ERIC GILLARD

INTÉRÊTS DE L'APPROCHE FONCTIONNELLE DU SYSTÈME LOCOMOTEUR

1. Mise en place du cadre théorique:

biomécanique et biotenségrité

2. Organisation pratique de ces concepts dans une consultation

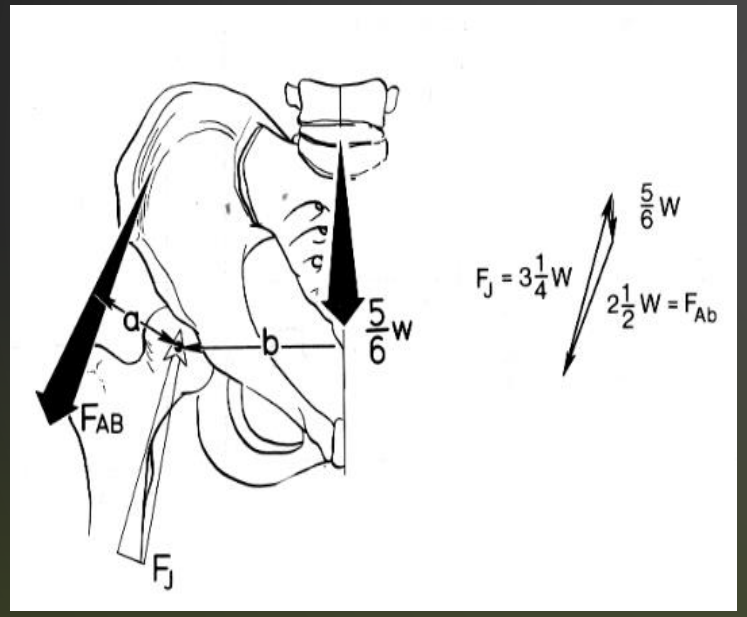
plus-value dans l'approche du système locomoteur

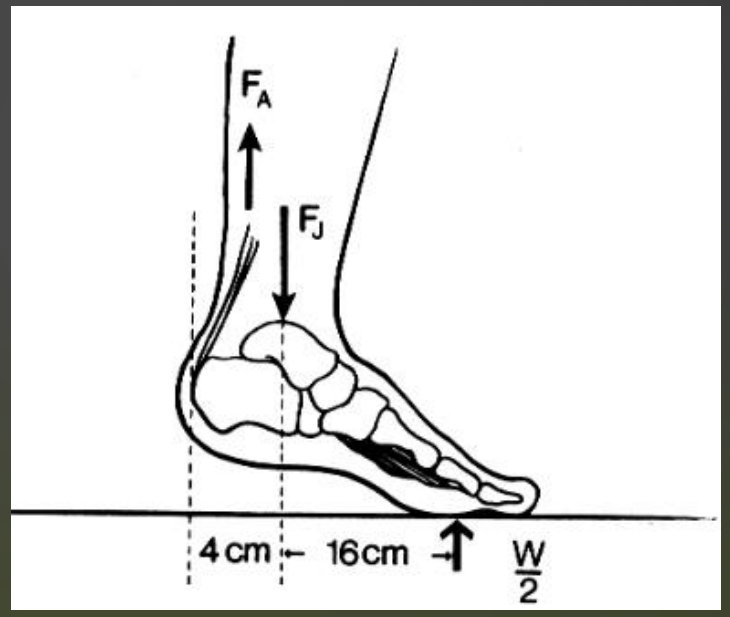
3. Cas clinique

4. Questions réponses

MISE EN PLACE DU CADRE THÉORIQUE, BIOMÉCANIQUE ET BIOTENSÉGRITÉ : INTRODUCTION

- Biomécanique :





INADÉQUATIONS SUR DU VIVANT

- Contrainte et déformation
- Augmenter la taille
- Conséquences
- Inerte / vivant
- Géométrie
- Biomécanique

Source Standring , 2005 Ethiers et Simmons, 2007

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RÉFÉRENCES

Dr Stephen Levin Orthopedic and Spine surgeon

Clinical Associate Professor at Michigan State University and Howard University.

Prof. Carla Stecco – orthopaedic surgeon and professor of anatomy and sport activities Padoue University

Timothy Allen 'Systems Biologist'

Donald Ingber, MD, PhD Harvard University

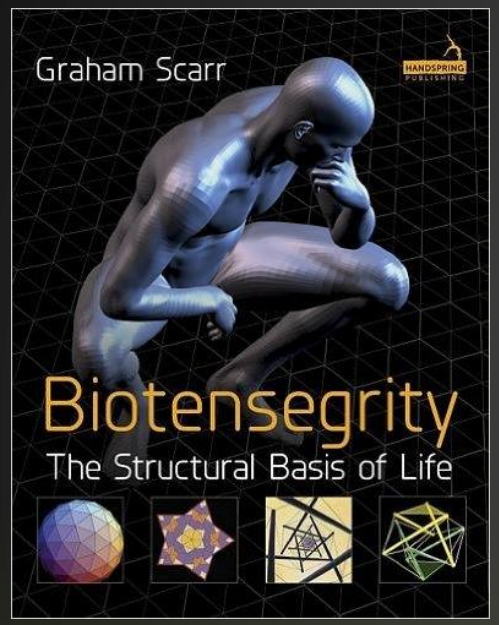
John Sharkey, BSc, NMT, MSc

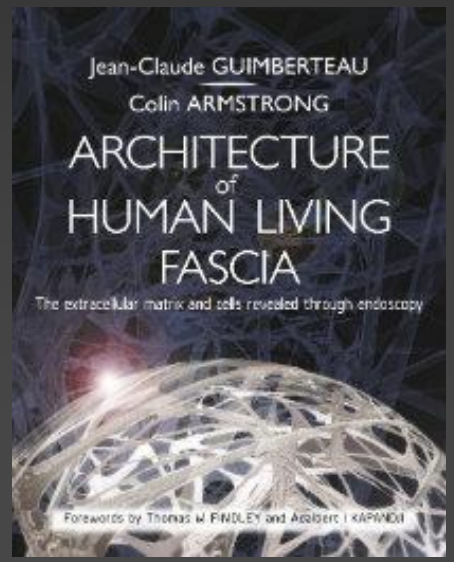
Robert Schleip, Ulm University's

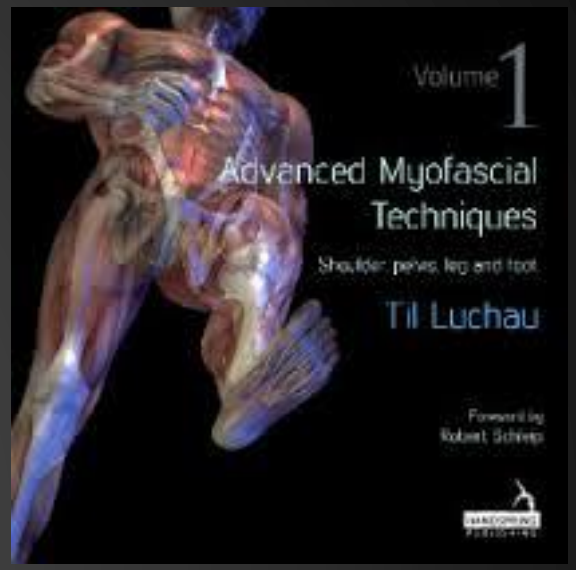
Tom Myers, Rolf Institute

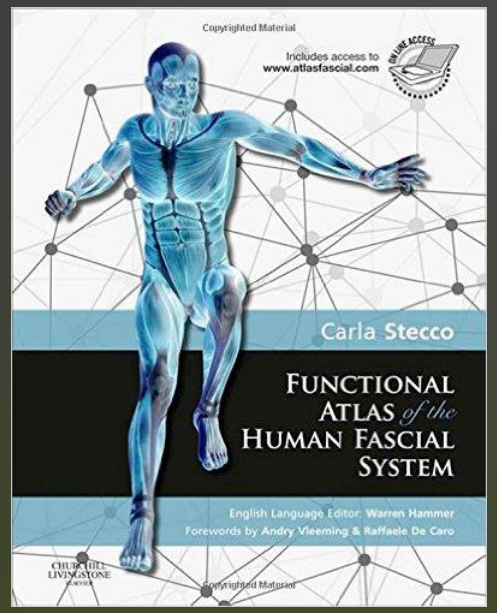
Graham Scarr biologist and osteopath

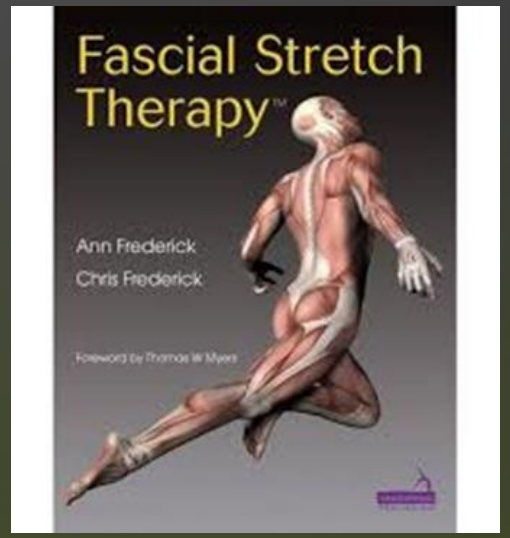
RÉFÉRENCES











MISE EN PLACE DU CADRE THÉORIQUE, BIOMÉCANIQUE ET BIOTENSÉGRITÉ : INTRODUCTION

MISE EN PLACE DU CADRE THÉORIQUE, BIOMÉCANIQUE ET BIOTENSÉGRITÉ : INTRODUCTION

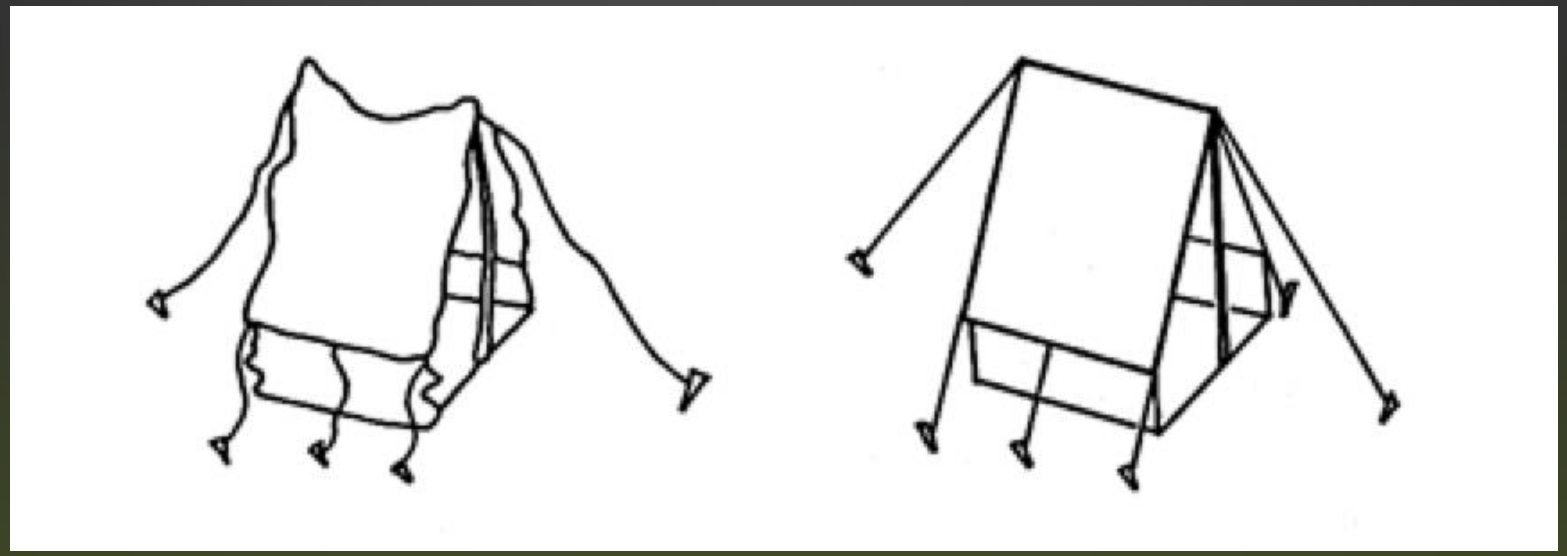
- Biotenségrité:

Bio	vivant
tens	tension
égrité	intégrité

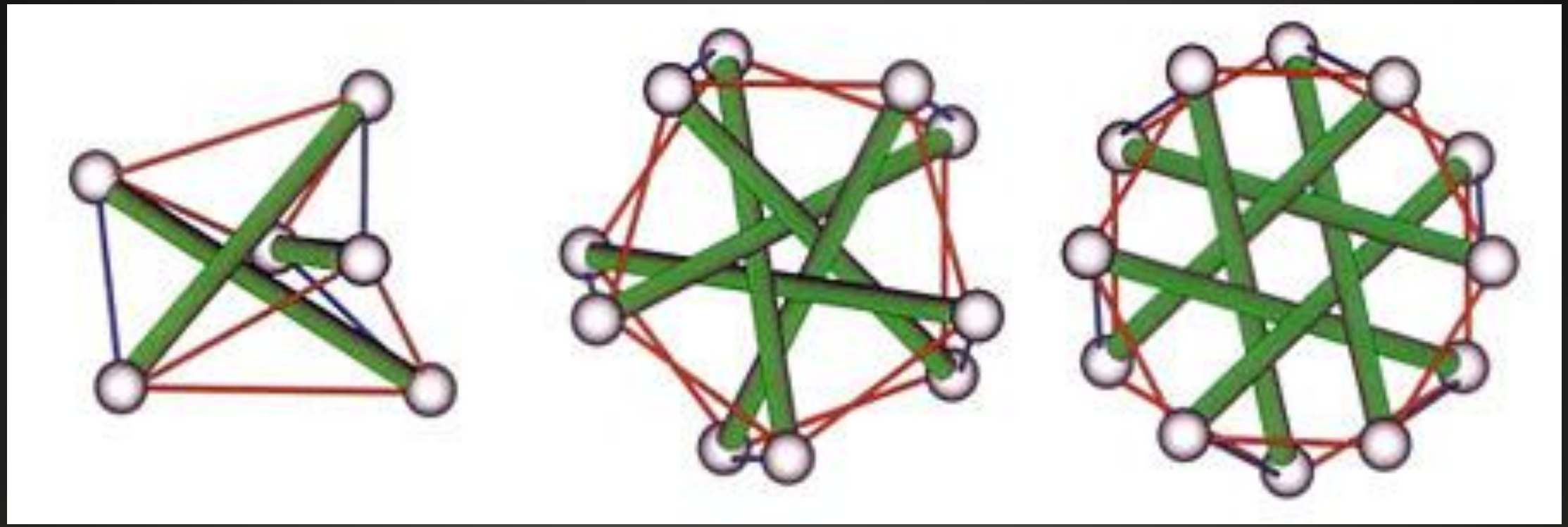
Intégrité de tension du vivant

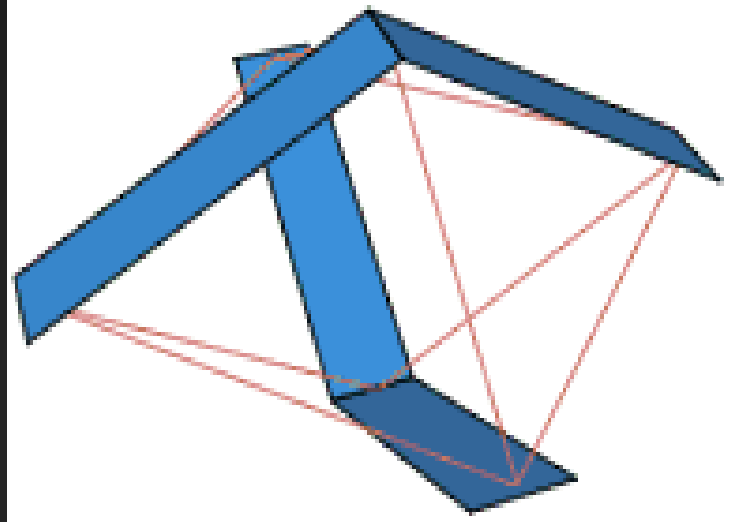
MISE EN PLACE DU CADRE THÉORIQUE, BIOMÉCANIQUE ET BIOTENSÉGRITÉ : INTRODUCTION

- Biotenségrité: équilibre tension / compression

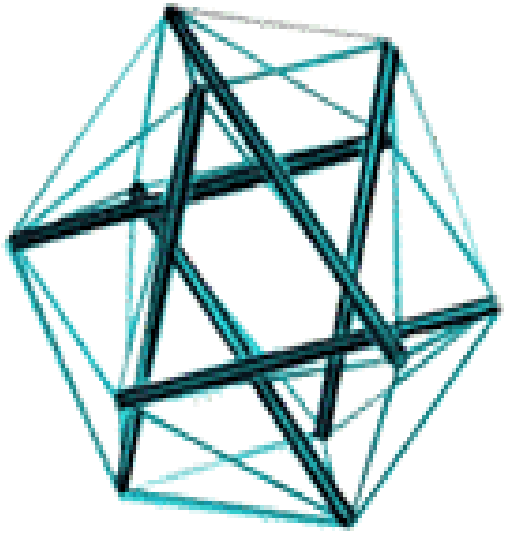



Tensegrity = tension + integrity
Islands of compression
floating in a balanced sea of tension



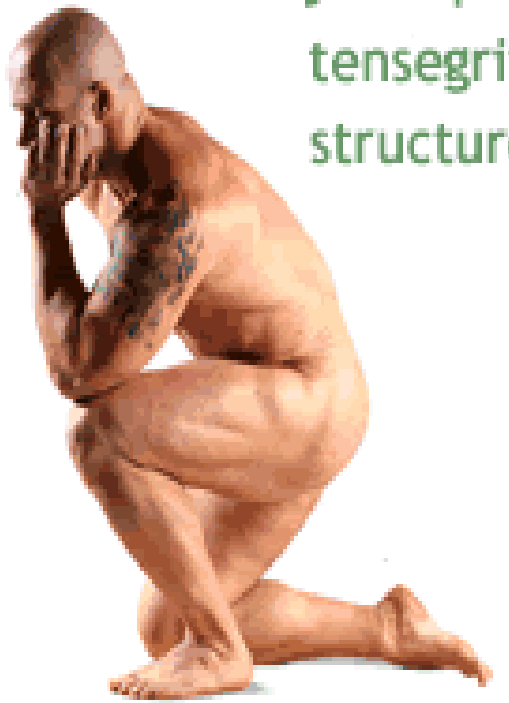


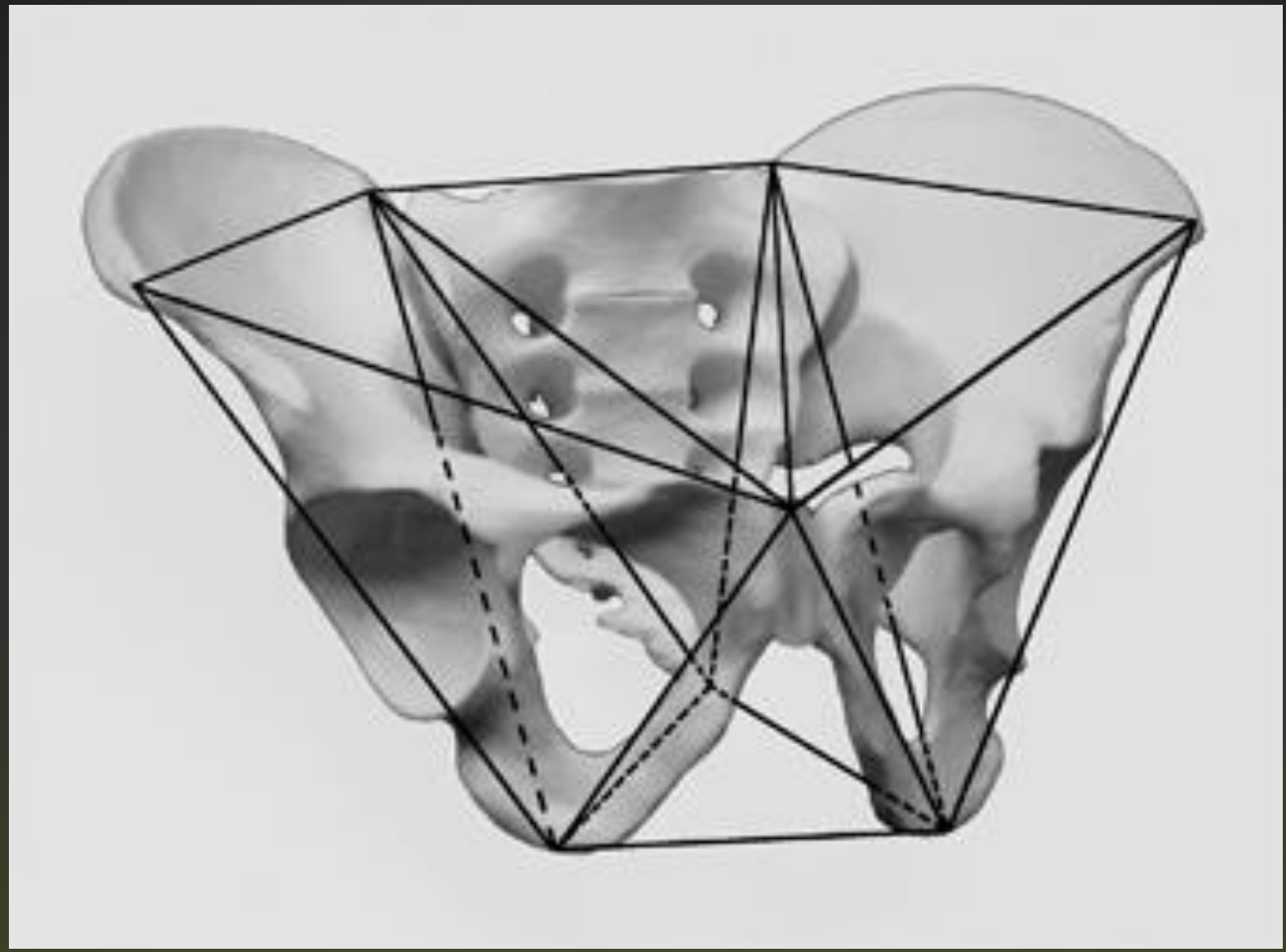
A simple tensegrity structure

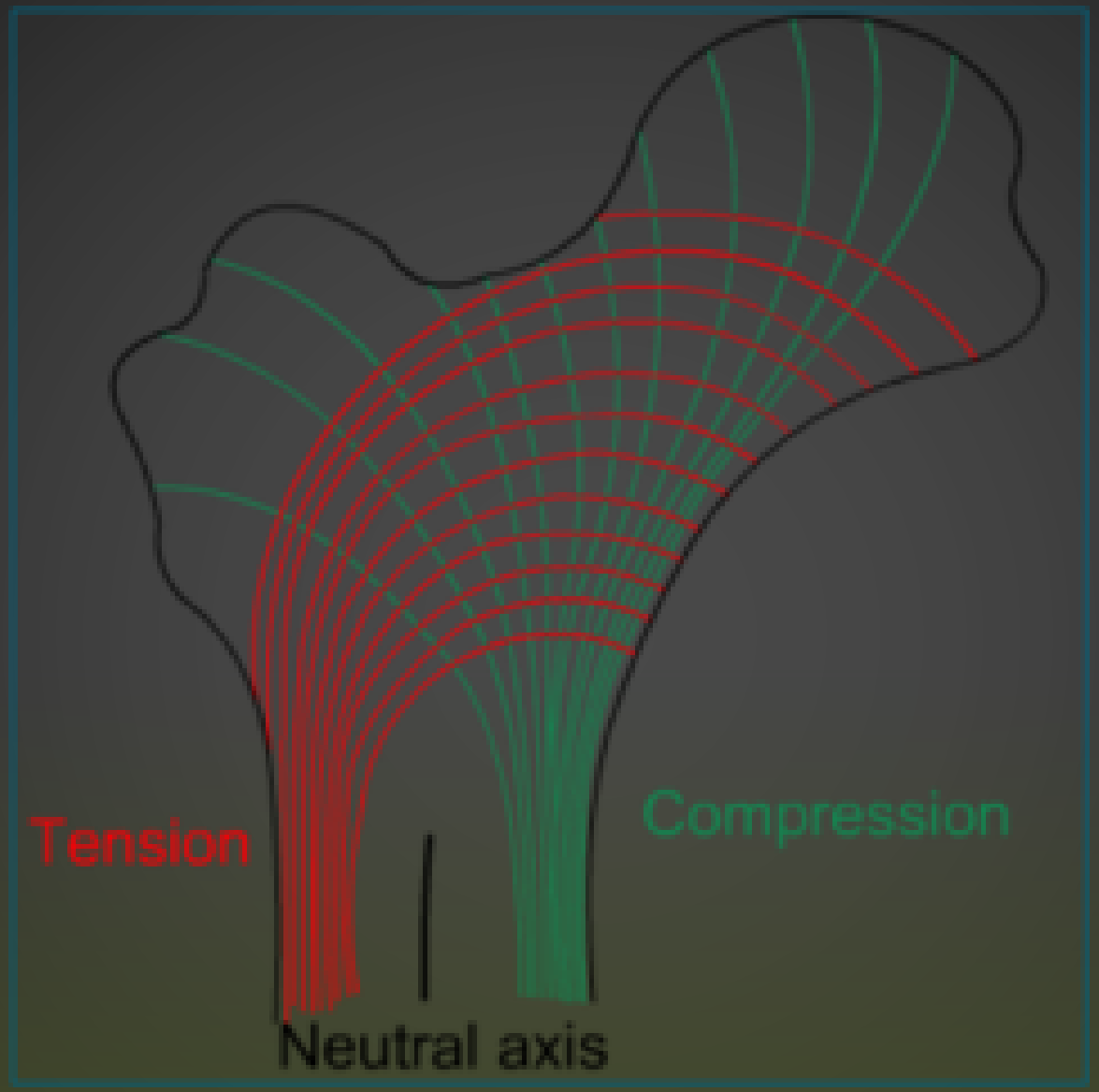


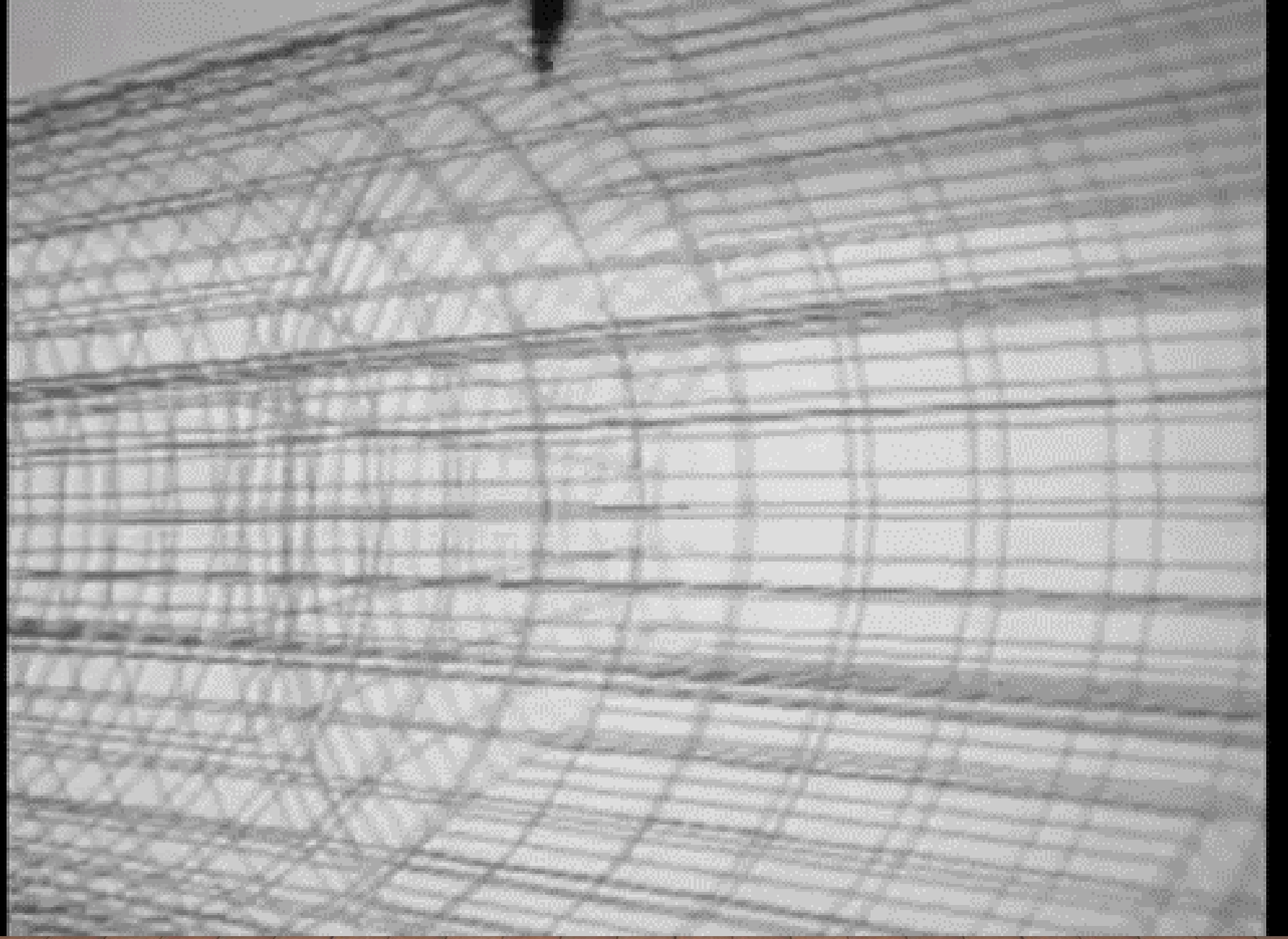
A more complex tensegrity structure

A *very* complex tensegrity structure!

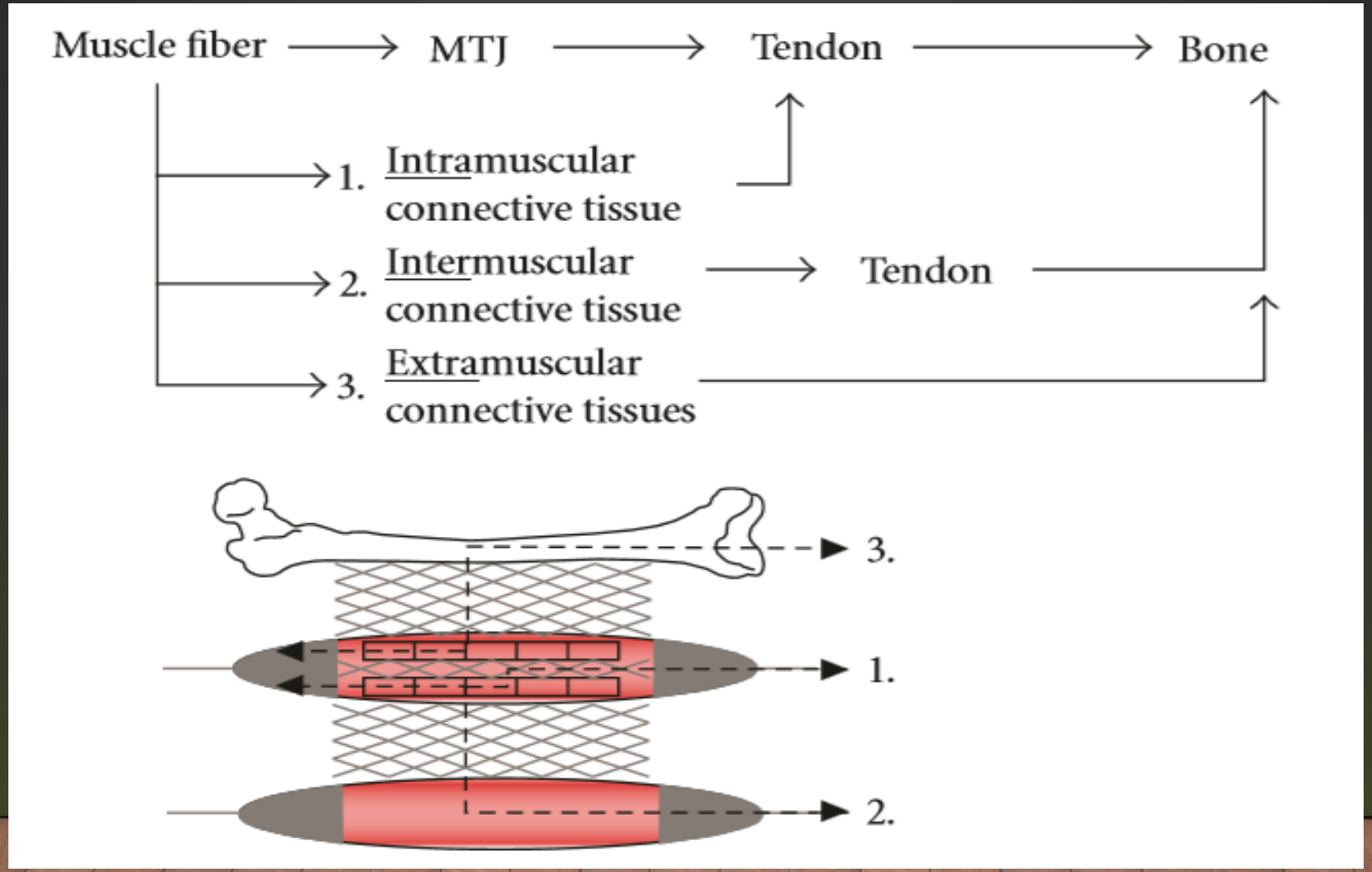





Tension
Compression
Neutral axis



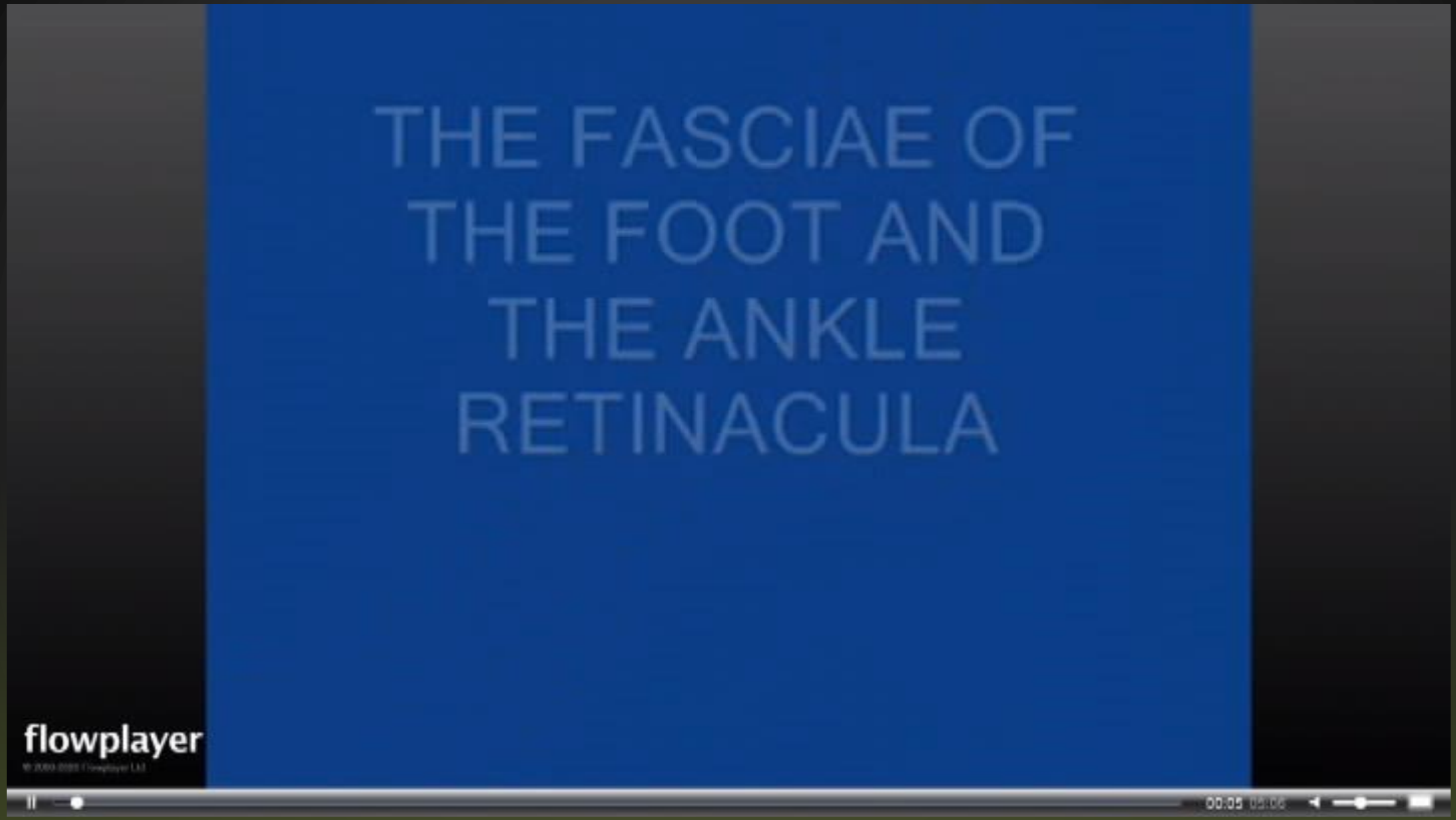
CONTRAINTES MUSCULAIRES ET TRANSMISSION



Schleip R, Gabbiani G, Wilke J, Naylor I, Hinz B, Zorn A, Jäger H, Breul R, Schreiner S and Klingler W (2019)

Fascia Is Able to Actively Contract and May Thereby Influence Musculoskeletal Dynamics: A Histochemical and Mechanographic Investigation.

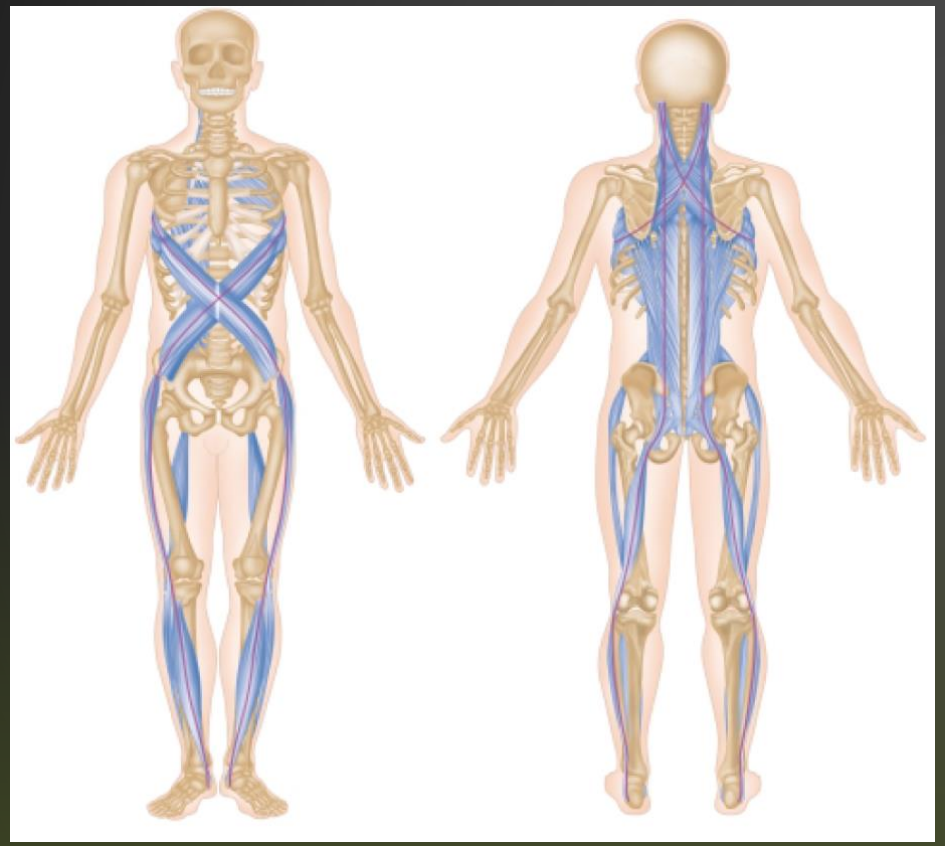
Front. Physiol. 10:336. doi: 10.3389/fphys.2019.00336

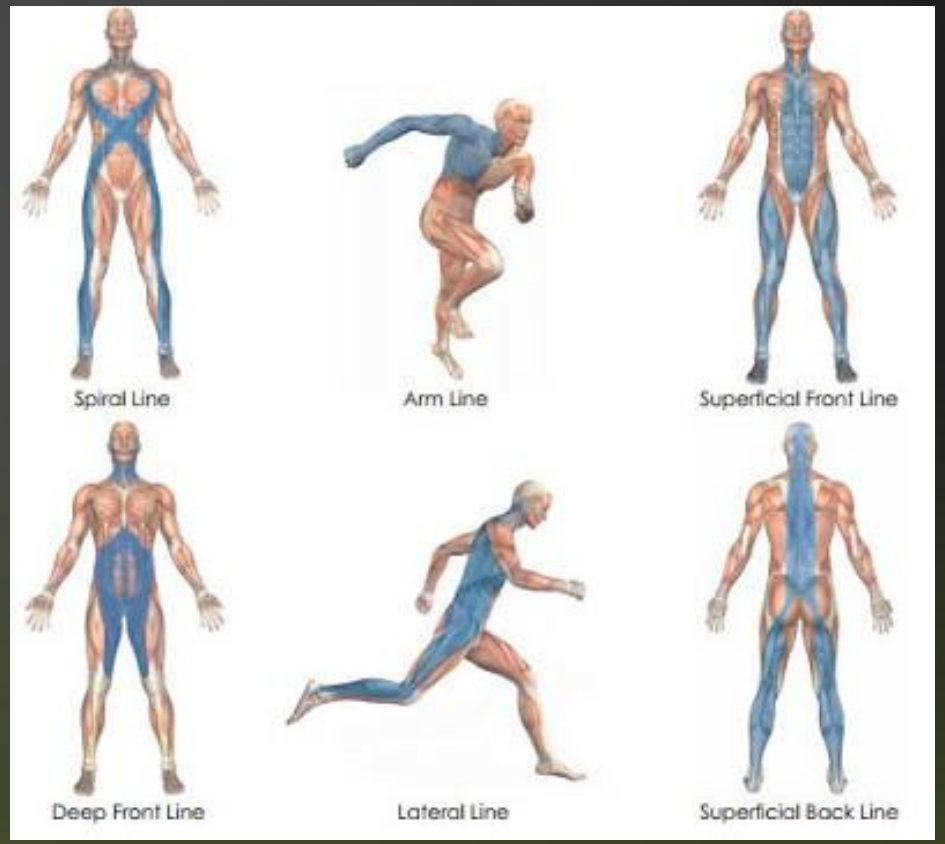

THE FASCIAE OF
THE FOOT AND
THE ANKLE
RETINACULA
flowplayer

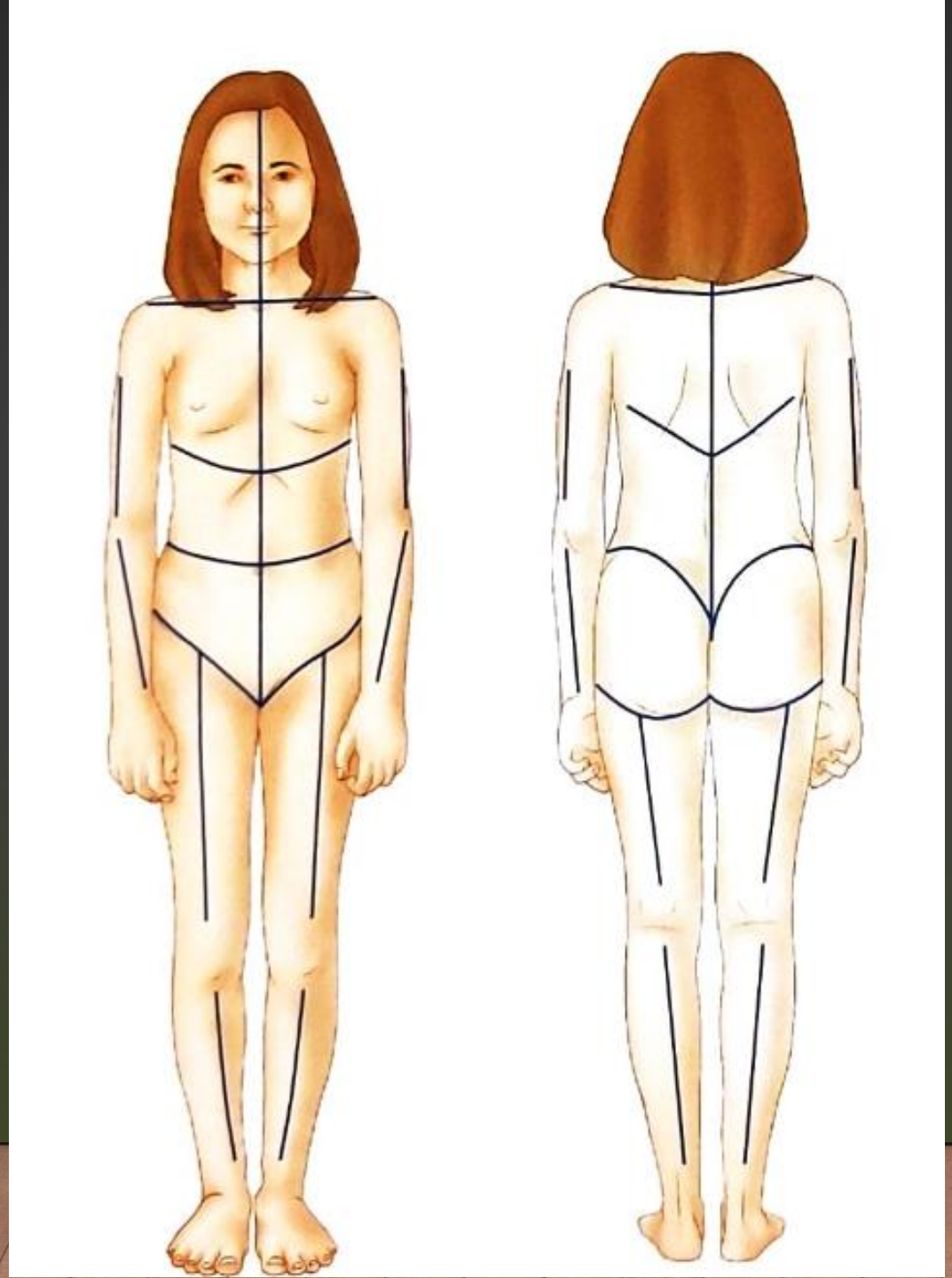
ORGANISATION PRATIQUE DE CES CONCEPTS DANS UNE CONSULTATION

PLUS-VALUE DANS L'APPROCHE DU SYSTÈME LOCOMOTEUR

ORGANISATION PRATIQUE DE CES CONCEPTS DANS UNE CONSULTATION : PLUS-VALUE DANS L'APPROCHE DU SYSTÈME LOCOMOTEUR





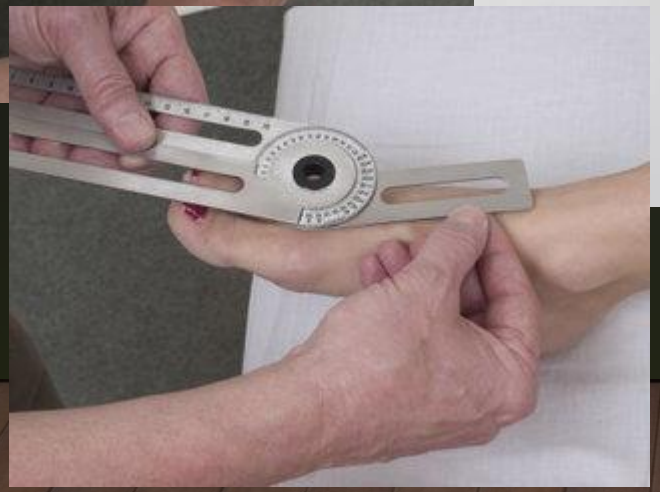


PROCESSUS D'ANALYSE EN ACCORD AVEC CES CONCEPTS DE BIOTENSÉGRITÉ

- Mobilité
- Position
- Fonction
- Perception

MOBILITÉ

- Membre inférieur
- Bassin
- Tronc
- Tête
- Membre supérieur

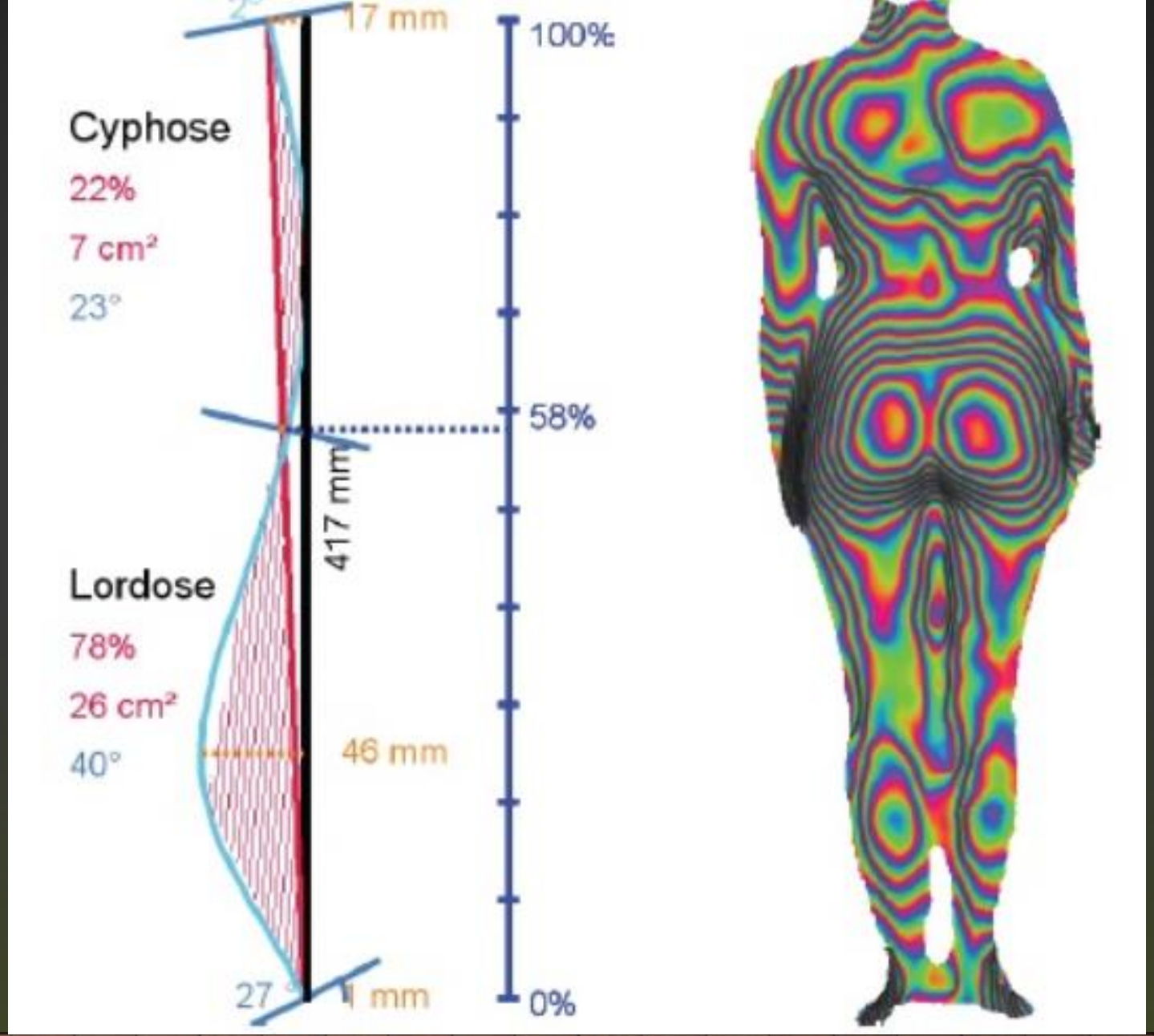


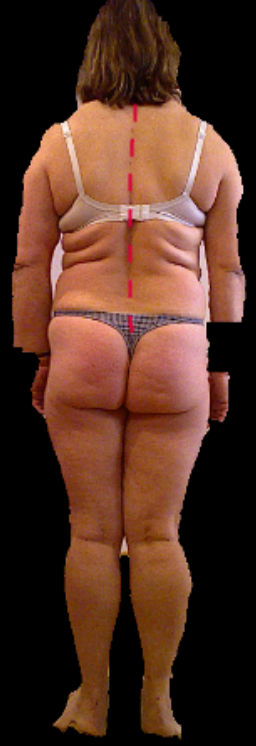
RESTREINT

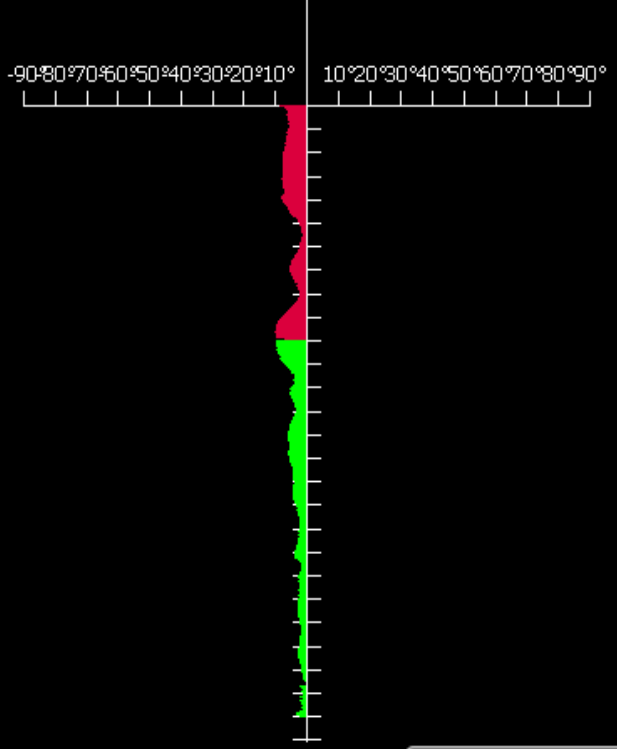
POSITION

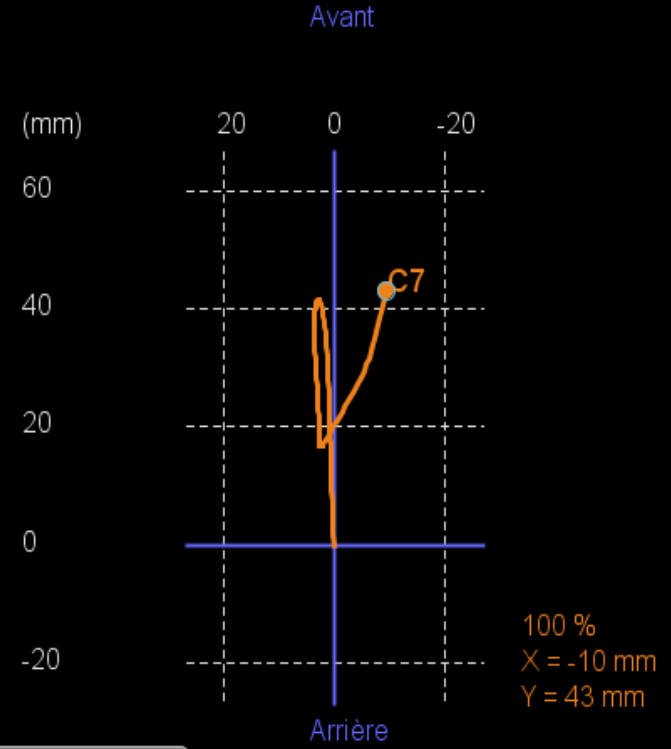
KINEOD™
AXS MEDICAL

POSITION


17 mm
100%
Cyphose
22%
7 cm²
23°
58%
417 mm
Lordose
78%
26 cm²
40°
46 mm
27
mm
0%







100 %
X = -10 mm
Y = 43 mm

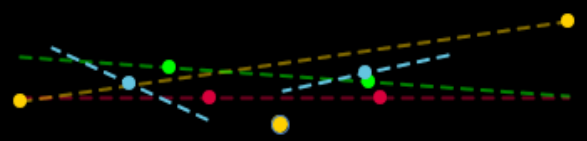
Pas d'examen dans la même position

Afficher le plan passant par

- [x] ACROMIONS
- [x] EIPS
- [x] CREUX POPLITES
- [x] PIEDS

Afficher les mesures de coupes apicales

- [ ]

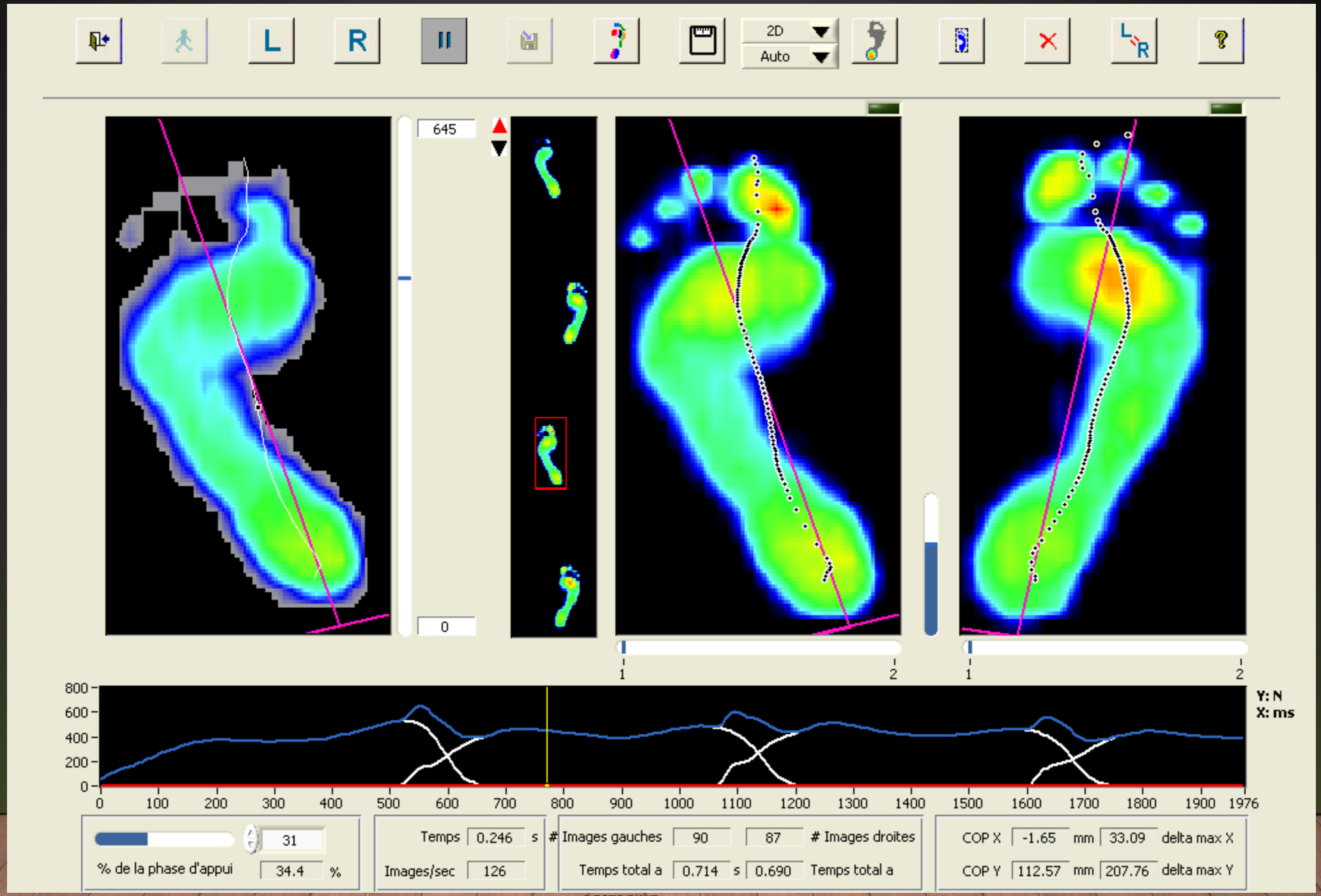


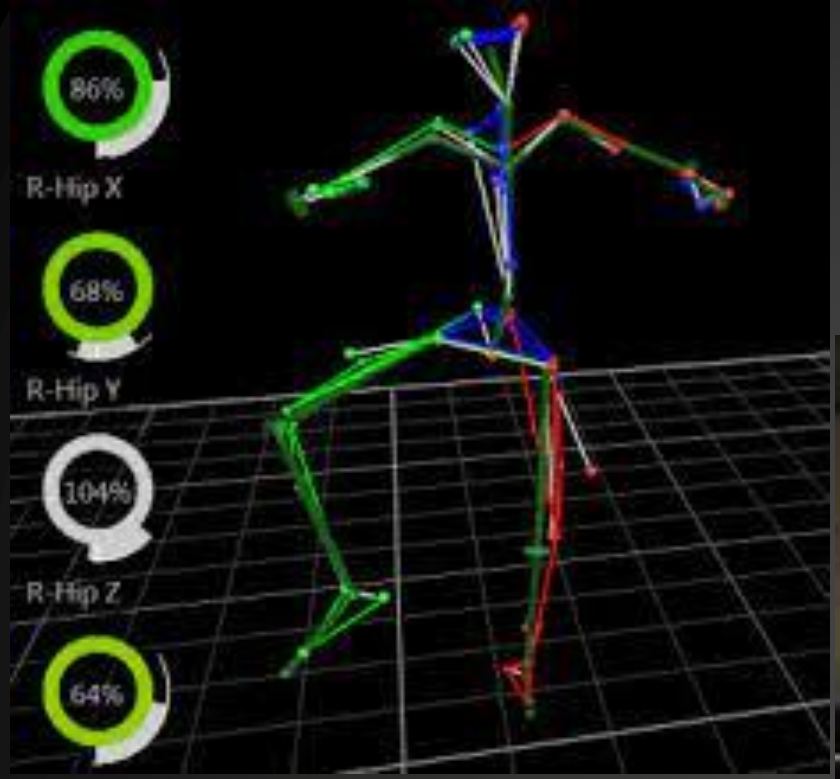
Gibbosité debout
0°
0 mm
Rotation acromions - EIPS : 8° G
Rotation pieds - EIPS : 4° G
Rotation genou gauche - pieds : 20° D
Rotation genou droit - pieds : 15° G

FONCTION

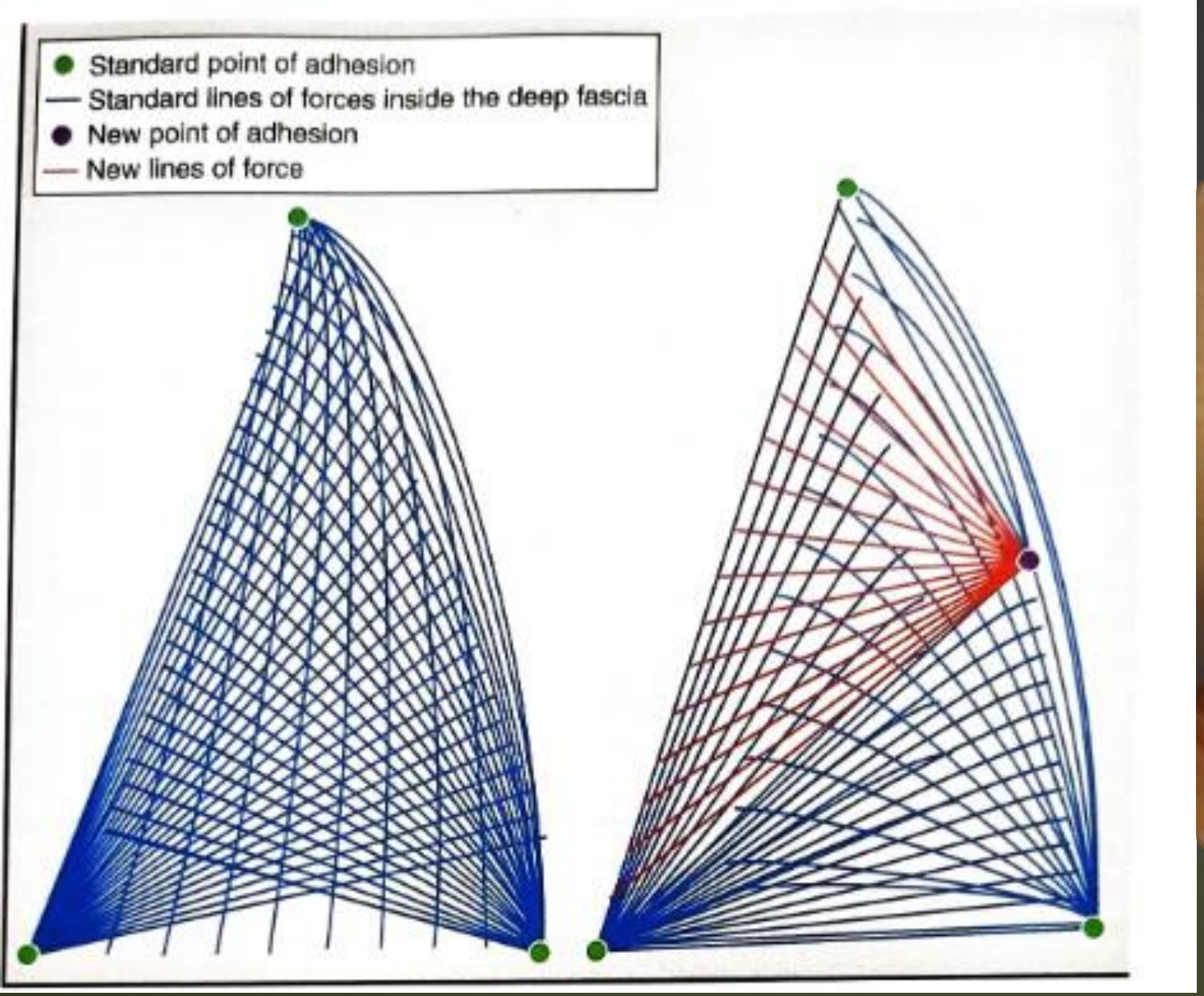
- Analyse du mouvement

Vidéo
Plateforme de pression
Vicon


L
R
2D
Auto
645
0
1
2
1
2
800
600
400
200
0
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
1976
Y: N
X: ms
31
% de la phase d'appui
34.4
%
Temps
0.246
s
Images/sec
126
Images gauches
90
87
Images droites
Temps total a
0.714
s
0.690
Temps total a
COP X
-1.65
mm
33.09
delta max X
COP Y
112.57
mm
207.76
delta max Y


86%
R-Hip X
68%
R-Hip Y
104%
R-Hip Z
64%

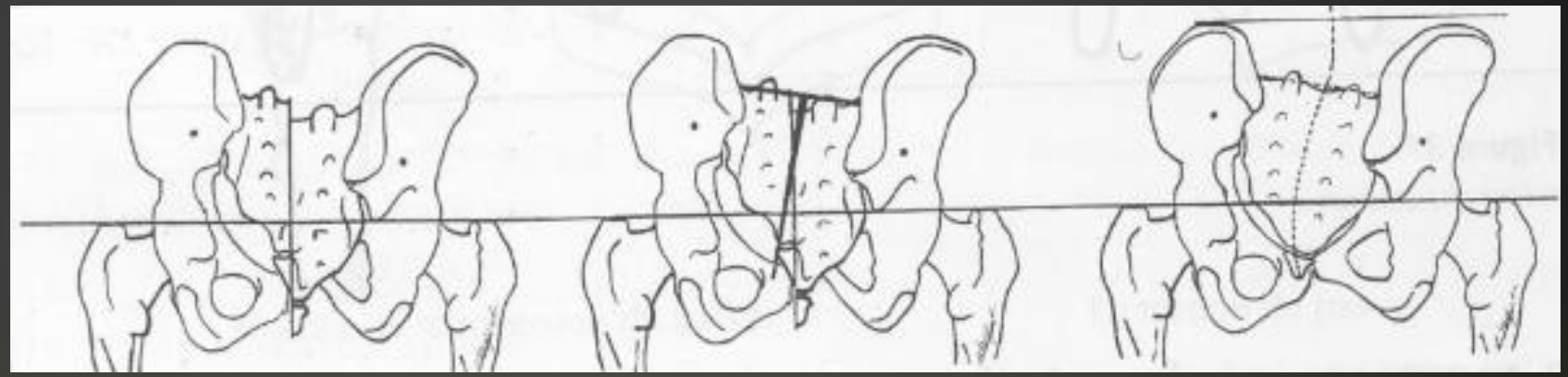
PERCEPTION

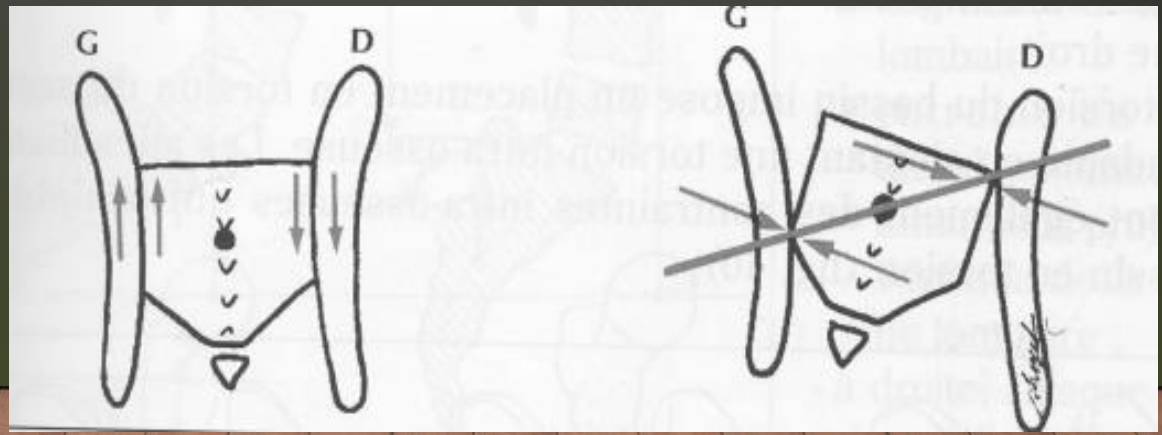

Standard point of adhesion
Standard lines of forces inside the deep fascia
New point of adhesion
New lines of force

CAS CLINIQUE

APPROCHE FONCTIONNELLE

RESTREINT





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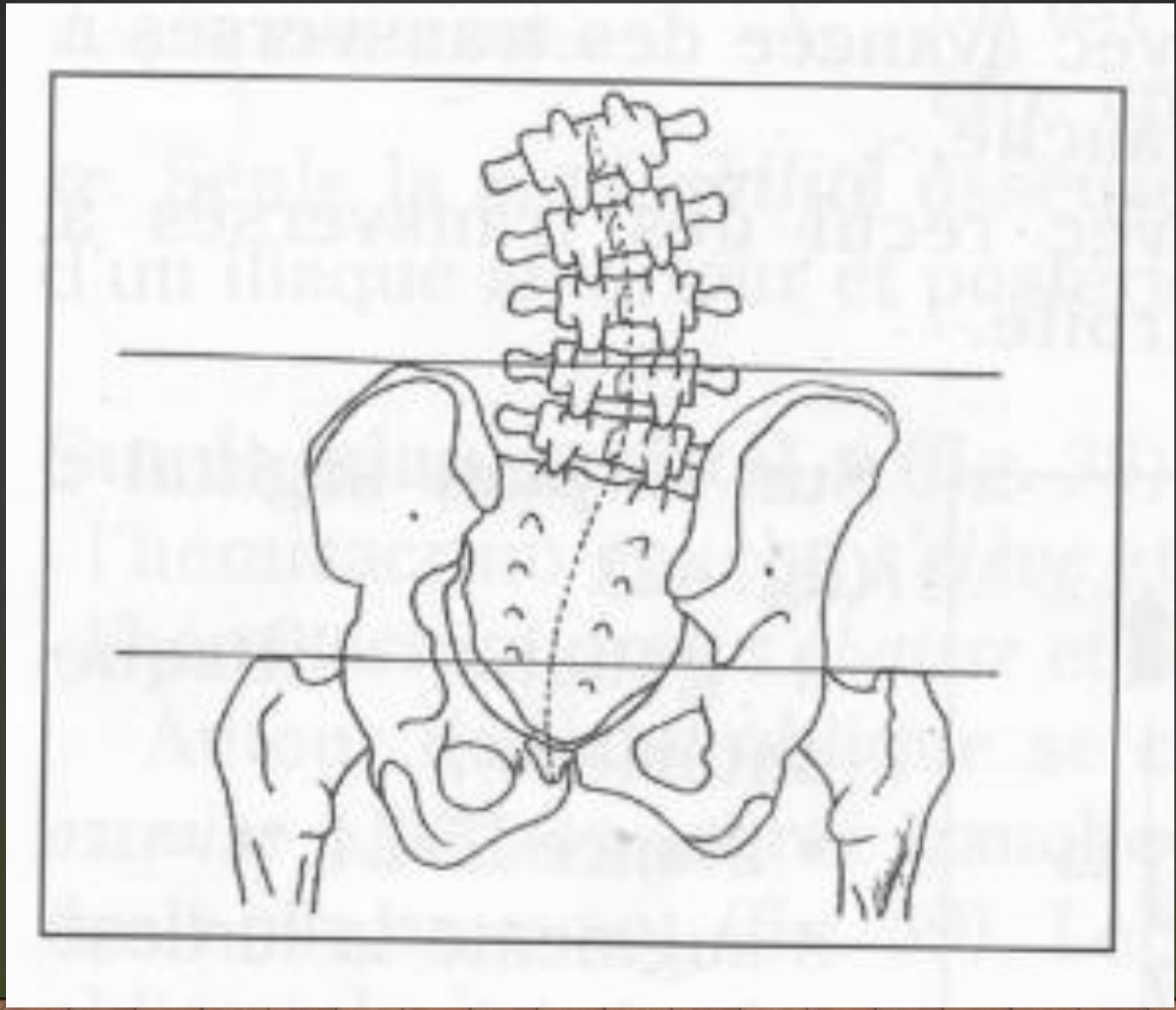
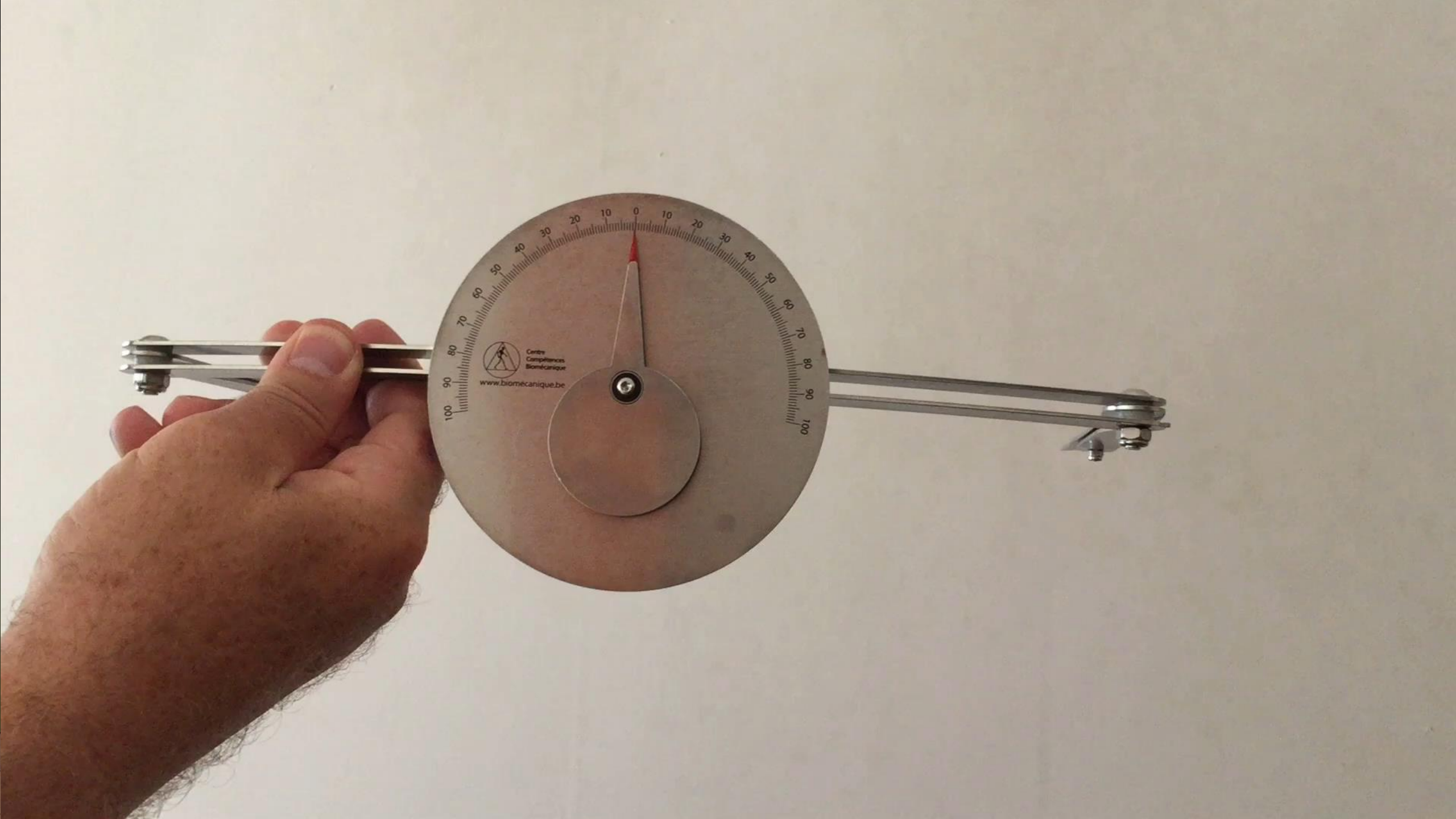
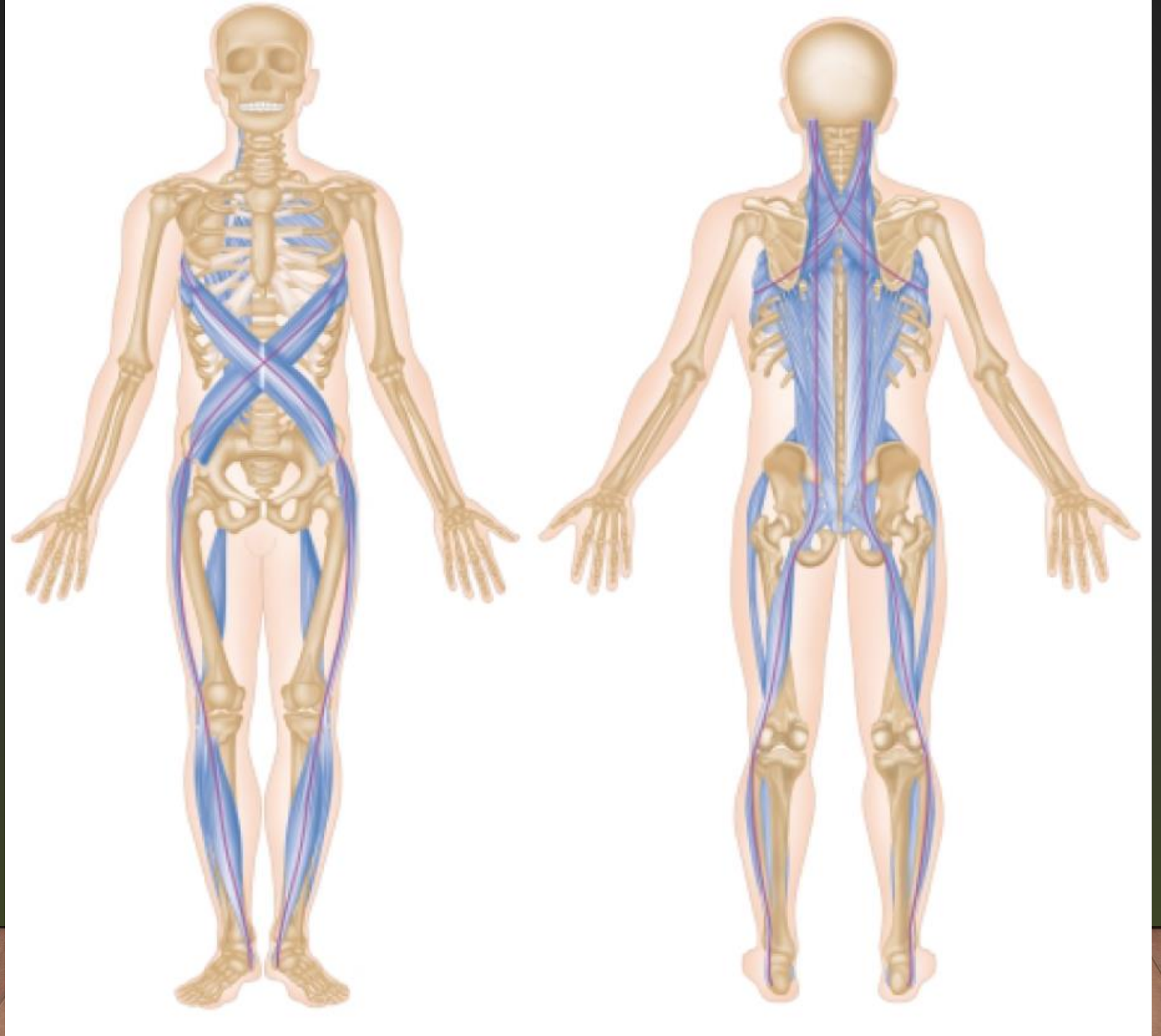



Centre
Compétences
Biomécanique
www.biomécanique.be



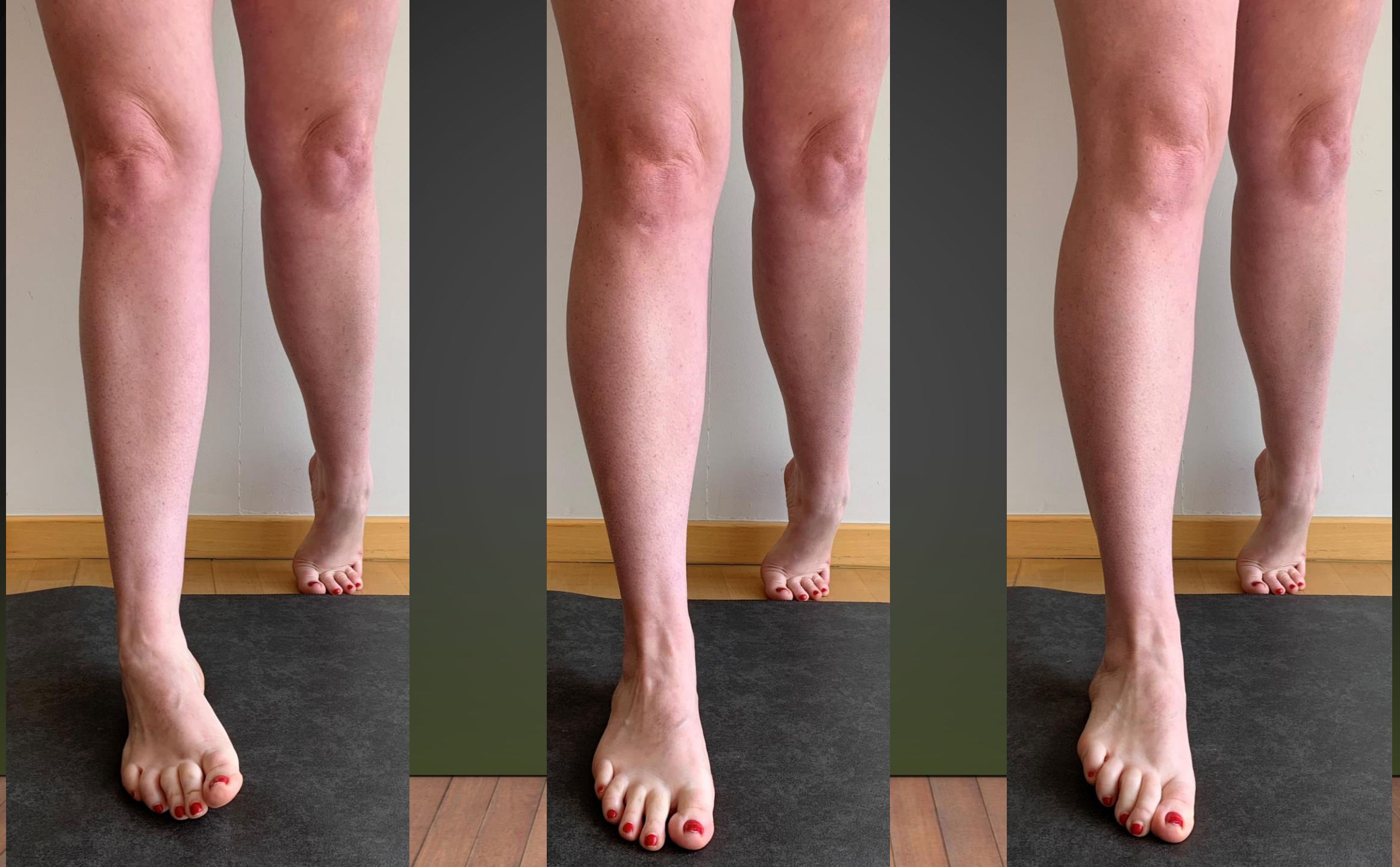
APONÉVROSE PLANTAIRE

TIBIAL POSTÉRIEUR

PATTE D'OIE

FASCIA LATA

CHAÎNES DE PRONATION ET DE SUPINATION





ANALYSE DE MARCHE

- Critères temporels
- Critères de fonctions
- Critères de pression
- Critères d'orientation des segments
- Mouvements parasites

APPROCHE FONCTIONNELLE RÉCAPITULATIF

- Mobilité articulaire
- Position
- Fonction
- Motricité
- Mobilité tissulaire

NOS CONSULTATIONS

- Avenue de Bouillon, 47
- 6800 Libramont
- Belgique

- Avenue Gouverneur Bovesse, 9
- 5100 Jambes (Namur)
- Belgique

MERCI DE VOTRE ATTENTION