



**PHYSIOTHERAPY IN
COMMON NECK PAIN AND WHIPLASH**

MAY 2003

Guidelines Department

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- *Association française de lutte anti-rhumatismale;*
- *Association nationale des ambassades de réflexion des cadres de santé en masso-kinésithérapie;*
- *Association nationale des kinésithérapeutes salariés;*
- *Centre de documentation et de recherche en médecine générale;*
- *Collège nationale des généralistes enseignants;*
- *Société française des masseurs kinésithérapeutes du sport;*
- *Société française de médecine générale;*
- *Société française de médecine physique et de réadaptation.*

The work was coordinated by Pierre Trudelle, under the supervision of Dr. Patrice Dosquet, head of the Guidelines Department.

Documentary research was coordinated by Emmanuelle Blondet with the help of Laurence Frigère, under the supervision of Rabia Bazi, head of the documentation department.

Secretarial services were provided by Isabelle Le Puil.

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STEERING COMMITTEE

Françoise Bizouard, physiotherapist, Paris
François Brégeon, physiotherapist, Paris
Jean-Paul Carcy, physiotherapist, Bourg-Madame
Dr. Jean-Jacques Crappier, general practitioner, Le Mans
Dr. Mathieu de Seze, specialist in physical and rehabilitation medicine, Bordeaux

Professor Liana Euller-Ziegler, rheumatologist, Nice
Bernard Jumentier, physiotherapist, Carvin
Dr. Olivier Kandel, general practitioner, Poitiers
Dr. Laurence Lucas-Couturier, general practitioner, Asnières
Dominique Perrein, physiotherapist, Paris

WORKING GROUP

Dr. Luc Martinez, general practitioner, Bois-d'Arcy – working group chairman
François Brégeon, physiotherapist, Paris – report author
Pierre Trudelle, Anaes, Paris - project manager

Gérard Andréotti, general practitioner, La Crau
Jean-Paul Carcy, physiotherapist, Bourg-Madame
Dr. Laure Chapuis, rheumatologist, Vitré
Dr. Patrick Chevallier, general practitioner, Maule
Dr. Fernand de Peretti, orthopaedic surgeon, Nice
Hélène Duval-Lafaurie, physiotherapist, Angers

Christine Gantois, physiotherapist, Marseille
Daniel Mach, physiotherapist, Vence
Éric Pastor, physiotherapist, Montpellier
Patrick Spillman, general practitioner, Mouans-Sartoux
Jacques Vaillant, physiotherapist, Grenoble
Professor Philippe Vautravers, specialist in physical and rehabilitation medicine, Strasbourg

PEER REVIEW GROUP

Françoise Bizouard, physiotherapist, Fontenay-sous-Bois
Luc Bousson, physiotherapist, Vichy
Dr. Yvonnick Clémence, general practitioner, Remiremont
Patrick Colné, physiotherapist, Paris
Dr. Jean-Jacques Crappier, general practitioner, Le Mans
Francis Crépon, physiotherapist, Saint-Maurice
Sophie Daubercies, physiotherapist, Vitry-sur-Seine
Dr. Mathieu de Seze, specialist in physical and rehabilitation medicine, Bordeaux
Dr. Denis de Valmont, ANAES Scientific Council

Jean-Jacques Desmarests, physiotherapist, Armentières
Dr. Jean Doubovetzky, general practitioner, Albi
Professor Bernard Duquesnoy, rheumatologist, Lille
Jean-Louis Estrade, physiotherapist, Issoudun
Professor Liana Euller-Ziegler, rheumatologist, Nice
Dr. Pierre Ferru, general practitioner, Gençay
Dr. Alain Frey, specialist in emergency medicine, Poissy
Françoise Gomez, physiotherapist, Bordeaux
Dr. Jean-Claude Goussard, specialist in physical and rehabilitation medicine, Paris
Dominique Grasser, physiotherapist, Besançon

Dominique Grosse, physiotherapist, Mulhouse
Franck Guais, physiotherapist, Nantes
Agnès Habert, physiotherapist, Valence
Dr. Nicolas Halmagrand, rheumatologist, Paris
Gérard Henrion, physiotherapist, Lamalou-les-Bains
Yann Heymes, physiotherapist, La Seyne-sur-mer
Bernard Jumentier, physiotherapist, Carvin
Dr. Patrick Juvin, specialist in physical and rehabilitation medicine, Paris
Dr. Olivier Kandel, general practitioner, Poitiers
Professor Pierre Kehr, orthopaedic surgeon, Illkirch
Khelaf Kerkour, physiotherapist, Delemont (Switzerland)
Christian Lacomère, physiotherapist, Paris
Dr. Sylvie Lagrue, general practitioner, Panazol
Dr. Jean-Marie Lamoulère, rheumatologist, La Seyne-sur-Mer
Patrick Le Roux, physiotherapist, Saint-Sébastien-sur-Loire
Jean-Jacques Lempereur, physiotherapist, Grenoble

Dominique Leroux, physiotherapist, Saint-Denis
Dr. Laurence Lucas-Couturier, general practitioner, Asnières
Marc Messina, general practitioner, Bidart
Jacques Monet, Anaes Scientific Council
Pascale Novaro-Mach, physiotherapist, Biot
Jacek Olek, physiotherapist, Saint-André-de-Sangonis
Gilles Péninou, physiotherapist, Paris
Dr. Dominique Perrein, general practitioner, Paris
Michel Pocholle, physiotherapist, Montpellier
Dr. Vincent Pointillart, orthopaedic surgeon, Bordeaux
Jean-Yves Prigent, physiotherapist, Saint-Mamert-du-Gard
Professor Christian Roques, specialist in physical and rehabilitation medicine, Toulouse
Dr. Olivier Rouillon, specialist in rehabilitation medicine, Villiers-sur-Marne
Philippe Stévenin, Anaes Scientific Council
Thierry Vassart, physiotherapist, Contrexéville
Sylviane Villard, physiotherapist, Grasse
Philippe Voisin, physiotherapist, Lille-Hellemmes

GUIDELINES

I. INTRODUCTION

The term “neck pain” is used to describe any pain in the region of the neck. Neck pain is described as “common” when the doctor has been unable to identify a specific disorder with a cause, likely outcome, and specific treatment. The term “common neck pain” should not be used to describe symptoms that may be chronic and incapacitating, and which the patient does not regard as trivial. The term “nonspecific” would be more appropriate.

The term “whiplash” is used to describe neck pain caused by a sudden jerk or jolt. In France, a distinction is made between a *‘coup du lapin’*, where there is violent extension of the cervical spine, and *‘fléau cervical’*, which refers to sudden acceleration of the head first forwards and then backwards, causing hyperflexion followed by hyperextension of the cervical spine.

These guidelines cover common neck pain and neck pain following whiplash. They exclude neck pain due to nerve root compression in the upper limbs, for which there is specific treatment. They are intended for all professionals involved in rehabilitation for neck pain.

The guidelines are graded according to the level of scientific evidence of the supporting studies:

- a grade A guideline is based on evidence established by trials of a high level of evidence (e.g. randomised controlled trials (RCTs) of high power and free of major bias, meta-analyses of RCTs, decision analyses based on properly conducted studies);
- a grade B guideline is based on presumption of a scientific foundation derived from studies of an intermediate level of evidence (e.g. RCTs of low power, well-conducted non-randomised controlled trials or cohort studies);
- a grade C guideline is based on studies of a lower level of evidence (e.g. case-control studies or case series).

In the absence of scientific evidence, the guidelines are based on agreement among professionals.

II. PHYSIOTHERAPY ASSESSMENT

The aims of the assessment are to:

- decide on treatment methods according to the diagnosis;
- monitor change in the condition;
- measure the results of treatment.

The physiotherapist should investigate a number of different areas.

- **Pain**

A 100-mm visual analogue scale (VAS) is recommended to measure pain intensity. A chart can help show which areas are painful in order to locate them more precisely. The chart may be completed by either patient or practitioner (agreement among professionals).

- **Posture**

Head position (particularly craning the neck) seems to be involved in the onset of certain types of neck pain. It should be assessed by measuring distances (e.g. chin-sternal notch) or by measuring specific anatomical landmarks (tragus, spinous process of C7, acromion, greater trochanter, anterior knee, lateral malleolus) against a plumb line. A number of studies have shown that these measuring instruments yield reproducible results. However, studies are needed to provide more detail, and possibly to develop new measuring instruments. In some situations (e.g. abnormal spinal curves), radiography can provide further information (agreement among professionals).

- **Palpation**

The reproducibility of palpation in a physiotherapy assessment of neck pain has not yet been validated. It is nevertheless an integral part of the assessment and is recommended (agreement among professionals).

- **Joint mobility**

Neck pain is often accompanied by reduced overall mobility of the cervical spine but may not be the cause of this reduction in mobility. Several studies have shown that mobility decreases with age. It is greater in women than in men.

Cervical spine mobility is usually measured with a tape measure. Reproducibility is good among experienced practitioners. Inclinationometry is less used but is more reliable and needs to be promoted in France. Manual assessment of inter-segment mobility does not provide reproducible results.

- **Neuromuscular activity**

Manual assessment of muscle resistance is a method used to assess functional capacity when the patient's condition allows it. Two endurance tests measuring muscle resistance are recommended:

- (i) a test of the spinal extensor muscles,
- (ii) a test of the flexors.

It is difficult to measure the extensibility of neck muscles, i.e. their capacity to lengthen to their full range. There is no evidence that such an assessment is useful.

- **Proprioception**

Several teams have described the value of assessing head repositioning in patients with neck pain by measuring the movement of a light pointer fixed on the patient's head. The patient is asked to point the light pointer at a target placed in front of them, then to rotate their head, with their eyes shut, and return to the starting position. The test measures the difference between the positioning of the light pointer on the target at the start of measurement and its position after the neck has been rotated. This test is recommended because it is reproducible and can be used to monitor the patient's condition.

- **Functional effect and effect on working life**

The functional effects of neck pain (disability) and its impact on the patient's working and social life should be part of the assessment (disability assessed by length of time off work, scales measuring the effect on daily living activities, etc.). Pain/function scales such as the Neck Pain and Disability Scale (NPDS) scale may be used to assess the impact of pain on functional activity (agreement among professionals).

- **Global assessment and summary report**

As per regulations, a report summarising treatment results is sent to the referring doctor. A suitable format is given on the next page.

III. TREATMENT TECHNIQUES

Few physiotherapy techniques have been validated as such. Published research protocols generally involve combinations of treatments, which makes it difficult to interpret results.

- **Rest or immobilisation**

Immobilisation or resting of the neck region should not last long (2-3 days) and should only be prescribed during episodes of acute neck pain. Neck collars provide poor immobilisation of the spine (grade C). In general, physiotherapy treatment for common neck pain should comprise pain relief, treatment of joints and muscles, neuromuscular reprogramming and techniques that help the patient readjust to their normal life (grade B). How these techniques are combined will depend on the results of the physiotherapy diagnosis.

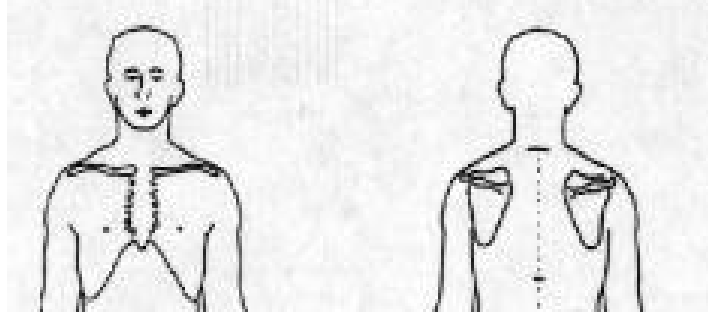
- **Physical methods for pain relief and reduction of inflammation**

- *Electrotherapy, ultrasound and infrared:* The efficacy of none of these three physical treatment methods for pain relief and reduction of inflammation has been assessed in isolation in properly designed studies. All available studies have assessed efficacy in combination with other forms of physiotherapy. The combinations seem to have a beneficial action (grade C).
- *Laser therapy:* The results of controlled studies evaluating the efficacy of laser therapy on neck pain are contradictory. At present there is no evidence to recommend laser therapy (agreement among professionals).
- *Electromagnetic therapy and magnets:* There is no evidence to show that these forms of treatment are effective. They are not recommended (agreement among professionals).

- **Traction**

There is no evidence to show that vertebral traction is effective (when performed according to a formal protocol). It could be beneficial in the short-term (agreement among professionals).

Proposed format of summary sent to the referring doctor.

Date: Surname: First name: Date of birth: Physiotherapist: Referring doctor:				
		Date started	Date	Date completed
Pain	VAS (mm)			
Posture	Comments on posture			
	Chin-sternal notch distance at rest (cm)			
Joint mobility	Chin-sternal notch distance in F/E (cm)			
	Chin-acromion distance RR/LR (cm)			
	Tragus-acromion distance RLF/LLF (cm)			
Muscle endurance	Time: extensor muscles (sec)			
	Time: flexor muscles (sec)			
Proprioception	Distance compared with central target (cm)			
Main functional problems and/or effect on working life				
NPDS scale				
General comments:				

F: flexion; E: extension; RR: right rotation; LR: left rotation; RLF: right lateral flexion; LLF: left lateral flexion

- **Hydrotherapy**

No specific articles relating to neck pain were found.

- **Massage**

There is a strong consensus supporting the use of manual massage, in spite of the absence of studies demonstrating its efficacy. Its use is justified by its known absence of risk, its widespread use by physiotherapists, and recognition by patients of its benefits. It should not be the main component of physiotherapy, but should be used as an adjuvant therapy (agreement among professionals).

- **Techniques to increase mobility**

Active or passive mobilisation techniques or the contract-relax technique help to improve range of motion in joints in the neck region. These techniques are recommended (grade B).

- **Manipulation**

Manipulation of the cervical vertebral joint is very widely used. Specific training is required. A number of well-designed and conducted controlled clinical trials have concluded that manipulation is effective in the short-term, but usually as part of a combination of different forms of treatment (grade B).

The risk of side effects associated with manipulation is low, but the possible side effects are potentially serious. History-taking, methodical clinical examination, and compliance with the contraindications proposed by the profession are essential preconditions before manipulation. The patient should be informed of the possible risks. Manipulation should be performed in accordance with the regulations governing its use by professionals.

- **Proprioceptive techniques focusing on eyes and neck**

Head repositioning techniques are recommended for all types of patients with neck pain (grade B). These techniques are proposed in addition to techniques to improve mobility.

- **Active exercise**

Active exercises are recommended in the treatment of chronic and acute neck pain (grade B). Unlike chronic low back pain, chronic neck pain does not seem to respond any better to intensive active exercise than to simple active techniques.

IV. TREATMENT STRATEGY FOR COMMON NECK PAIN

Treatment involves three stages:

(i) In the short term: alleviating pain

The aim is to relieve pain by working on inflammatory reactions and muscle spasm in order to restore good spinal mobility and good trophicity of the soft tissues of the neck.

(ii) *In the medium term: working on perception*

The patient explores analytically the various systems governing mobility in the neck region. They discover or rediscover the links between vision and the cervical spine, and explore the functional relationship between the neck and shoulder muscles. The aim is to reeducate the habitual movement pattern to a level that can be maintained by exercise at home. When the patient has achieved satisfactory results (decreased pain, improved range of motion, strength and functional movement), the therapist should arrange long-term follow-up.

(iii) *In the long term: maintaining results*

Treatment to develop habitual movement pattern should be adjusted to:

- the results obtained. The therapist may propose exercises to develop proprioception (morning exercises to maintain spine mobility and work on awareness of muscles and movement) and to maintain muscle strength. Intervals between sessions are increased and sessions are used to check that the patient has achieved certain goals, i.e. good posture, good recovery of strength and good soft tissue trophicity.
- to the patient's needs. Treatment should take account of the patient's age, sex, work, and sports activity (agreement among professionals).

V. TREATMENT STRATEGY FOR WHIPLASH

Several controlled trials have shown that active mobilisation techniques are beneficial in the short-term, provided they are used at an early stage (grade B). There have been no reports of any serious side effects. However, because of the possible delay in diagnosing serious lesions following these types of trauma, practitioners should be methodical and thorough in their examination, so that they can eliminate any contraindications to early treatment by active mobilisation (agreement among professionals). If the condition persists, the patient should be sent back to their doctor for reassessment, and in particular for imaging studies (agreement among professionals).

VI. LOOKING AHEAD

The working group

- noted the absence of properly designed trials to evaluate physiotherapy treatment, particularly in France, and emphasised the need for further research in this area,
- recommended that the use of validated tools to assess spine mobility be promoted,
- stressed the need for properly designed research on the role of patient education in preventing recurrence and/or maintaining results.