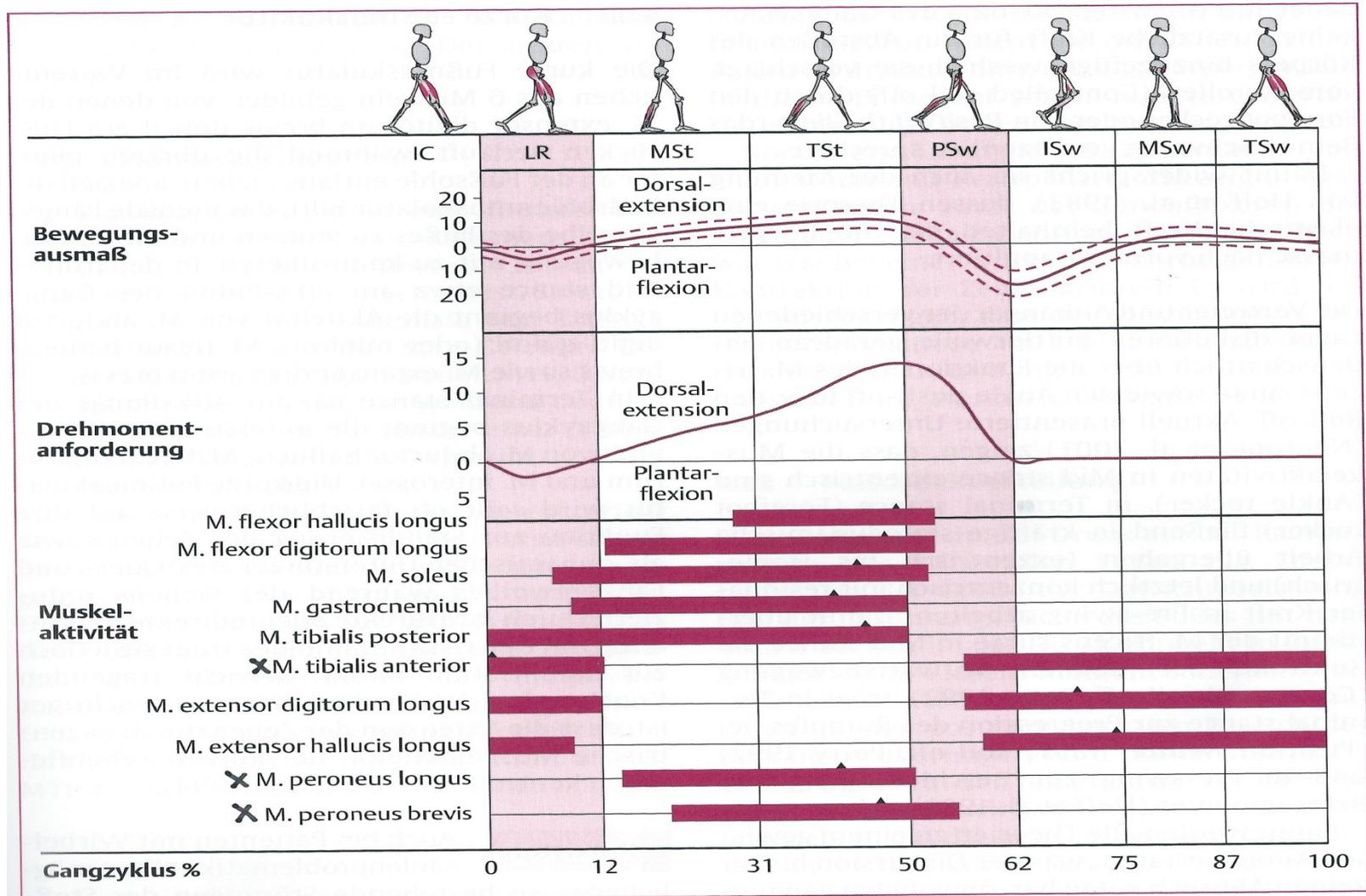
Analyse cinétique en phase oscillante



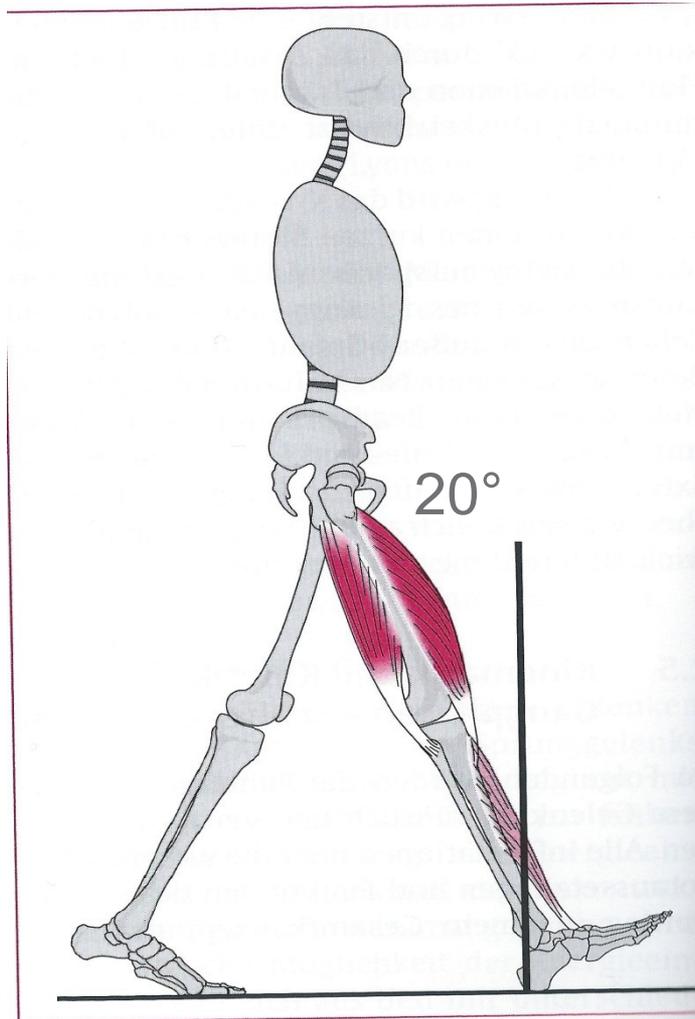
Les muscles de la cuisse lors du cycle de la marche



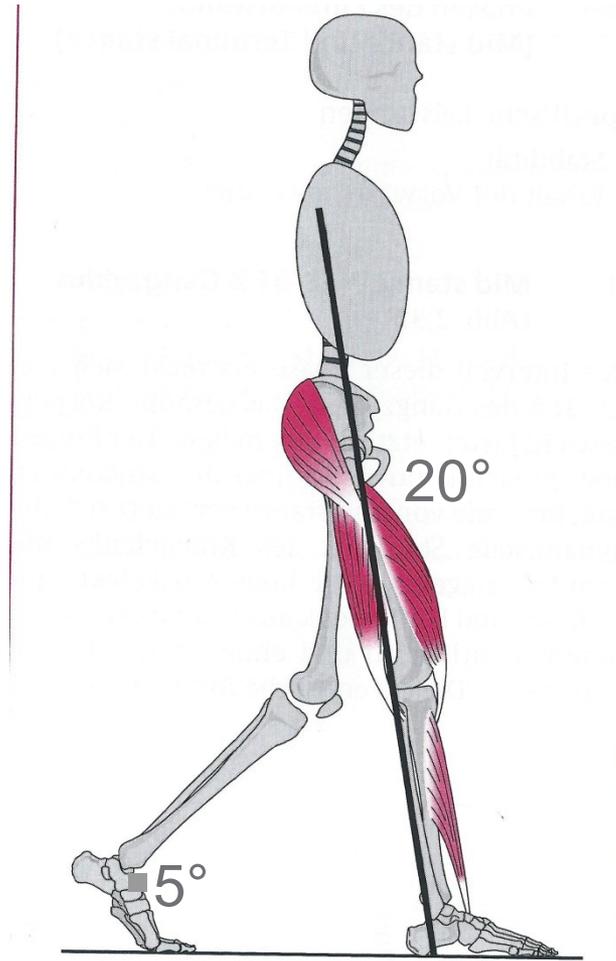
Les muscles de la jambe lors du cycle de la marche



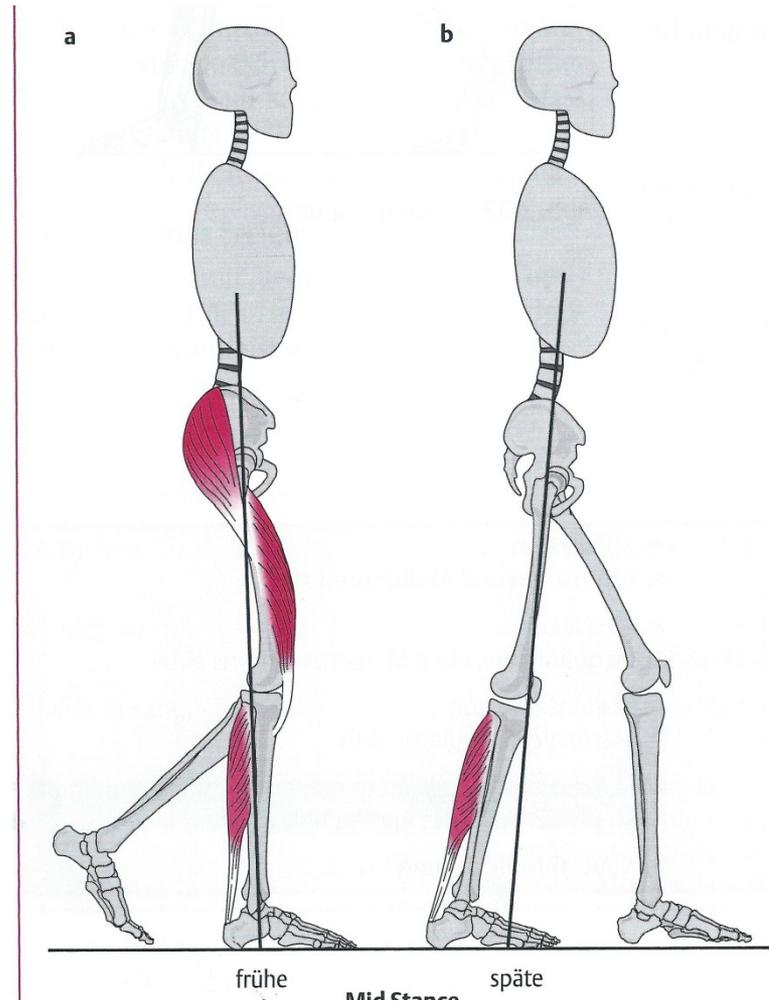
Initial contact 0%



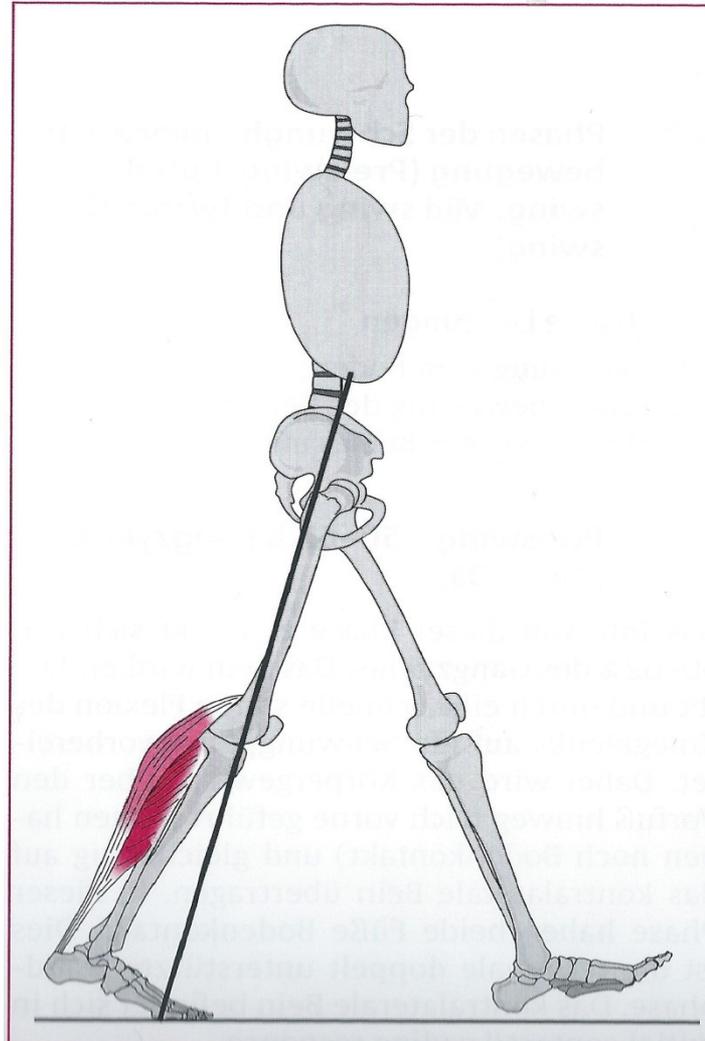
Loading response 0-12%



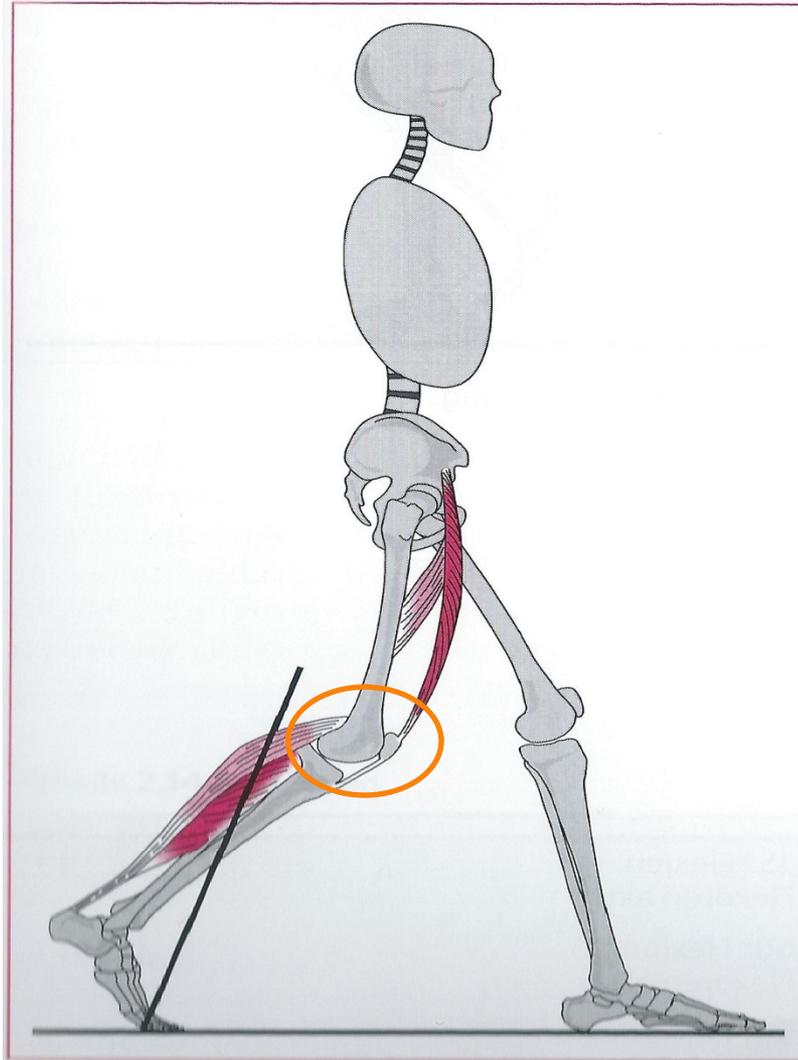
Mid stance 12-31% , early and late phase



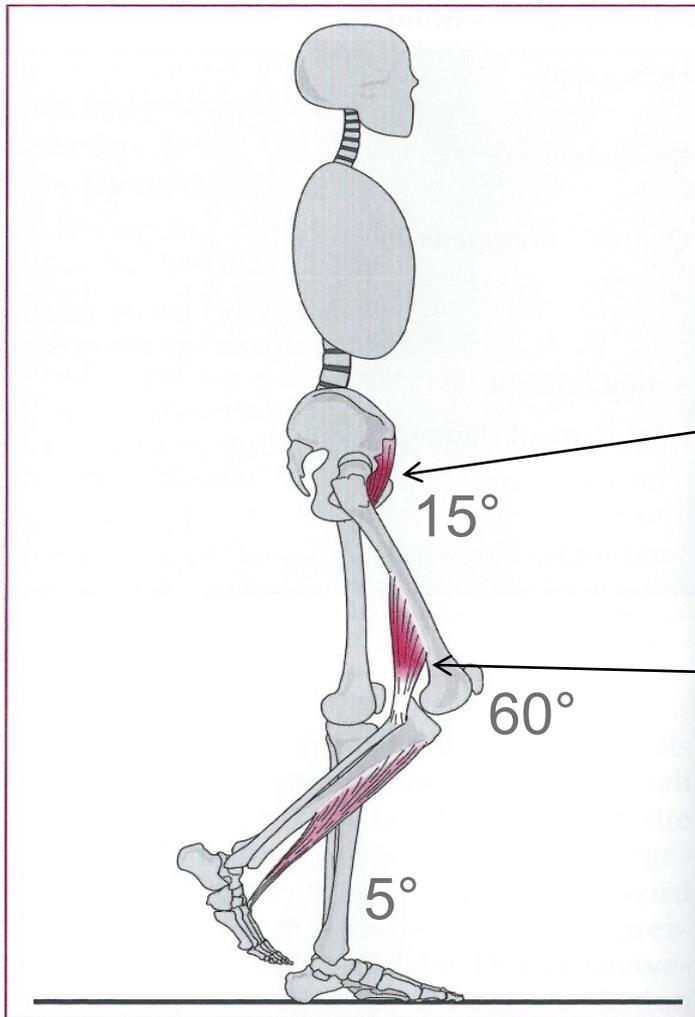
Terminal stance 31-50%



Pre-swing 50-62%



Initial swing 62-75%



M.adductor longus

M. iliacus

M.Satorius & M.Graziles

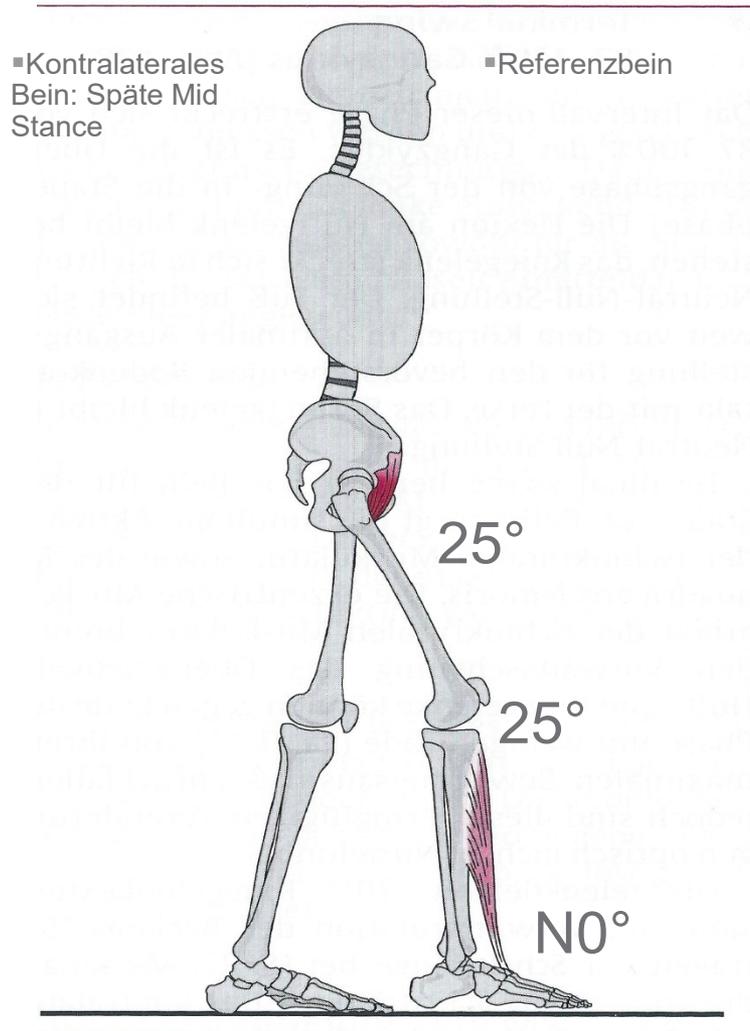
Caput Breves M. Bizeps femoris.

Critical events:

Flexion hanche 15°

Flexion genou 60°

Mid swing 75-87%



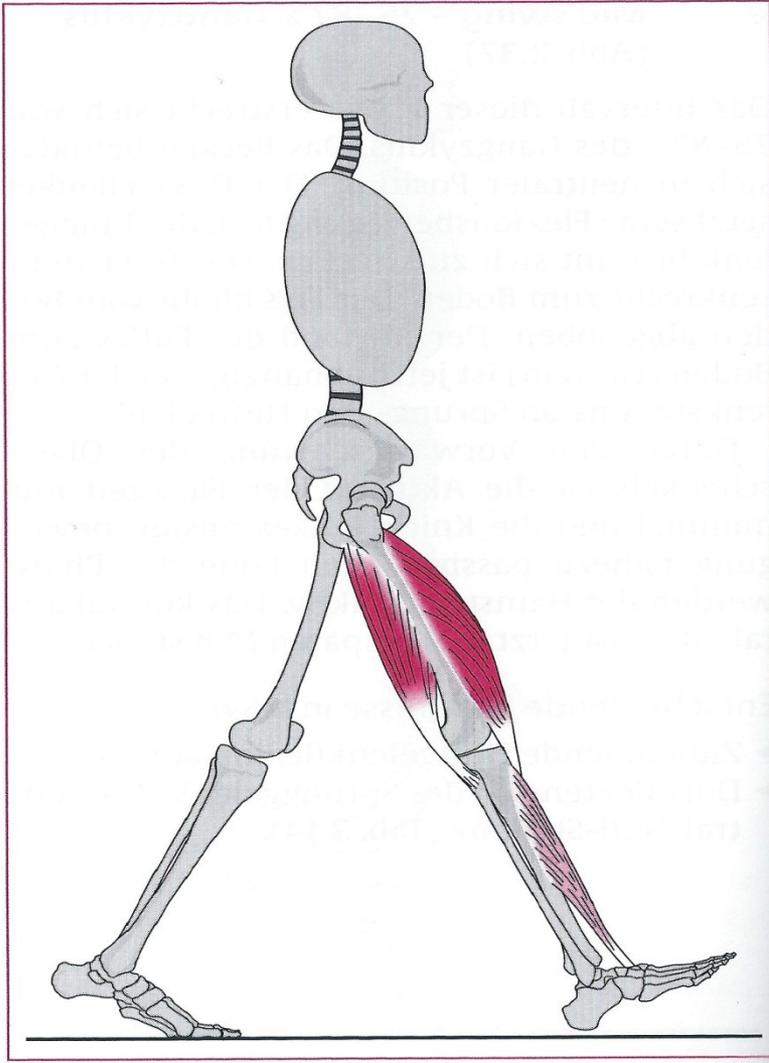
- Das Becken befindet sich in neutraler Position
- Der Oberschenkel setzt seine Flexions - bewegung fort.
- Das KG fängt an sich in Extension zu bewegen.
- **Ein Merkmal dieser Phase ist, die senkrecht zum Boden stehende Tibia!**
- Durch den Schwung des Oberschenkels ist hier die HG Flexion und die KG Extension eher passiv
- **Der Abstand des Fußes vom Boden (1cm) ist stark abhängig von der Gelenkstellung von SPG und HG**
- Erst gegen Ende dieser Phase werden die Hamstrings aktiv.

Critical event :

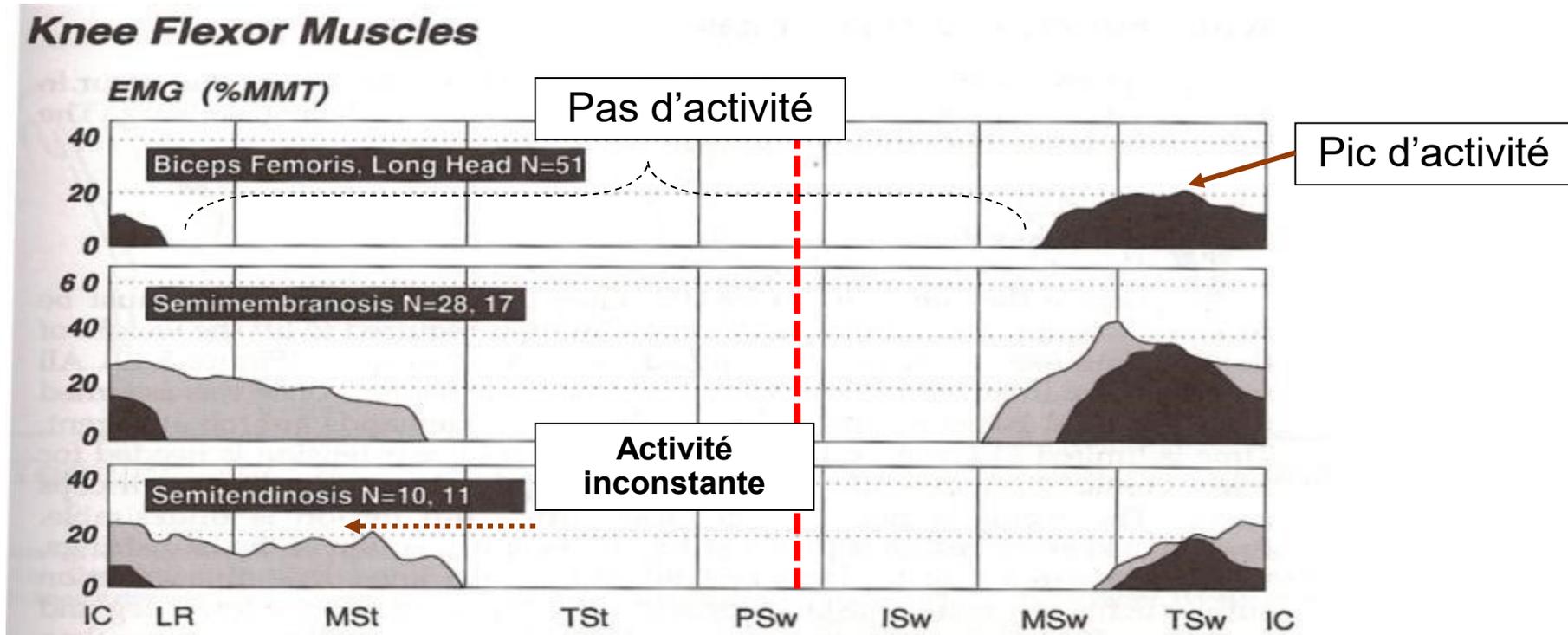
HG Flexion steigt auf 25°

Dorsalextensionsbewegung des Sprunggelenkes erreicht eine Neutral-Null-Stellung

Terminal swing 87-100%

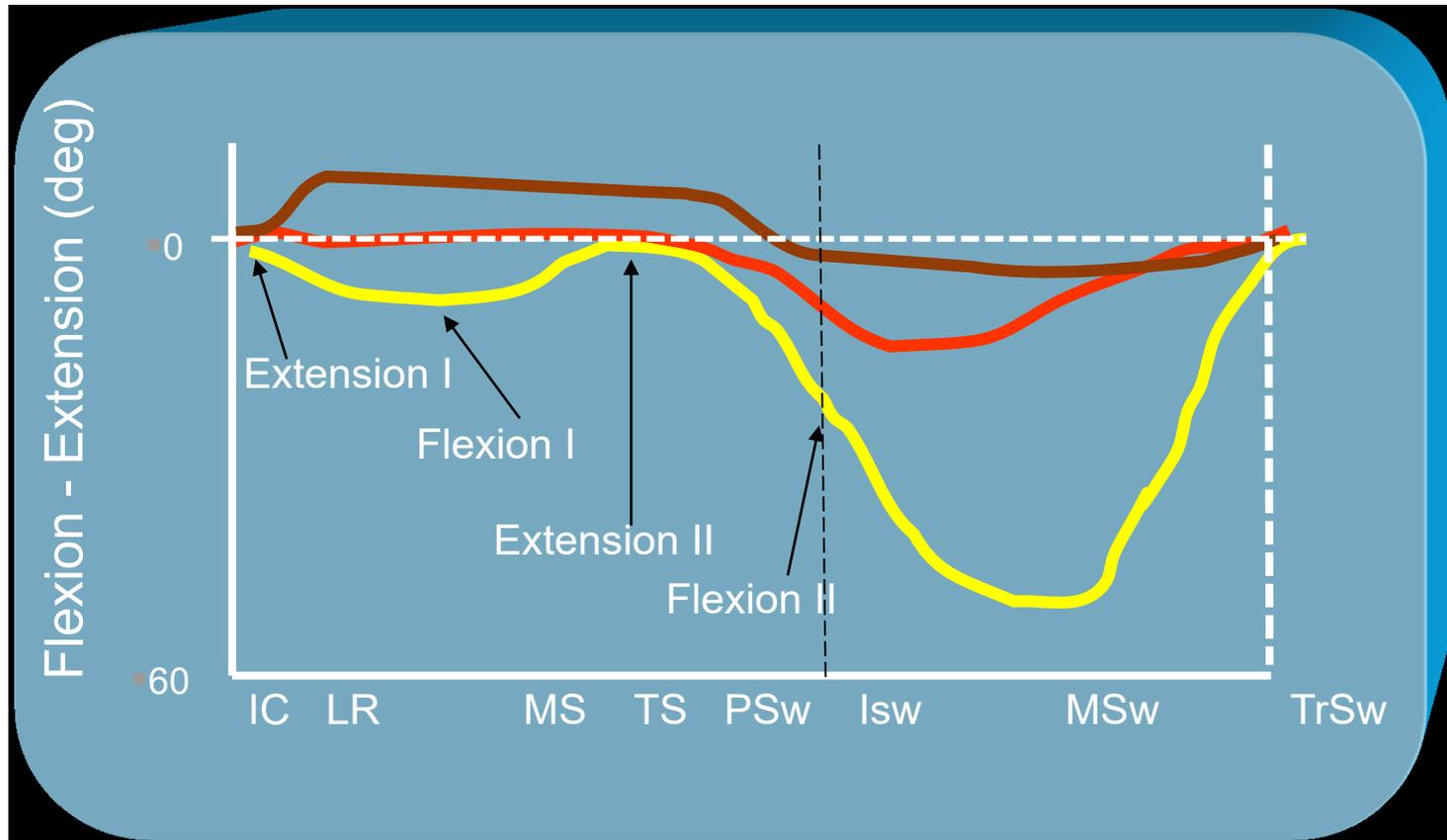


Activité musculaire des muscles de la cuisse



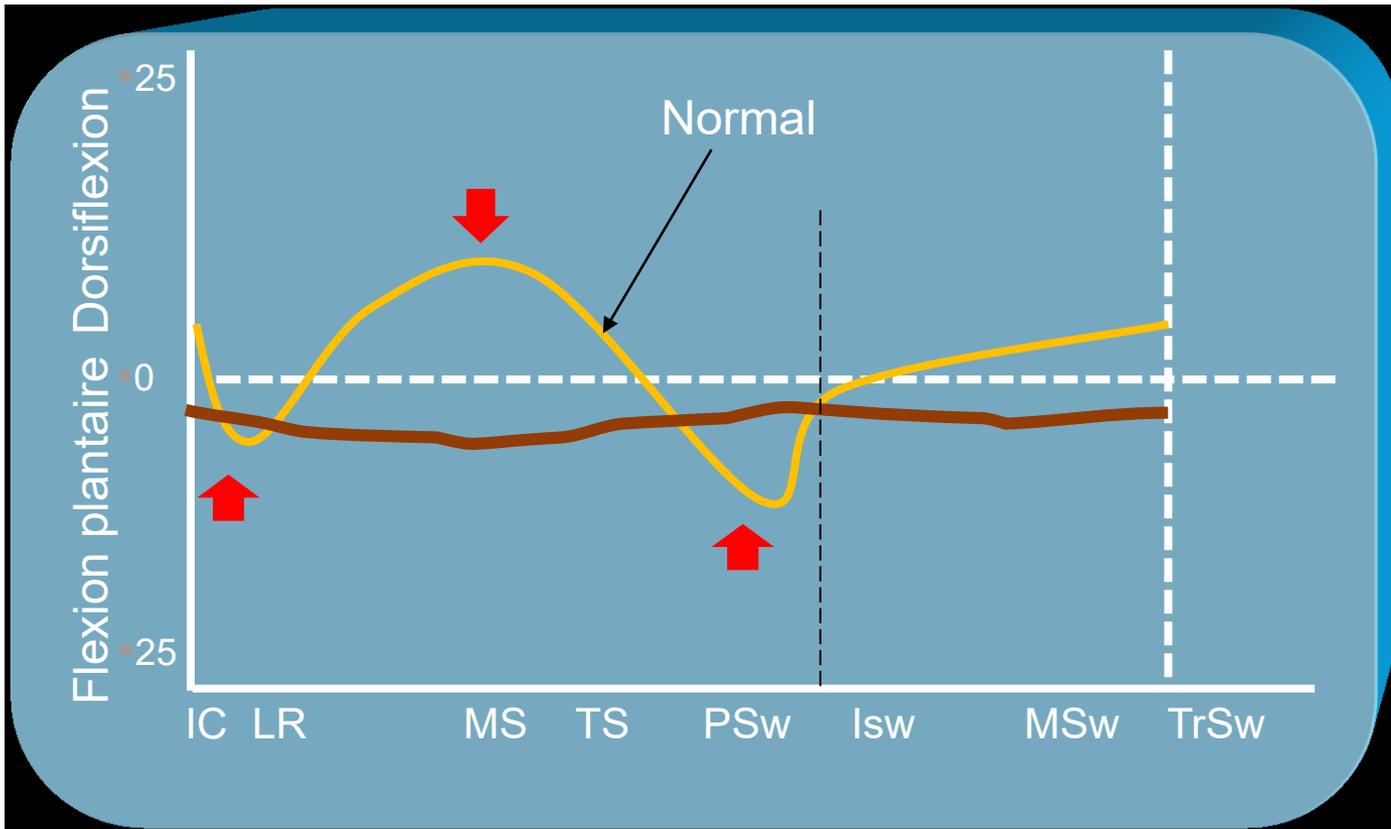
- Pourquoi les ischios sont-ils actifs durant la phase oscillante?
Contrôler / Ralentir l'extension du genou avant le contact initial.
- Pourquoi les ischios sont-ils actifs pendant la phase d'appui?
Contrôler la position du genou avant LR.

Mouvement du genou



- Quelle ligne représente le mouvement normal du genou?

Mouvement de cheville

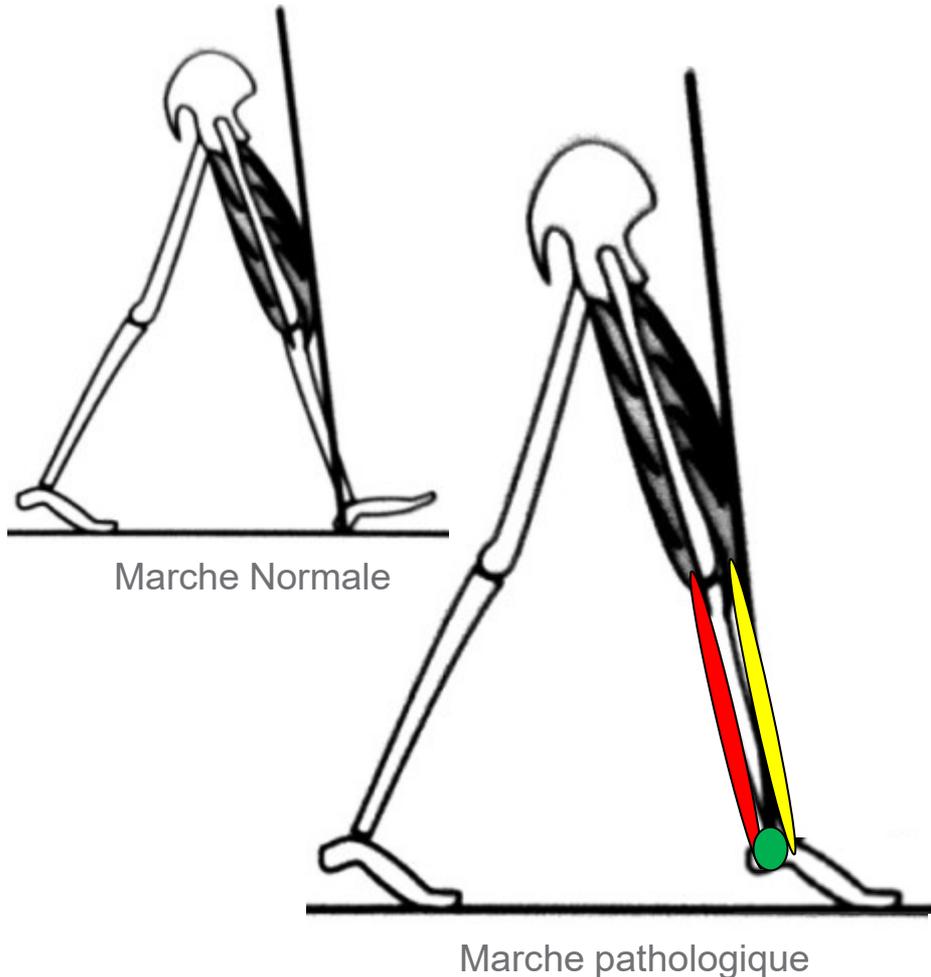


- Quelle ligne représente un mouvement de cheville durant la marche?

Perturbations de la marche en phase d'appui



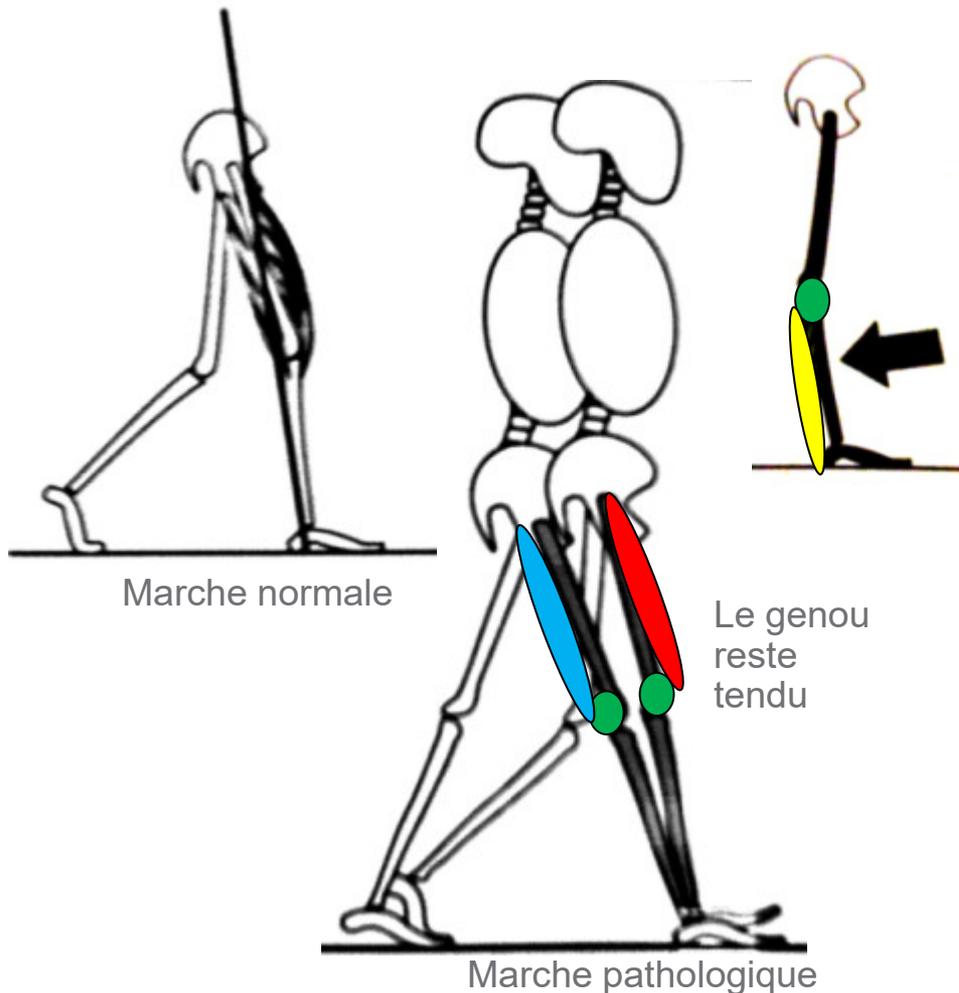
Contact de l'avant pied avant le contact initial



■ Raisons:

- Releveurs faibles ou fléchisseurs plantaires contractés peuvent entraîner un contact de l'avant pied avec le sol.
- Quels muscles peut-on stimuler pour diminuer cette perturbation?

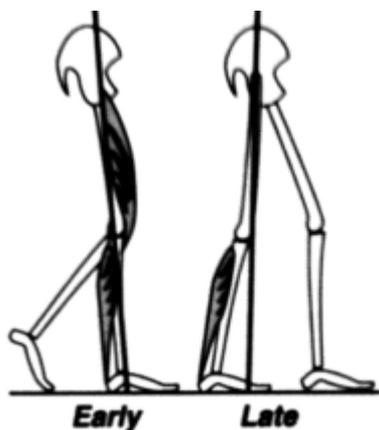
Flexion de genou limitée pendant LR



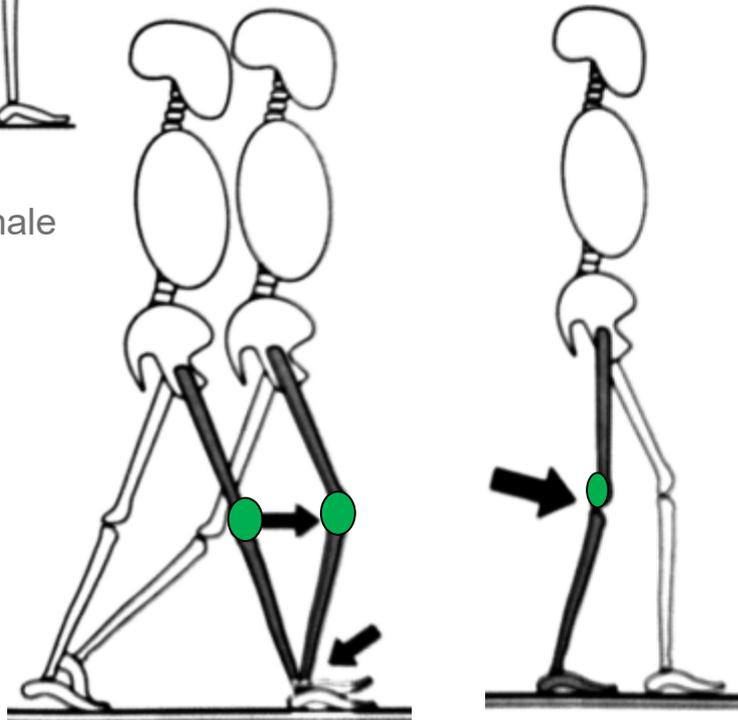
Plusieurs raisons:

- **Quadriceps spastique** bloque le genou en extension
 - **Ischios faibles** pas assez de force pour emmener le tibia en avant.
 - **Fléchisseurs plantaires spastiques** empêchent le tibia de progresser vers l'avant alors que le centre de gravité avance.
- Quel muscles peut-on stimuler?

Trop de flexion de genou en phase d'appui



Marche normale



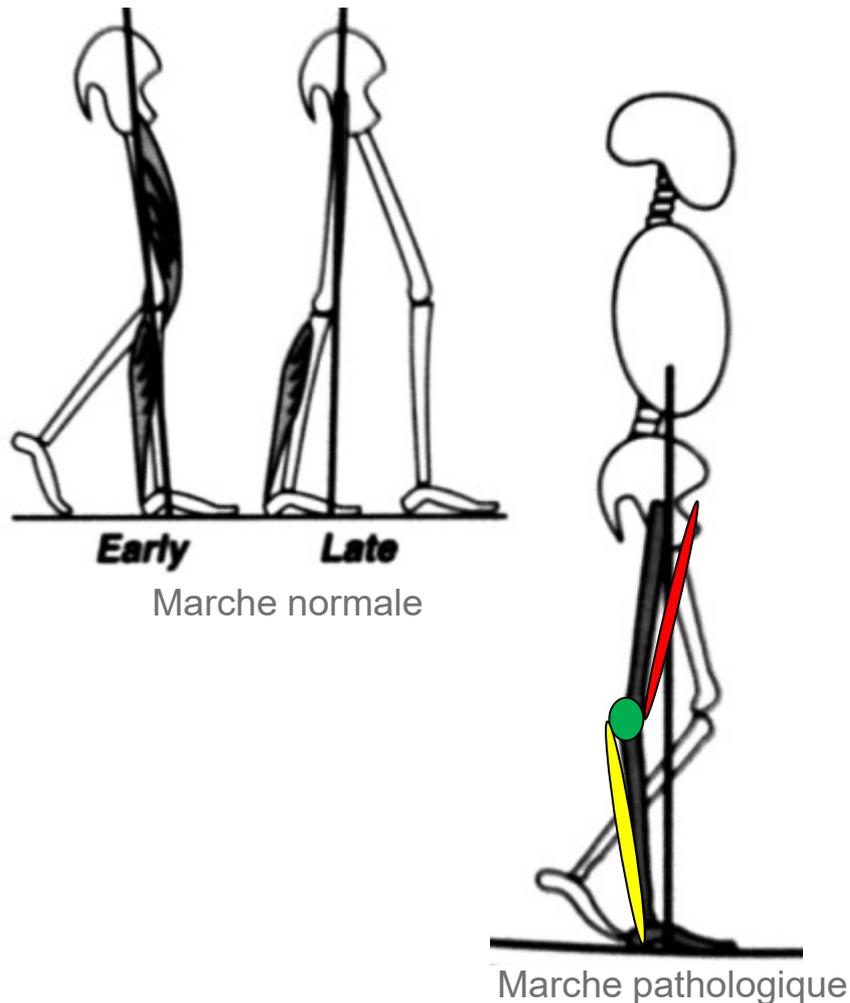
Marche pathologique

Plusieurs raisons:

- Quadriceps ou Gluteus faible pas assez de force pour étendre le genou
- Ischios spastiques renforce la faiblesse du quadriceps.

Quel muscle peut-on stimuler?
A quel moment?

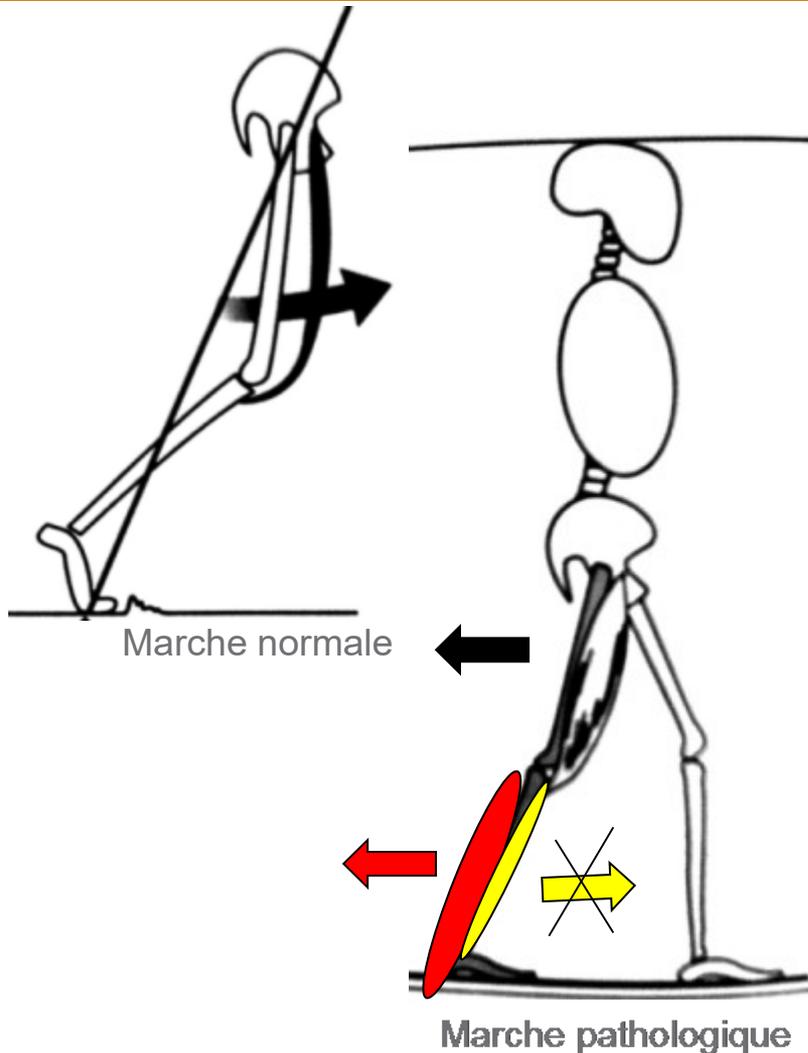
Hyperextension de genou / relâchement en phase d'appui



■ Raisons:

- Fléchisseurs plantaires spastiques amènent le tibia en arrière
- Quadriceps Spastic crée des forces qui entraîne le fémur en arrière.
- Quel muscles peut-on stimuler?

Flexion de genou limitée en début de phase oscillante



■ Raisons:

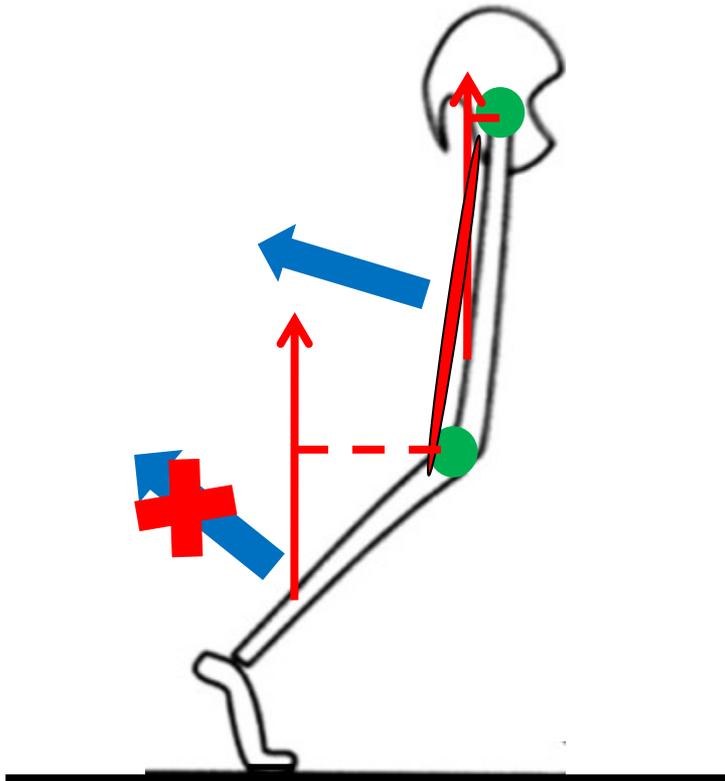
- Fléchisseurs plantaires spastic limite l'avancée du tibia vers l'avant pour plier le genou
- Activité Quadricipitale prolongée maintient le genou étendu trop longtemps alors que la jambe recule
- Releveurs faibles ralentissent l'avancée du tibia

■ Quels muscles peut-on stimuler?

Perturbations de la marche en phase oscillante

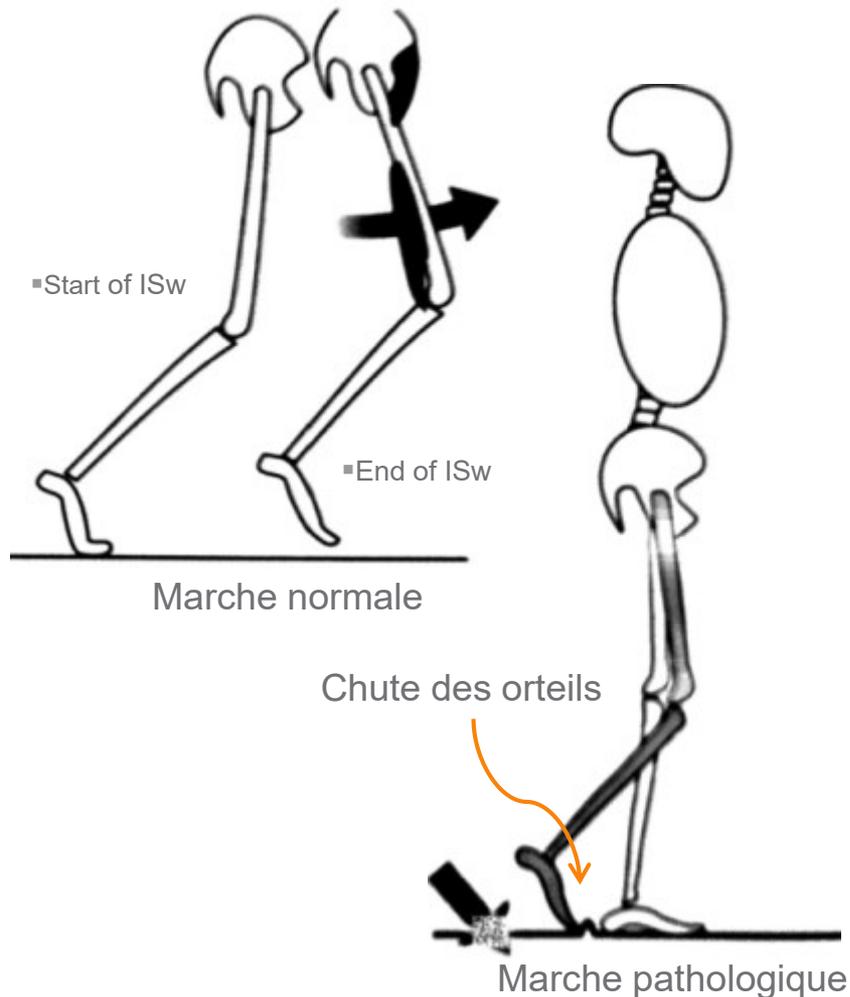


Phase oscillante



- Les ischios sont bi-articulaire
 - Genou(Flexion)
 - Hanche(Extension)
- Le moment de force en extension de hanche est faible
- Le moment de force en flexion de genou est fort
- La stimulation des ischios en phase oscillante peut limiter l'avancée du fémur.

Flexion de genou limitée en début de phase oscillante



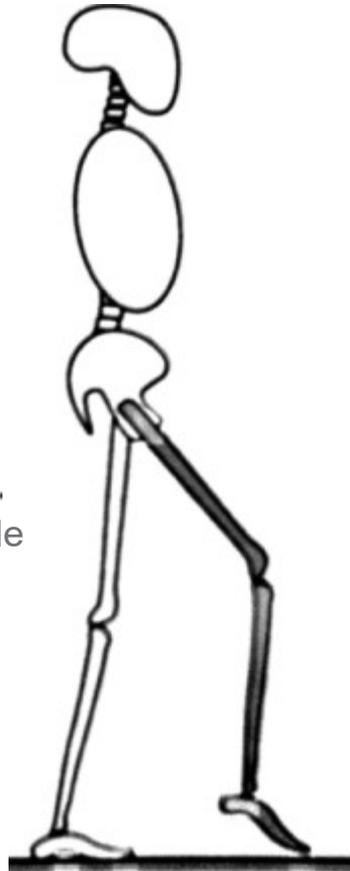
■ Raisons:

- Quadriceps Spastique
lutte contre la flexion
- Ichios faibles et fléchisseurs de hanche lents
- Quels muscles peut-on stimuler?

Flexion excessive en phase oscillante



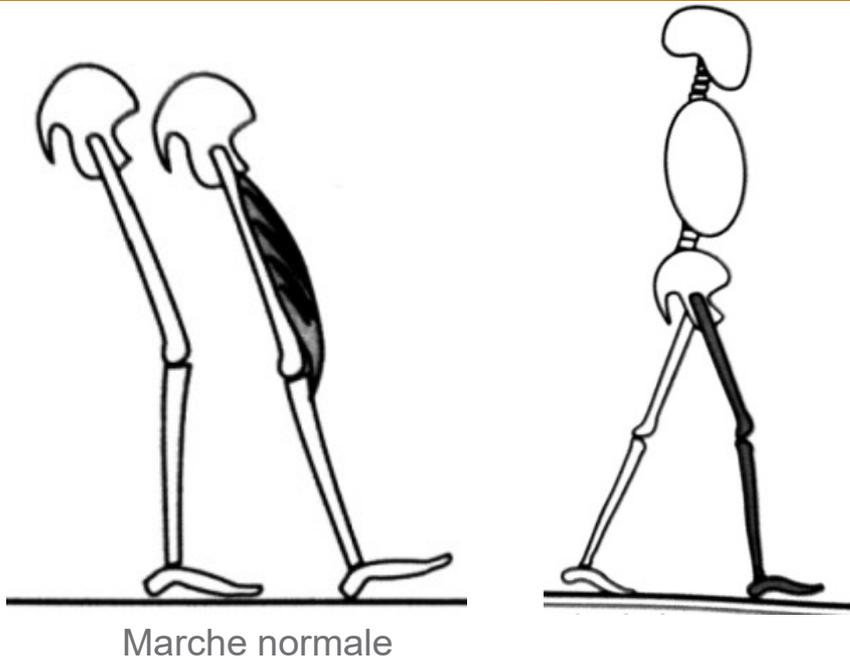
Marche normale



Marche pathologique

- Releveurs faibles ou fléchisseurs plantaires spastiques peu entraîner une flexion plantaire exagérée en phase oscillante.
 - Ischios faibles entraîne une flexion de hanche augmentée lors d'une marche plus rapide.
- Quels muscles peut-on stimuler?

Extension de genou limitée en fin de phase oscillante



■ Raisons:

- **Quadriceps faible** ne permet pas une extension complète du genou
- **Ischios spastiques** peuvent empêcher le genou d'aller en extension complète

