

## **Dynamic Postural Chain** **(Chaînes posturales dynamiques)**



Formation agréée par l'Institut International des Sciences de la Motricité sous le label « Fisiohaptica », animée et dirigée par **Alec Stenhouse**, Master of Sciences, Fellow of the American Association of Orthopaedic Manual Physical Therapy, enseignant en Biomécanique Humaine à l'Université St Augustine aux USA.

Cet enseignement est subdivisé en trois séminaires de trois jours chacun ; il a pour objectifs l'évaluation et le traitement différenciés du quadrant supérieur, du quadrant inférieur et de la stabilité lombaire.

Pour 2009-2010 la formation « Dynamic Postural Chain » est programmée en Espagne (Barcelone-Madrid-San Sebastian-Mallorca) et en France (Paris) [voir rubrique « nos prochaines formations et séminaires »]. Les cours se déroulent en français avec traduction en castillan pour l'Espagne.

### **Premier séminaire : Evaluation et traitement différenciés du quadrant supérieur**

**Objectifs** : après avoir suivi ce séminaire l'étudiant aura la faculté :

- de décrire le type, les constituants, et les raisons histologiques de l'ATM
- de tester l'arthrocinématique du quadrant supérieur en terme de composantes de mouvement et jeux articulaires ainsi que d'analyser le lien arthrocinématique entre les différentes articulations de la région
- d'analyser le lien entre 1° les profils cranio-faciaux, 2° la charnière occipito-cranienne, 3° le type d'occlusion, 4° la jonction cervico-thoracique et les adaptations posturales du quadrant supérieur
- d'évaluer la pathologie fonctionnelle du quadrant supérieur
- de contraster l'examen clinique en terme de:
  - Posture
  - Mouvement actif
  - Mouvement passif et arrêt du mouvement
  - Mouvement accessoire

### **Programme** :

#### Introduction

Les facteurs de risque et les liens posturo-mécaniques du quadrant supérieur

- Port antérieur de tête ; protraction des épaules ; adaptations musculaires hypertoniques et hypotoniques (syndromes selon Janda)
- Adaptations articulaires
- Harmonie du quadrant supérieur

#### Biomécanique

- 2.1 Arthrologie Scapulohumérale/Cervicothoracique/ATM
- 2.2 Arthrocinématique Scapulohumérale/Cervicothoracique/ATM
- 2.3 Profils crâniens et la mandibule
- 2.4 L'ATM et l'occlusion

2.5 La charnière occipito-crânienne et l'ATM

2.6 La région hyoïdienne

### Examen clinique et évaluation

3.1 Evaluation de la douleur (Questionnaire)

3.2 Observation initiale

3.3 Anamnèse

3.4 Observation structurelle statique

3.5 Observation fonctionnelle

3.5.1 Parole

3.5.2 Déglutition

3.5.3 Fermeture des lèvres

3.5.4 Position de repos de la langue

3.5.5 Habitudes para-fonctionnelles

3.5.6 Habillage - déshabillage

3.6 Mouvement actif

3.6.1 Mouvements de l'épaule

3.6.2 Mouvements de la colonne cervico-thoracique

3.6.3 Mouvements de l'ATM

3.6.3.1 Dynamique de l'ouverture et fermeture de la mandibule

3.6.3.2 Excursions latérales de la mandibule

3.6.3.3 Protrusion de la mandibule

3.6.3.4 Evaluation des bruits de la temporo-mandibulaire

3.6.3.5 Relation centrique

3.7 Palpation condition clinique

3.8 Mouvement passif et arrêt du mouvement

3.8.1 Mouvements classiques

3.8.1.1 Epaule

3.8.1.2 Colonne cervico-thoracique

3.8.1.3 ATM

3.8.2 Mouvements accessoires

3.8.2.1 Epaule

3.8.2.2 Colonne cervico-thoracique

3.8.2.3 ATM

3.8.3 Schémas capsulaires

3.8.3.1 Epaule

3.8.3.2 Colonne cervico-thoracique

3.8.3.3 ATM

3.9 Tension musculaire sélective

3.10 Souplesse musculaire et fascia

3.11 Testing musculaire

3.12 Tests spéciaux

3.13 Palpation pour la douleur (confirmation)

3.14 Examen neuromusculaire et neurovasculaire

3.15 Examen radiologique

3.16 Evaluation de la dysfonction

3.17 Plan de traitement

3.18 Explication et pronostic

**Deuxième séminaire : approche clinique « evidence based » de la stabilité lombaire fonctionnelle ou contrôle thérapeutique de la « zone neutre » :**

**Objectifs** : après avoir suivi ce séminaire l'étudiant aura la faculté sera capable de :

1. Décrire les éléments qui interviennent dans la stabilité segmentaire
2. Décrire et contraster l'anamnèse clinique qui suggère l'instabilité vertébrale
3. Décrire et contraster les étapes de l'évaluation de la stabilité segmentaire vertébrale
4. Déterminer si l'instabilité est primaire ou secondaire
5. Décrire et contraster les étapes du traitement de l'instabilité lombaire
6. Déterminer le traitement et sa séquence
7. D'éduquer et de responsabiliser le patient présentant une instabilité lombaire

**Programme** :

1. Introduction
2. Historique
  - 2.1. Médical
  - 2.2. Thérapie manuelle
3. La stabilité
  - 3.1. Définitions
    - 3.1.1. Le système de stabilisation vertébrale
    - 3.1.2. La zone neutre
    - 3.1.3. La zone élastique
    - 3.1.4. L'amplitude articulaire
    - 3.1.5. L'index zone neutre et l'amplitude articulaire
  - 3.2. L'anatomie segmentaire lombaire
    - 3.2.1. Eléments passifs
      - 3.2.1.1. Ligaments
      - 3.2.1.2. Capsule articulaire
      - 3.2.1.3. Structure vertébrale
      - 3.2.1.4. Les éléments élastiques passifs musculaires
    - 3.2.2. Eléments actifs
      - 3.2.2.1. Musculature
        - 3.2.2.1.1. Globale
        - 3.2.2.1.2. Locale ou haubanage vertébral
    - 3.2.3. Eléments nerveux et proprioceptifs
      - 3.2.3.1. Racine nerveuse
      - 3.2.3.2. Proprioception
        - 3.2.3.2.1. Passive
        - 3.2.3.2.2. Active
        - 3.2.3.2.3. Position
4. L'instabilité lombaire
  - 4.1. Définition
  - 4.2. La clinique
    - 4.2.1. Algorithme
      - 4.2.1.1. Selon Delitto et al
      - 4.2.1.2. Modification personnelle basée sur Paris, Stanley
    - L'anamnèse
    - 4.2.2. L'évaluation
      - 4.2.2.1. Debout

- 4.2.2.1.1. La posture ou l'observation
- 4.2.2.1.2. Le maintien postural
- 4.2.2.1.3. Le mouvement « classique » lombaire
- 4.2.2.1.4. Test de stabilité
- 4.2.2.1.5. Le test de Gillet (validité, fiabilité)
- 4.2.2.2. Assis
  - 4.2.2.2.1. Piédallu (sitting flexion test (validité, fiabilité))
  - 4.2.2.2.2. Palpation pour condition en assis
- 4.2.2.3. Couché
  - 4.2.2.3.1. Latéral
    - 4.2.2.3.1.1. Palpation (pour la condition pas la douleur)
    - 4.2.2.3.1.2. Mouvement passif intervertébral
    - 4.2.2.3.1.3. Tests de stabilité
    - 4.2.2.3.1.4. Séquence de recrutement musculaire
  - 4.2.2.3.2. Ventral
    - 4.2.2.3.2.1. Palpation (pour la condition pas la douleur)
    - 4.2.2.3.2.2. Tests de stabilité
    - 4.2.2.3.2.3. Mouvement passif intervertébral
    - 4.2.2.3.2.4. Contrôle du transverse abdominal
    - 4.2.2.3.2.5. Séquence de recrutement musculaire
  - 4.2.2.3.3. Dorsal
    - 4.2.2.3.3.1. Mouvement classique des hanches
    - 4.2.2.3.3.2. Mouvement passif ilio-sacré
    - 4.2.2.3.3.3. Flexibilité des ischio-jambiers (liens cliniques)
    - 4.2.2.3.3.4. Flexibilité des gastroc-soléaire (liens cliniques)
- 4.2.3. Le diagnostic kinésithérapique
- 4.2.4. Le traitement
  - 4.2.4.1. La stabilisation musculaire
    - 4.2.4.1.1. Recrutement du transverse abdominal
    - 4.2.4.1.2. Recrutement musculaire couché ventral
    - 4.2.4.1.3. Recrutement musculaire couché latéral
    - 4.2.4.1.4. Tonification en chaîne fermée

## 5. Conclusions

### **Troisième séminaire : examen clinique et traitement de la chaîne cinématique inférieure**

**Objectifs** : après révision des notes de cours et une étude indépendante, l'étudiant sera capable de :

1. Décrire et contraster les périodes et fonctions élémentaires d'un cycle de marche
2. Décrire en termes d'amortissement, de conservation d'énergie, d'équilibre et de propulsion les besoins articulaires fonctionnels du cycle de marche
3. Contraster les mouvements corrélés et compensés du membre inférieur lors du cycle de marche comme conséquence de la biomécanique du pied
4. Observer et évaluer un cycle de marche en termes de normalité qualitative et temporelle
5. Décrire et contraster les différentes dysfonctions biomécaniques du pied
6. Décrire l'arthrocinématique des articulations synoviales du membre inférieur
7. Décrire et contraster l'évaluation biomécanique du pied normal

## **Partie théorique**

### La chaîne cinématique inférieure

1. Le cycle de marche
  - 1.1 Introduction
  - 1.2 Données de base
  - 1.3 Fonctions élémentaires
    - 1.3.1 Propulsion
    - 1.3.2 Equilibre
    - 1.3.3 Amortissement
    - 1.3.4 Conservation d'énergie
- 2 Le cycle de marche normal
  - 2.1 Cheville et pied
    - 2.1.1 Cheville
      - 2.1.1.1 Mouvements
      - 2.1.1.2 Fonction de la cheville selon les phases de marche
    - 2.1.2 Le pied (sous-talaire, Chopart, 1er rayon)
      - 2.1.2.1 Mouvements
      - 2.1.2.2 Interprétation fonctionnelle du pied
  - 2.2 Vue générale du membre inférieur
- 3 Les compensations et dysfonctions possibles
  - 3.1 L'ostéocinématique
  - 3.2 Calcanéum et arrière pied varus
  - 3.3 Avant pied varus
  - 3.4 Compensations contre mouvements corrélés
    - 3.4.1 Calcanéum varus
    - 3.4.2 Calcanéum valgus
    - 3.4.3 Avant pied valgus
    - 3.4.4 Avant pied varus
    - 3.4.5 Genu valgum
    - 3.4.6 Genu varum
    - 3.4.7 Genu recurvatum

## **Partie pratique**

- 3.5 L'arthrocinématique appliquée
  - 3.5.1 Surfaces mâles et femelles
    - 3.5.1.1 Mouvements élémentaires
    - 3.5.1.2 Plan de traitement
  - 3.5.2 Mouvements accessoires
    - 3.5.2.1 Composantes de mouvements
      - 3.5.2.1.1 Glissement
      - 3.5.2.1.2 Roulement
      - 3.5.2.1.3 Rotation
    - 3.5.2.2 Jeux articulaires
      - 3.5.2.2.1 Distraction
      - 3.5.2.2.2 Inclinaisons ou « tilt »
  - 3.5.3 Application pratique

- 3.5.3.1 Coxo-fémorale
- 3.5.3.2 Tibio-fémorale et tibio-fibulaire supérieure
- 3.5.3.3 Talocrurale
- 3.5.3.4 Sous-talaire
- 3.5.3.5 Talo-naviculaire
- 3.5.3.6 Calcanéocuboïdienne
- 3.5.3.7 1er rayon
- 3.5.3.8 Métatarsophalangienne
- 3.5.3.9 Interphalangienne
- 4 Evaluation
- 4.1 Dynamique (illustratif)
  - 4.1.1 Visuel
  - 4.1.2 Empreintes
  - 4.1.3 Vidéo
  - 4.1.4 Plateaux de force
  - 4.1.5 Capteurs de pression
- 4.2 Statique (pratique)
  - 4.2.1 Debout observation
  - 4.2.2 Debout fonctionnel
  - 4.2.3 Mesures
    - 4.2.3.1 Pied neutre
    - 4.2.3.2 Tibiofibula varum
    - 4.2.3.3 Angle calcanéen
    - 4.2.3.4 Angle de l'arrière pied
    - 4.2.3.5 Angle de l'avant pied
    - 4.2.3.6 Chute du naviculaire
    - 4.2.3.7 Angle longitudinal médial
- 5 Conclusions
- 5.1 Observation et compréhension de la dynamique du membre inférieur
- 5.2 Déterminer mouvement corrélé contre compensé
- 5.3 Correction de la compensation

### **Bibliographie – Séminaire 1**

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