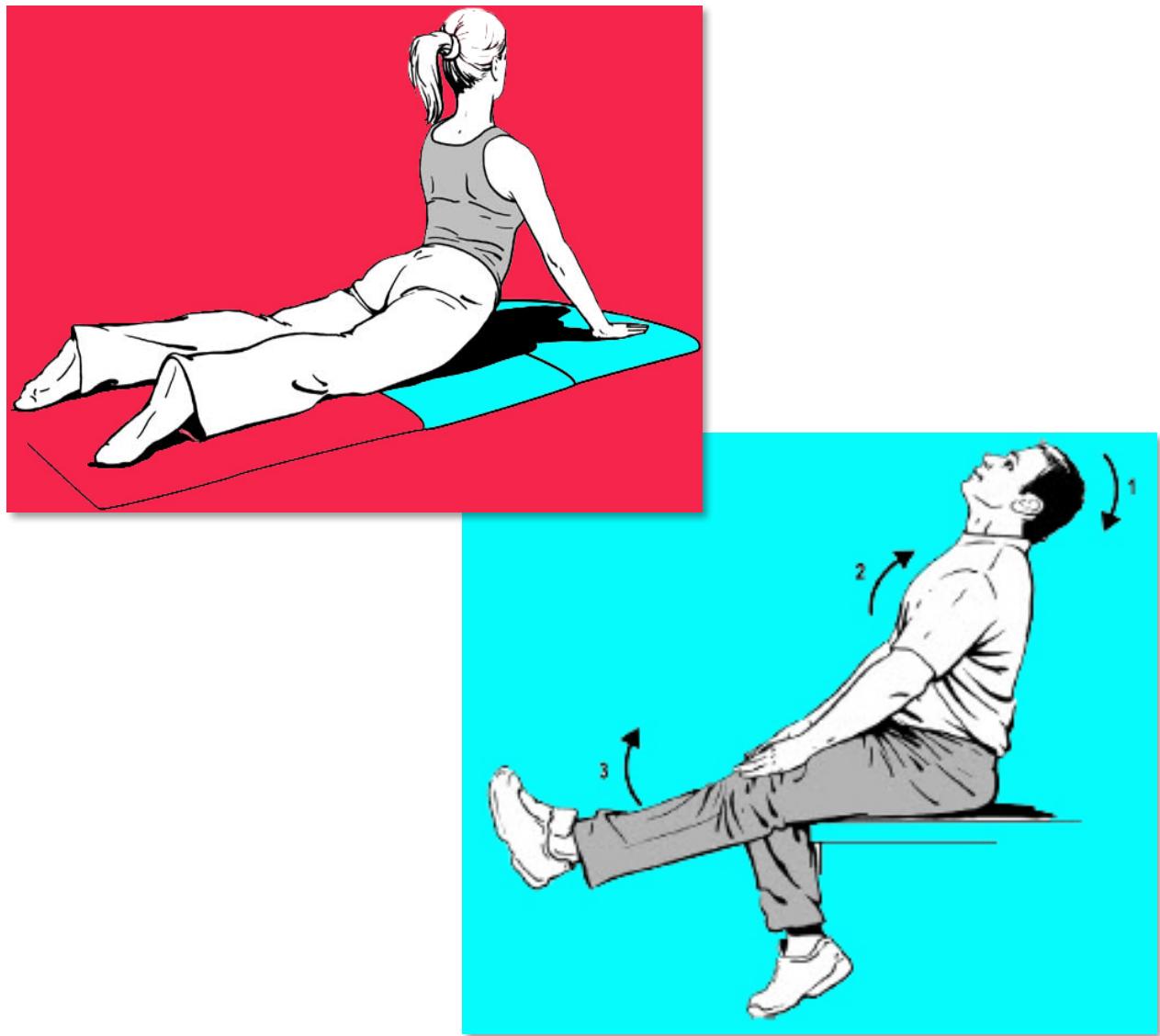
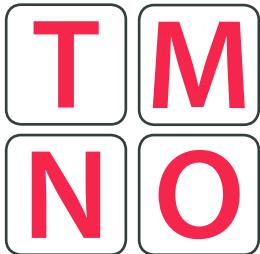


« Sciatalgies» et racine nerveuse lombale adhérente  
Intégration de la thérapie manuelle neurodynamique  
dans la méthode McKenzie



AFMcK  
Lyon 27-28-janvier 2014

Jan De Laere  
Physiothérapeute - thérapeute manuel



## INSTITUT de THÉRAPIE MANUELLE NEURO-ORTHOPÉDIQUE

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# «Sciatalgies» et la racine nerveuse adhérente

## Syndrome de dysfonction

Altération structurelle  
des tissus mous péri- et/ou  
intra-articulaires avec une  
douleur intermittente,  
uniquement en fin  
d'amplitude

www.tmno.ch

## Syndrome d'ARN

Adhérences engendrant  
une hypomobilité de la  
racine nerveuse, de la gaine  
durale et/ou de la dure  
mère (complexe dural)

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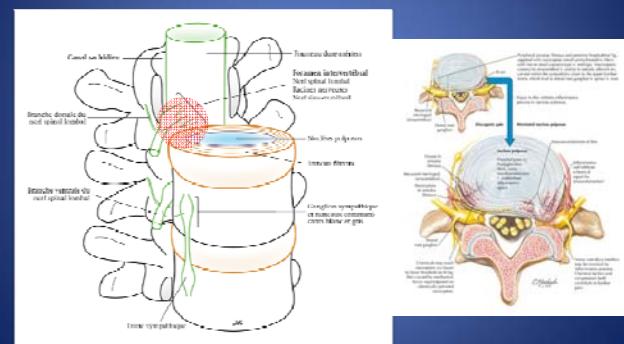
## Syndrome d'ARN

avec une sciatalgie ou une  
fémoralgie intermittente,  
mais persistante suite à une  
symptomatologie constante

La seule dysfonction avec  
D/Sy distales

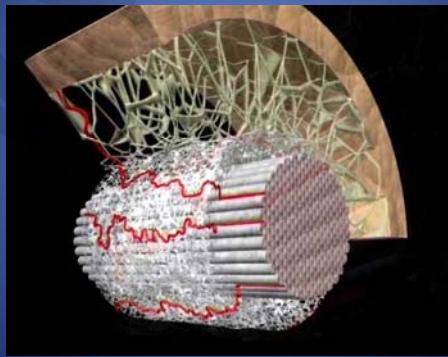
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## Syndrome d'ARN



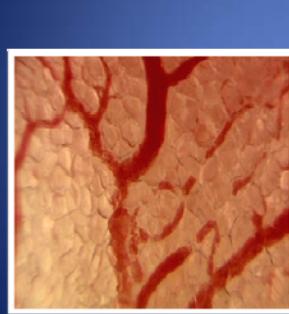
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## J-CI. Guimberteau - 2005



www.tmno.ch

## J-CI. Guimberteau - 2005



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# «Sciatalgues» et la racine nerveuse adhérente

## Syndrome d'ARN

# Comment les adhérences se forment-elles ?

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## McKenzie/May - 2003

CHAPTER THREE  
THE LUMBAR SPINE-MUSCULATURE DYSFUNCTION & THERAPY

### Tissue repair process

Following tissue injury, the process that in principle leads to recovery is divided into three overlapping phases – inflammation, repair and remodeling (Evans 1983, Maydyk 1989, Evans and Maydyk 1993, Rutherford and Willoughby 1992). “No inflammation / no repair is a valid dictum.” (Carroll *et al.* 1982). In fact, each part of this process is essential to the structure of the final result. Connective tissue and muscle do not regenerate if damaged, but are replaced by inferior fibrous scar tissue (Evans 1982, Hardy 1989). To produce optimal repair tissue, all phases of this process need to be completed in the appropriate time.

Stages of Healing:

1. Inflammation
2. Tissue repair
3. Remodeling

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## Stephen May - 2006

- McKenzie décrit le syndrome d'ARN comme existant mais relativement rare

Lumbar Observational studies  
May S. Classification by McKenzie of lumbar syndromes. A survey of McKenzie-trained faculty. J Manipulative Physiol Ther Oct 29: 537-542, 2006

Survey of 57 therapists in 18 countries and data of 607 consecutively discharged spinal patients and their mechanical syndrome classification. Individually each therapist recorded a mechanical classification in 82% of their patients, in total 83% of 607 patients had a mechanical classification - derangement 70%, dysfunction 3%, adherent/nervous root (1%) and postural syndrome (1%). Other was recorded in 17% of patients. Most commonly mechanically inconclusive, chronic pain stats and post surgery

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## Méthode McKenzie

# Tableau clinique du syndrome d'ARN

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## Anamnèse

- douleur intermittente dans le membre inférieur : cuisse, jambe et/ou pied
- parfois uniquement sensations de raideur, de lourdeur, de tension, de paresthésies, de brûlure ou d'engourdissement

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## Anamnèse

- souvent D/Sy reproduites au cours de mouvements/positions de type *SLR* ou *Slump*
- D/Sy disparaissent au retour du mouvement/de la posture
- en général D/Sy unilatérales

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# «Sciatalgies» et la racine nerveuse adhérente

## Anamnèse



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## Anamnèse

- sciatalgie, fémoralgie, ...
- depuis au moins 3 mois
- phase stationnaire, succédant à la phase d'amélioration
- après hernie discale, chirurgie lombale, traumatisme,...immobilisation, rééducation classique

www.tmno.ch

## Examen physique

- flexion Lx en décubitus dorsal :
  - ne reproduit pas la D/Sy distales en fin de course – parfois D Lx
  - influence des mouvements de la tête, du genou et du pied ?
- pas de changement rapide D/Sy lors des mouvements répétés

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## Examen physique

- flexion en position debout :
  - modérément, voire fortement limitée
  - parfois accompagnée d'une déivation Lx vers le côté dououreux
  - reproduit les D/Sy distales en fin de course

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## Examen physique



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## Examen physique

- dans la majorité des cas, pas de diminution ou de perte de force, des réflexes ou de sensibilité !
- élévation de la jambe tendue :
  - «significativement» limitée
  - reproduit les D/Sy distales

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# «Sciatalgies» et la racine nerveuse adhérente

Méthode McKenzie

DD avec le syndrome de dérangement postérieur réductible accompagné d'une sciatalgie

Pourquoi ?

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Méthode McKenzie

«Management» thérapeutique syndrome d'ARN

[www.tmno.ch](http://www.tmno.ch)

But du traitement

Remodeler les adhérences (fibrose cicatricielle), qui limite la mobilité de la racine nerveuse

[www.tmno.ch](http://www.tmno.ch)

But du traitement

Étirements par des mises en tension des adhérences autour de la racine nerveuse !

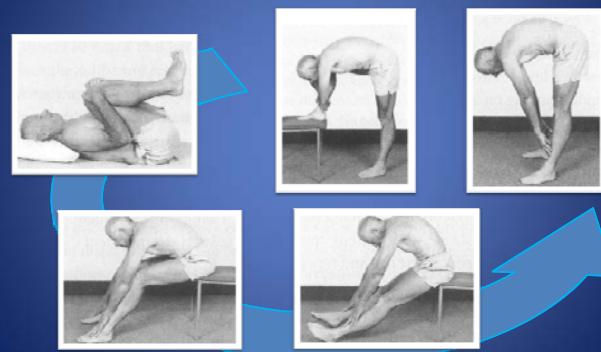
[www.tmno.ch](http://www.tmno.ch)

Techniques

- flexion lombale en décubitus dorsal, les genoux fléchis
- flexion lombale en position assise (progressions)
- flexion lombale en position debout - les 2 jambes tendues ou 1 pied sur une chaise

[www.tmno.ch](http://www.tmno.ch)

Méthode McKenzie



[www.tmno.ch](http://www.tmno.ch)

# «Sciatalgies» et la racine nerveuse adhérente

AFMcK - Lyon 2014

## Articles *Case reports* Études?

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Walter Larson

Diagnosis and Treatment of an Adherent Nerve Root

This newsletter is a continuation of our "McKenzie Series". We recommend that you visit our website [www.capitalpt.com](http://www.capitalpt.com) to view our previously released McKenzie newsletters prior to reading this edition.

What is an adherent nerve root?

www.tmno.ch

David Gallegos - 2008

CASE REVIEW

Mechanical Diagnosis and Therapy of an Adherent Lumbar Nerve Root

David F Gallegos, MA, ATC, Cert. MDT • Gadsden High School, Anthony, NM.  
Denise Campbell, PT, Dip., MDT • Southwest Spine and Spine Center Inc., Las Cruces, NM;  
Laura Gonzalez, PT, MA, ATC • New Mexico State University

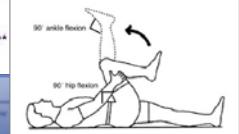
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Martin Melbye - 2010

Manual Therapy

An adherent nerve root – Classification and exercise therapy in a patient diagnosed with lumbar disc prolapse

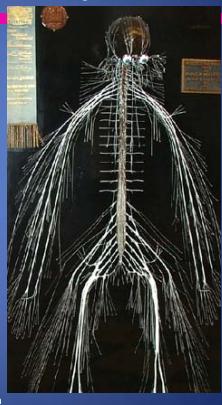
Martin Melbye<sup>1</sup>



Neural Stretches

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Continuité mécanique, ...

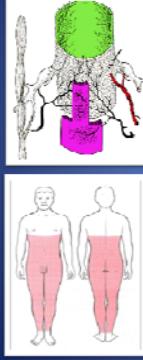


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Lancet 1945 et 1978

James Cyriax

- Dural pain
- Syndrome dure-mérien
- Concept dural



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# «Sciatalgies» et la racine nerveuse adhérente

## Geoffrey Maitland - 1978

www.tmno.ch

## Geoffrey Maitland - 1978/1979

The Slump Test: Examination and Treatment

Geoffrey B. Maitland

Editorial Note: This article was first published in the British Journal of Clinical Practice in 1978. It has been reproduced by kind permission of the author and the publishers, Blackie & Son Ltd and the Royal Society of Medicine. The author would like to thank Dr David Butler for his comments on the original manuscript and for his help in the preparation of this article.

Editorial Note: This article was first published in the British Journal of Clinical Practice in 1978. It has been reproduced by kind permission of the author and the publishers, Blackie & Son Ltd and the Royal Society of Medicine. The author would like to thank Dr David Butler for his comments on the original manuscript and for his help in the preparation of this article.

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## René Louis - 1978/1981

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## Suède - Australie - Angleterre

### Alf Breig - Sydney Sunderland - Robert Elvey David Butler - Louis Gifford

### *Adverse mechanical tension of the nervous system - AMT ou ANT*

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## Alf Breig - Suède - 1978

### Adverse Mechanical Tension in the Central Nervous System

Breig, Alf

www.tmno.ch

## David Butler - 1989

### Adverse Mechanical Tension in the Nervous System: A Model for Assessment and Treatment

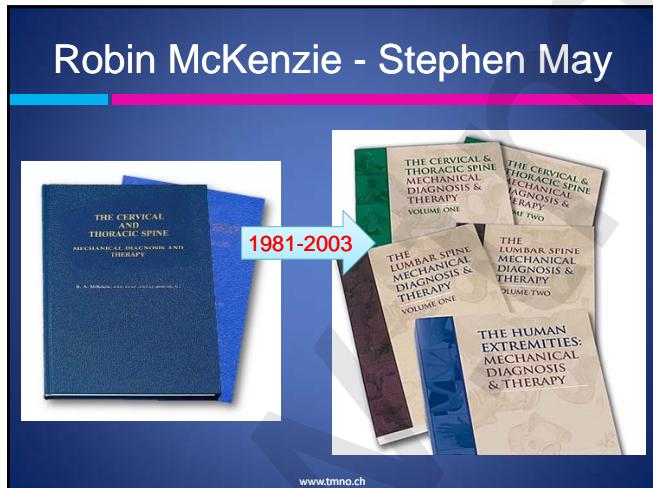
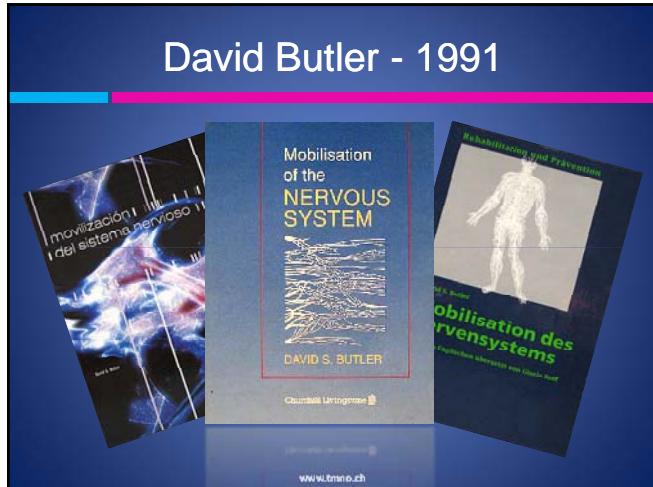
DAVID E. BUTLER

David Butler, B.Phys., Cert.Dip.Adv.Mgmt.Thcr, is a physiotherapist and author. He has lectured extensively in Australia, New Zealand, America, Canada, Europe, and Japan. He is a member of the Australian Association of Physiotherapists and the International Federation of Physical Therapy Associations. He is also a member of the Royal Australian and New Zealand College of Physiotherapists.

This article reviews some initial and important concepts of the nervous system that is based on clinical observation and interpretation of adverse mechanical tension in the nervous system. A broad approach is outlined which provides an insight into the pathophysiology of the nervous system and its implications for symptom production. The concepts of assessment and treatment pathology are also discussed and related to assessment and treatment.

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# «Sciatalgies» et la racine nerveuse adhérente



Complémentarité? Oui

Même style, même langage :

- modèle bio-psycho-social
- irritabilité
- drapeaux oranges et rouges
- raisonnement clinique
- *evidence based - clinical practice*
- réévaluation - progressions
- auto-traitement

[www.tmno.ch](http://www.tmno.ch)

Complémentarité? Oui

Même continent, même période:

- Robin Anthony McKenzie (2013)
- Geoffrey Douglas Maitland (2010)
- Robert Elvey (2013)
- David Butler
- Michael Shacklock

[www.tmno.ch](http://www.tmno.ch)

Complémentarité? Oui

L'anamnèse détaillée est le point de départ et détermine l'examen clinique

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# «Sciatalgies» et la racine nerveuse adhérente

Complémentarité? Oui

La représentation clinique prime sur toute analyse théorique

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Thérapie manuelle neurodynamique

Neuro-dynamique

www.tmno.ch

Michael Shacklock - 1995

Neurodynamique =  
interaction entre les fonctions physiologiques et mécaniques du système nerveux en fonction des tissus tributaires

www.tmno.ch

Thérapie manuelle neurodynamique

Neurophysiologie

Neurobiomécanique

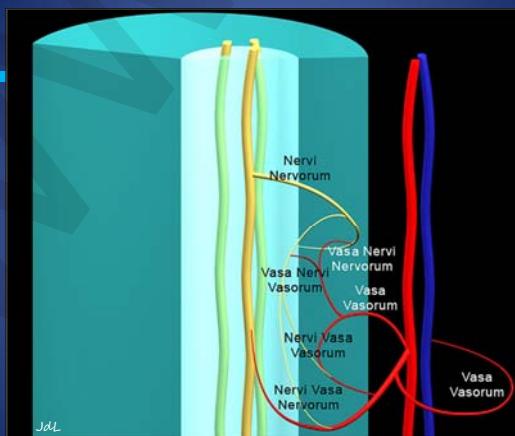
Innervation - conduction  
Transports axonaux  
Vascularisation  
Gradients pression  
Nociception

Mécanosensibilité

Mise en tension  
Glissement  
Déplacement  
Compression  
Vibration  
Angulation-torsion

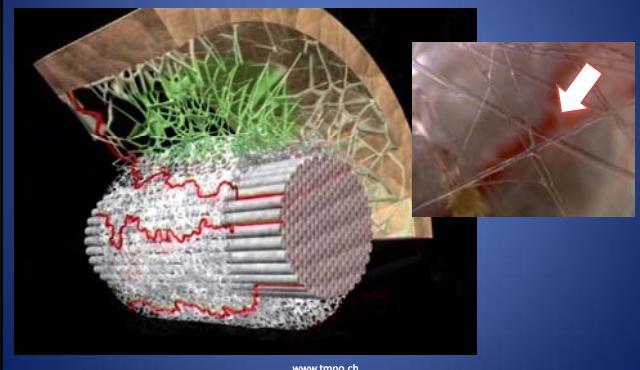
Mobilité  
Visco-élasticité

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Adhérences neurofascias



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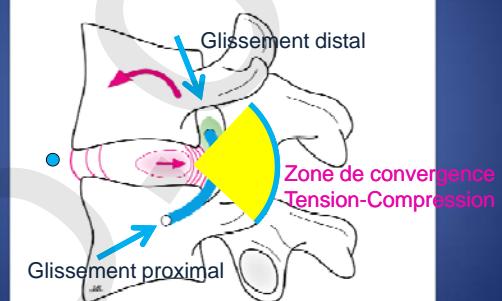
# «Sciatalgies» et la racine nerveuse adhérente

Thérapie manuelle neurodynamique

## Point ou zone de convergence

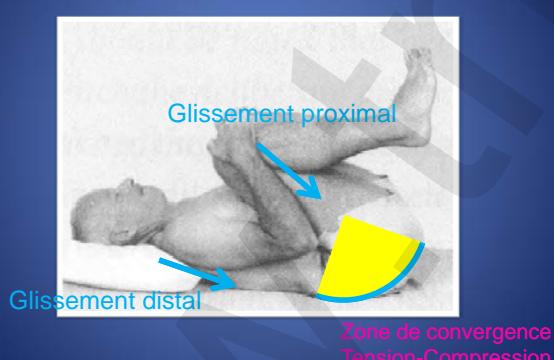
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Zone de convergence



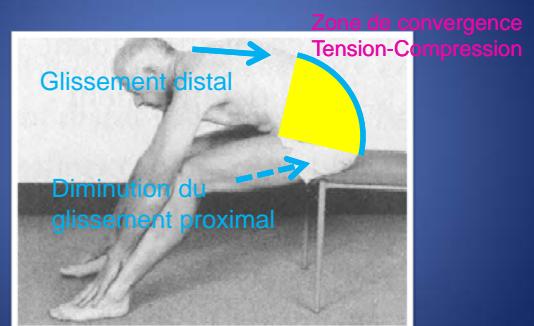
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Zone de convergence



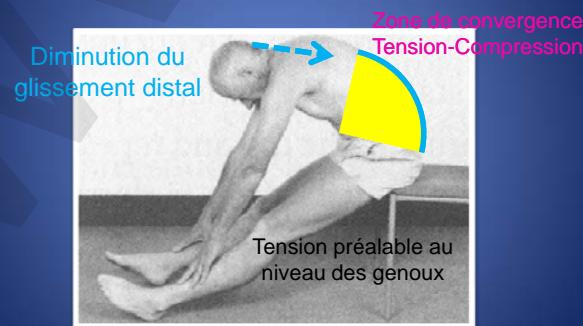
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Zone de convergence



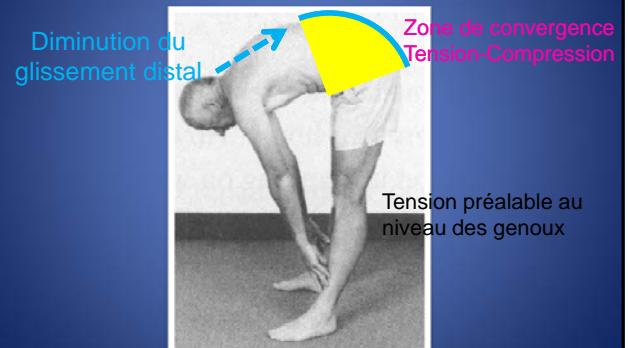
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Zone de convergence



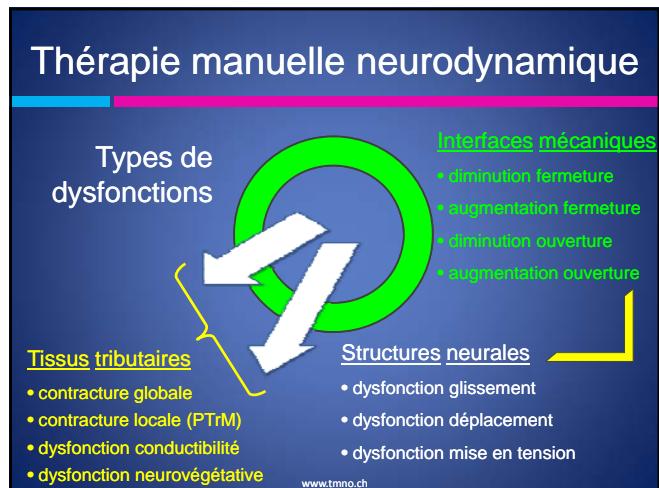
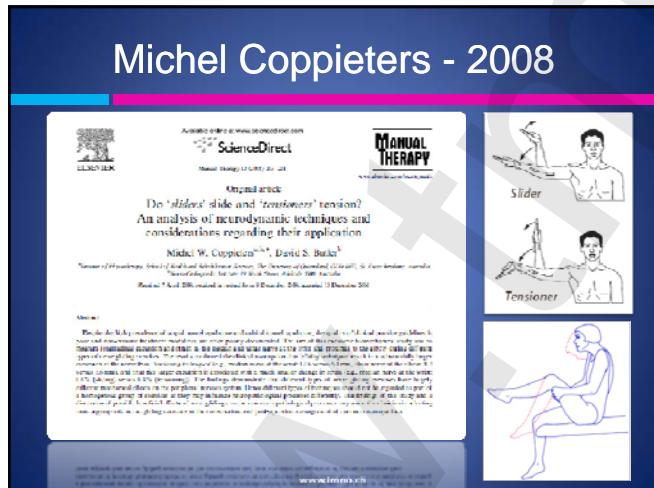
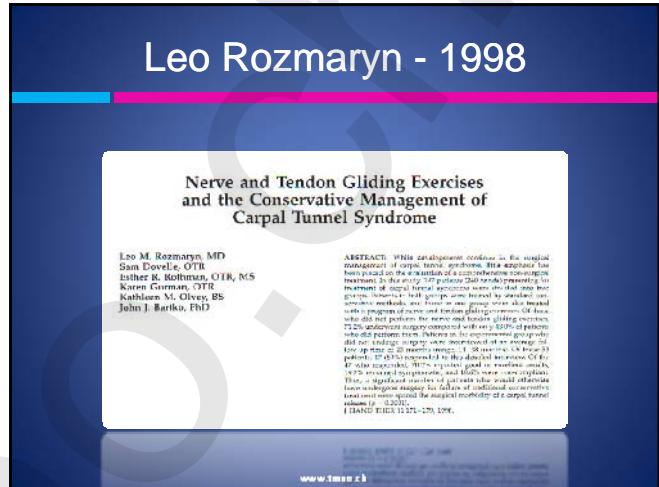
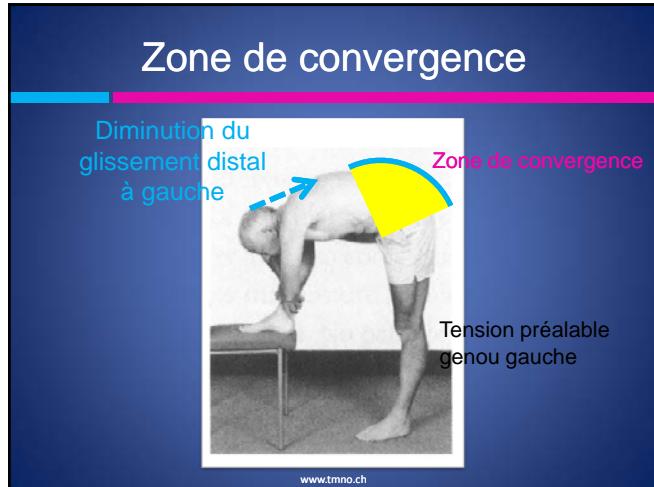
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Zone de convergence



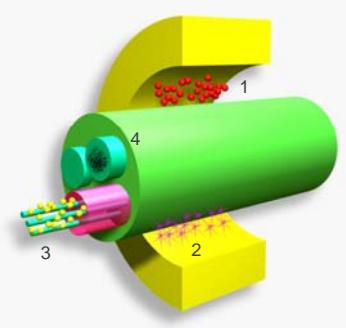
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# «Sciatalgies» et la racine nerveuse adhérente



# «Sciatalgies» et la racine nerveuse adhérente

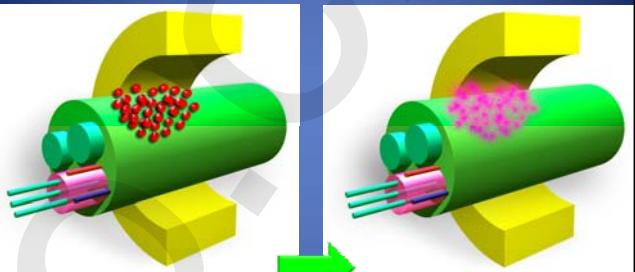
## Thérapie manuelle neurodynamique



1. Pathophysiologique Extraneurale Aiguë-subaiguë
2. Pathomécanique Extraneurale Chronique
3. Pathophysiologique Intraneurale Aiguë-subaiguë
4. Pathomécanique Intraneurale Chronique

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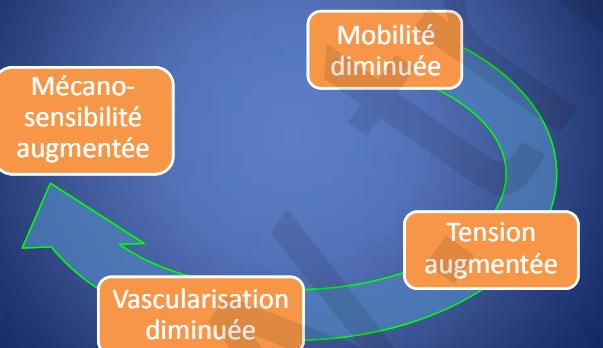
## Thérapie manuelle neurodynamique



Phase inflammatoire      Phase stationnaire

[www.tmno.ch](http://www.tmno.ch)

## Suite à une irritation, inflammation



Mécano-sensibilité augmentée

Vascularisation diminuée

Mobilité diminuée

Tension augmentée

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## Thérapie manuelle neurodynamique

# Réflexions concernant le bilan

[www.tmno.ch](http://www.tmno.ch)

## Démonstration fonctionnelle

- flexion lombale en position assise, genoux en extension
- flexion lombale en position debout, genoux en extension

→ influence de la position de la tête ou du pied sur la sciatalgie ou autre Sy?

[www.tmno.ch](http://www.tmno.ch)

## Démonstration fonctionnelle



[www.tmno.ch](http://www.tmno.ch)

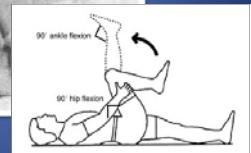
# «Sciatalgies» et la racine nerveuse adhérente

## Examen physique

- flexion lombale en décubitus dorsal, les genoux fléchis ne reproduit pas la D/Sy distale
- ➔ influence de la position du genou, de la tête ou du pied sur la D/Sy?

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## Examen physique



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## Examen physique

- flexion lombale en position debout : reproduit les D/Sy distales, est significativement limitée et déviation du tronc
- ➔ influence de la position du genou ou de la tête sur les D/Sy, la mobilité-la déviation?

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## Examen physique

Le Lasègue «classique»  
= test neurodynamique  
ne permet pas toujours  
de différencier le  
dérangement postérieur du  
syndrome d'ARN, mais ...

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## Examen physique

Test Slump = test ND  
Sensibiliser/Désensibiliser  
avec une composante à  
distance ! positif  
Sensibilité et Spécificité

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## Test ND positif

- C/O : localisation, description...
- D/Sy distales sont reproduites et changent (différenciation)
- différence significative D/G
- différence par rapport «normal»
- autres signes : compensation...

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# «Sciatalgies» et la racine nerveuse adhérente

## Séquence neurodynamique

- différentes combinaisons : flexion Lx, flexion de la hanche, extension du genou, flexion dorsale de la cheville,...
- ➔ permettent de différencier le syndrome d'ARN du dérangement postérieur

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## Séquence neurodynamique

SLR ou EJT



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## Séquence neurodynamique

Slump



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## Thérapie manuelle neurodynamique

Fondée sur des recherches cliniques ?

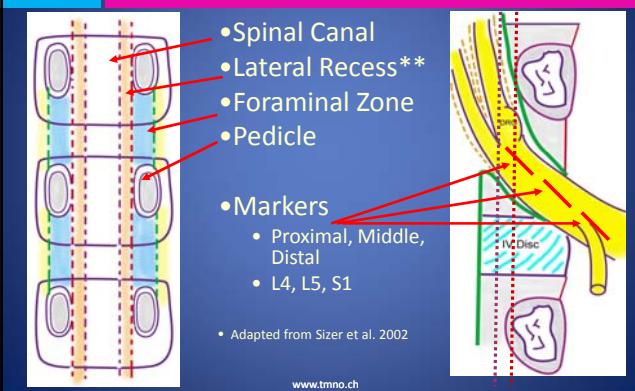
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## Kerry Gilbert - 2007



www.tmno.ch

## Kerry Gilbert - 2007



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# «Sciatalgues» et la racine nerveuse adhérente

# Javid Majlesi - 2008

**Lee Harrington - 2008**

Available online at [www.informaworld.com](http://www.informaworld.com)

**ScienceDirect**  
Manual Therapy 12 (2008) 29–36

**Original article**

**What is the normal re-response to structural differentiation within the shrimp and straight leg raise tests?**

Lee Harrington<sup>a,b,\*</sup>, Kate Bedford<sup>a</sup>, Catherine Lommer<sup>a</sup>, Nicola Meltzer<sup>a</sup>, Karen Hunter<sup>a</sup>

<sup>a</sup> *Department of Sport, University of Derby, UK*  
<sup>b</sup> *Health and Social Care Research Institute, University of Derby, UK*

**Abstract**  
The purpose of this study was to evaluate the effect of structural differentiation of lumbar movements on responses of normal subjects to different levels of mechanical load. Twenty-four healthy volunteers, aged 18–34 years, were asked to perform a straight leg raise (SLR) and a shrimp test (ST) under two conditions. In condition 1, subjects were asked to move their lower limb in a non-discriminatory manner, while in condition 2, subjects were asked to move their lower limb in a discriminatory manner. Structural differentiation was achieved by asking subjects to move their lower limb in a manner that would elicit a greater degree of differentiation in the low back muscles and therefore increase the load placed on the back. Measures of movement range, time taken to complete the movement, and the number of times subjects had to move their lower limb to achieve a full straight leg raise were recorded. The results showed that subjects took longer to complete the ST than the SLR ( $p < 0.001$ ) and that subjects had a greater range of movement during the SLR than the ST ( $p < 0.001$ ). During the SLR, subjects spent relatively more time moving their lower limb to achieve a full straight leg raise than during the ST ( $p < 0.001$ ). There was no significant difference between the number of times subjects had to move their lower limb to achieve a full straight leg raise during the SLR and the ST ( $p = 0.385$ ), although the mean number of times subjects had to move their lower limb to achieve a full straight leg raise was 1.5 times greater during the SLR than the ST ( $p < 0.001$ ). These findings could have implications for the interpretation of low back pain in patients experiencing restricted movement.

\*Corresponding author. Tel.: +44 1782 293333 ext. 2306; fax: +44 1782 293333 ext. 2306.

[www.informaworld.com](http://www.informaworld.com)

# Kate Trainor - 2011

# Benjamin Boyd - 2006 à 2013

# Examen neurologique

The image consists of six clinical photographs arranged in a 2x3 grid. The top row shows the lower leg and ankle. The left photo shows a pin prick test being applied to the skin. The middle photo shows a similar test being applied to a pink-painted area. The right photo shows a reflex hammer being used on the Achilles tendon. The bottom row shows the foot. The left photo shows a pin prick test being applied to the skin. The middle photo shows a similar test being applied to a pink-painted area. The right photo shows a reflex hammer being used on the plantar surface of the foot.

# «Sciatalgies» et la racine nerveuse adhérente

## Examen neurologique

indispensable pour évaluer l'intégrité du système nerveux  
= dysfonction intraneurale

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## Palpation du nerf ischiaticque



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## Palpation du nerf périphérique

pour affiner le diagnostic : tester la mécano-sensibilité du nerf périphérique tout le long de son trajet

www.tmno.ch

## Examen des interfaces mécaniques



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## Thérapie manuelle neurodynamique

Réflexions concernant le traitement

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## Thérapie manuelle neurodynamique

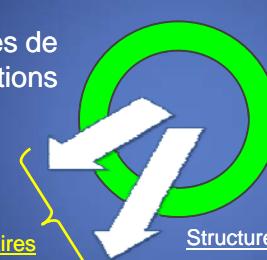
### Types de dysfonctions

### Tissus tributaires

- contracture globale
- contracture locale (PTrM)
- dysfonction conductibilité
- dysfonction neurovégétative

### Interfaces mécaniques

- diminution fermeture
- augmentation fermeture
- diminution ouverture
- augmentation ouverture



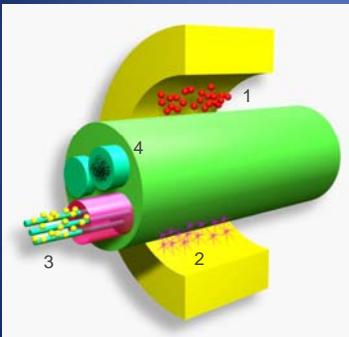
### Structures neurales

- dysfonction glissement
- dysfonction déplacement
- dysfonction mise en tension

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# «Sciatalgies» et la racine nerveuse adhérente

## Thérapie manuelle neurodynamique



1. Pathophysiologique Extraneurale Aiguë-subaiguë
2. Pathomécanique Extraneurale Chronique
3. Pathophysiologique Intraneurale Aiguë-subaiguë
4. Pathomécanique Intraneurale Chronique

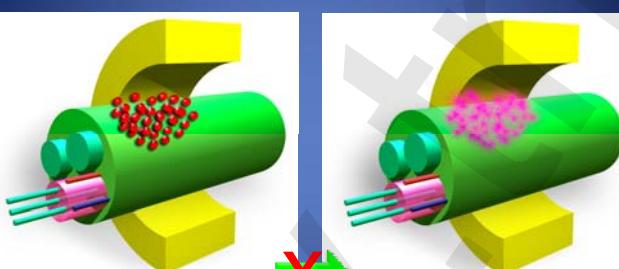
[www.tmno.ch](http://www.tmno.ch)

## Thérapie manuelle neurodynamique

- position d'antitension ou de détente du système nerveux
- ouverture des interfaces
- glissements alternés rythmés (proximaux et distaux) du nerf périphérique = antalgie et prévention de la fibrose

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## Thérapie manuelle neurodynamique



Phase inflammatoire      Éviter adhérences

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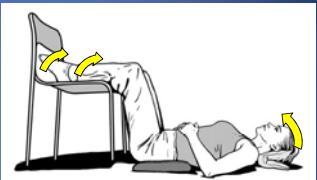
## Thérapie manuelle neurodynamique



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## Complémentarité thérapeutique

- Flexion dorsale pied
- Extension genou
- Flexion tête
- Flexion plantaire pied
- Flexion genou



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## Thérapie manuelle neurodynamique



Neuro-glisements



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# «Sciatalgies» et la racine nerveuse adhérente

## Thérapie manuelle neurodynamique

Traiter la dysfonction extraneurale = restaurer la mobilité de la racine  
Interfaces mécaniques et neuroglissements

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## Thérapie manuelle neurodynamique



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## Thérapie manuelle neurodynamique



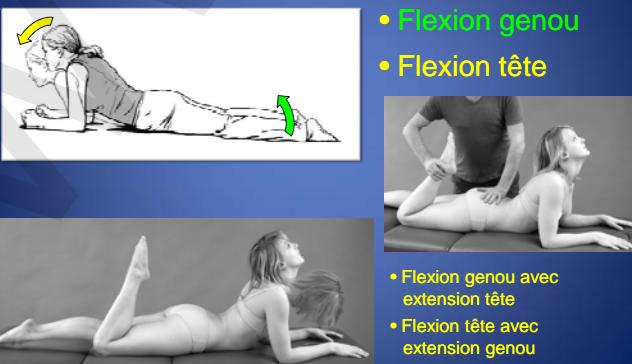
Interfaces mécaniques  
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## Thérapie manuelle neurodynamique



Interfaces mécaniques  
[www.tmno.ch](http://www.tmno.ch)

## Complémentarité thérapeutique



## Thérapie manuelle neurodynamique



distaux



proximaux



alternés

Neuroglissements

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# «Sciatalgies» et la racine nerveuse adhérente

## Thérapie manuelle neurodynamique



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## Thérapie manuelle neurodynamique

Traiter la dysfonction intraneurale = remodeler les neurofascias:  
Optimiser la visco-élasticité = neurotensions

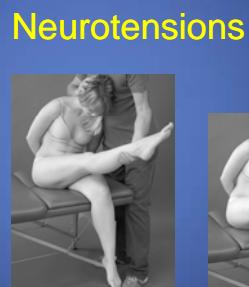
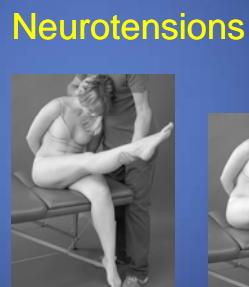
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## Thérapie manuelle neurodynamique

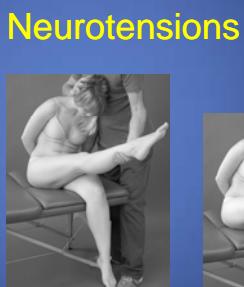


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## Thérapie manuelle neurodynamique



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## Thérapie manuelle neurodynamique



Progressions

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## Thérapie manuelle neurodynamique

Participation du patient et consolidation = Neurogymnastique

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# «Sciatalgies» et la racine nerveuse adhérente

## Thérapie manuelle neurodynamique



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## Articles 2002 - 2006

1. Characteristics of Patients With Lower Extremity Symptoms Treated With Slump Stretching: A Case Series. *Steven George*, Journal of Orthopaedic & Sports Physical Therapy, 2002, Volume32, Issue 8: 391-398
2. Physiotherapy and spinal nerve adhesion: a caution. *Cynthia Lewis*, Physiotherapy Research Int. 2004; 9: 164-173
3. Effectiveness of neural mobilization in the treatment of a patient with lower extremity neurogenic pain: a single-case design. *Joshua Cleland*, Journal of Manual and Manipulative Therapy, 2004;12(3): 143-151
4. Slump stretching in the management of non-radicular low back pain: a pilot clinical trial. *Joshua Cleland*, Manual Therapy, 2006;11(4): 279-286  
www.tmno.ch

## Articles 2007 - 2011

1. Efficacy of neural mobilization in sciatica. *E Sarkari*, Journal of Exercise Science and Physiotherapy, 2007; 3(2): 136-141
2. Neural mobilization: a systematic review of randomized controlled trials with an analysis of therapeutic efficacy. *Richard Ellis*, J Man Manip Ther, 2008;16(1): 8-22
3. Outcomes differ between subgroups of patients with low back and leg pain following neural manual therapy: a prospective cohort study. *Axel Schäfer*, European Spine Journal, 2011;20(3): 482-490
4. Efficacy of Neural Mobilization in Treatment of Low Back Dysfunctions. *Sahar Adel*, Journal of American Science, 2011;7(4): 566-573  
www.tmno.ch

## Ali Talebi - 2010

Journal of Tech and Manu Rehabil 2010; 2(1): 191-195  
DOI: 10.5205/zenodo.1201295  
Case Report

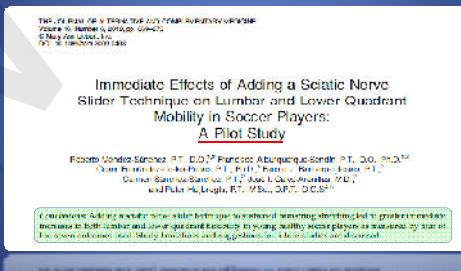
Treatment of chronic radiculopathy of the first sacral nerve root using neuromobilization techniques: A case study

Ghadam Ali Talebi\*, Mohammad Taghipour Dastjerdi\*, Amin Norouzi Fazlkhani\*

\*Department of Physiotherapy, Faculty of Rehabilitation, Tabriz University of Medical Sciences, Tabriz, Iran  
†Department of Physiotherapy, Faculty of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran  
‡Department of Physical Therapy, Shahid Beheshti University of Medical Sciences, Tehran, Iran

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## Roberto Méndez-Sánchez - 2010



## Roberto Méndez-Sánchez - 2010

	<b>Groupe A</b> 4 footballeurs entre 19 et 23 ans, sans symptomatologie	<b>Groupe B</b> 4 footballeurs entre 19 et 23 ans, sans symptomatologie	
Mesures avant	1. Distance doigts-sol 2. Distance doigts-orteils LS 3. Test Schöber 4. SLR 5. Extension genou <i>Slump</i>	1. Distance doigts-sol 2. Distance doigts-orteils LS 3. Test Schöber 4. SLR 5. Extension genou <i>Slump</i>	
Traitemen-t	5 minutes posture étirements bilatéraux muscles ischio-jambiers	Idem groupe A avec 1 minute neuro-glissements chaque côté	
Measures après	Toutes les mesures s'améliorent	Toutes les mesures s'améliorent par rapport du groupe A, surtout <i>SLR</i> (3°) et extension genou <i>Slump</i>	 

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# «Sciatalgies» et la racine nerveuse adhérente

**Y. Castellote-Caballero - 2012**

*Physical Therapy in Sport (2012) 13–17*  
*Contents lists available at SciVerse ScienceDirect*  
*Physical Therapy in Sport*  
*journal homepage: www.elsevier.com/locate/ptsp*

**ELSEVIER**

Original research  
**Effects of a neurodynamic sliding technique on hamstring flexibility in healthy male soccer players. A pilot study**

Yolanda Castellote-Caballero<sup>a</sup>, María Carmen Valenza<sup>b</sup>, Lydia Martín-Martín<sup>b</sup>, Irene Cabrera-Martos<sup>b</sup>, Emilio J. Puente<sup>c</sup>, César Fernández-de-las-Peñas<sup>d</sup>

<sup>a</sup> Hospital Universitario de Alcalá, Madrid, Spain  
<sup>b</sup> Department of Physical Therapy, Universidad de Granada, Granada, Spain  
<sup>c</sup> Research Group in Physiotherapy, School of Physical Education, University of Alcalá de Henares, Madrid, Spain  
<sup>d</sup> Department of Physical Therapy, Preventive Health, Rehabilitation and Sports Medicine, Technische Universität Dresden, Dresden, Germany

<http://dx.doi.org/10.1016/j.ptsp.2012.03.002>  
[www.elsevier.com/locate/ptsp](http://www.elsevier.com/locate/ptsp)

**Y. Castellote-Caballero - 2012**

The flowchart details the study protocol:  
 1. **Recruitment**: 48 subjects were recruited.  
 2. **Randomization**: 24 subjects were assigned to the intervention group and 24 to the control group.  
 3. **Baseline Measurements**: Both groups underwent Flexion SLR and Extension SLR measurements.  
 4. **Intervention**: The intervention group received a neurodynamic sliding technique.  
 5. **Follow-up**: Measurements were taken at baseline, post-intervention, and at day 6.

**Kranthi Pallipamula - 2012**

*REVISTA ROMÂNĂ DE KINETOTERAPIE*  
*REVUE ROUMAÎNE DE KINETOTERAPIE*  
*VOL. 10 NR. 10-2012*

**EFFICACY OF NERVE FLOSSING TECHNIQUE ON IMPROVING SCIATIC NERVE FUNCTION IN PATIENTS WITH SCIATICA – A RANDOMIZED CONTROLLED TRIAL**

**EFICACITATEA TEHNICIILOR NERVE FLOSSING ÎN IMBUNÂTÂȚIREA FUNCȚIEI NERVULUI SCIATIC LA PACIENTII CU SCIATICA – STUDIU RANDOMIZAT**

**Kranthi Pallipamula<sup>a</sup>, Singaravelan RM<sup>b</sup>**

**Key words:** sciatica, nerve flossing technique, sciatic nerve flossing, reduce pain a numberous inferior exten

**Conclusion:** Nerve flossing technique can be utilized with other modalities as the treatment of acute sciatic nerve pain and can be used as an adjunct to the set of pain and sensory symptoms like tingling and numbness, increase of waist mobility and to reduce functional disability.

**42 patients entre 20 et 55 ans avec une sciatalgie subaiguë suite à une protrusion discale**

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**Kranthi Pallipamula - 2012**

Pendant 6 jours physiothérapie classique :  
 3 fois traction - 6 fois TENS, avec  
 5 séries - 15 neuroglissements alternés lentes - sans reproduction D/Sy

Outcome Measure	Pre	Day 6
VAS	7,01	3,39
SBI	13,53	2,37
PSLR	45,21	72,32
Active Lumbar Flexion	4,8 ± 3,35	39,13
Functional Disability	30,13	30,13

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**Craig Liebenson - 2012**

*Journal of Bodywork & Movement Therapies (2012) 16, 209–221*  
*Available online at: www.sciencedirect.com*  
*SciVerse ScienceDirect*  
*journal homepage: www.elsevier.com/htmt*

**PREVENTION & REHABILITATION — SELF-MANAGEMENT: PATIENT SECTION**

**What can I do for sciatica?\***

**Craig Liebenson, D.C.,<sup>a</sup>**

<sup>a</sup> LA Spine & Sport, 10474 Santa Monica Blvd, #204, Los Angeles 90065, United States

<http://dx.doi.org/10.1016/j.jbmt.2012.03.004>  
[www.elsevier.com/htmt](http://www.elsevier.com/htmt)

**Craig Liebenson - 2012**

**Pendant 1 à 2 semaines - 4 fois par jour**  
**12 à 20 répétitions lentes - sans reproduction D/Sy**

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# «Sciatalgues» et la racine nerveuse adhérente

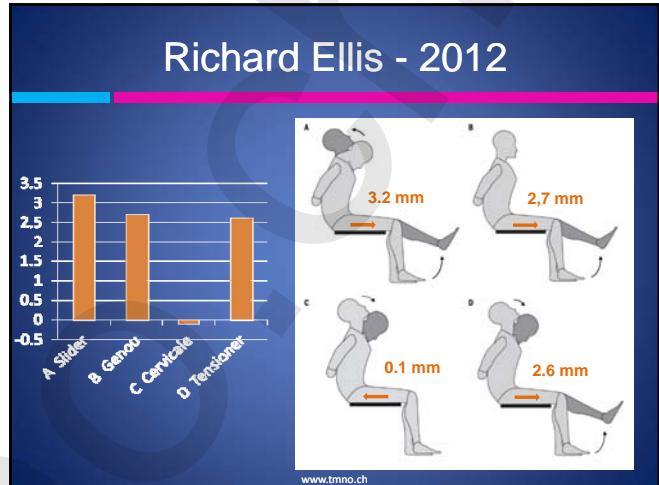
**Richard Ellis - 2012**

[ RESEARCH REPORT ]

RICHARD F. ELLIS, P. LPAU • WAYNE A. HIND, P. T. HOD • PETER J. MCNAUL, P. T. HOD

Comparison of Longitudinal Sciatic Nerve Movement With Different Mobilization Exercises: An In Vivo Study Utilizing Ultrasound Imaging

JOURNAL OF SPINAL DISORDERS & SPORTS PHYSICAL THERAPY | VOLUME 42 | NUMBER 5 | AUGUST 2012  
www.tmnno.ch



**Haris Colavic - 2013**

Journal of Health Sciences

RESEARCH ARTICLE Open Access

Effects of neural mobilization on pain, straight leg raise test and disability in patients with radicular low back pain

Haris Colavici<sup>a</sup>, Djordje Kadić<sup>b</sup>

Results of Hecht Studies, University of Sarajevo, Bosnia and Herzegovina

ABSTRACT

Introduction: Radicular low back pain is a disorder involving the dysfunction of the lumbosacral nerve roots. Clinical rehabilitation approaches for low back pain include manual therapy, and physical therapy procedures, like rest, heat, ultrasound, TENS, but evidences regarding their effectiveness are lacking. The purpose of this study was to determine if nerve mobilization brings better improvements in pain, SLR test and functional disability in patients with radicular low back pain compared to standard physical therapy.

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**Haris Colavic - 2013**

	Groupe A 30 patients entre 32 et 60 ans avec syndrome lomboradicalaire	Groupe B 30 patients entre 32 et 60 ans avec syndrome lomboradicalaire
Mesures avant	EVA et SLR	EVA et SLR
4 semaines - 3 fois/semaine	Neuroglissements en DLat 3 x 10 répétitions d'extension de genou, de flexion de hanche et de flexion dorsale de cheville ? Stabilisation lombale	Exercices actives Stabilisation lombale
Mesures après	EVA mieux SLR s'améliore de 45°	EVA mieux SLR s'améliore de 30°

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**AFMcK - Lyon 2014**

Comment expliquer les résultats ?

- influence mécanique neurofascias
- aspect neurovasculaire avec oxygénéation du nerf périphérique
- input* périphérique avec *output* neurocentral
- réorganisation corticale
- ...

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