
Diagnostic therapeutic flow-charts for low back pain patients: the Italian clinical guidelines

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In 2002 the Italian Health Ministry (IHM) financed the Care and Research Institute (IRCCS) Fondazione Don Carlo Gnocchi ONLUS of Milan to carry out a research project entitled: "Percorsi diagnostico-terapeutici evidence-based per le patologie del rachide lombare" (Evidence-based diagnostic therapeutic flow-charts (DTF) for lumbar spine pathologies).¹ The first Operative Unit of this project was assigned the task of creating a National Committee which would include all Scientific Societies representing a medical speciality and/or health profession facing problems of the lumbar spine (Appendix).¹ This Committee prepared Italian DTFs, the purpose of which was to act as a single scientific and cultural benchmark for every local initiative of development of DTF, as advised by the IHM.² The DTF, that were produced in a strictly evidence-based way, have been considered by the IHM a subsequent step, more concrete and operative (almost clinical-care profiles) with respect to the classic Guidelines.

In recent years, the guidelines have become an essential means for synthesizing results proposed in the scientific literature and making them fully available to physicians.³⁻⁷ Presently, there are numerous examples of guidelines in the field of low back pain (LBP)⁴⁻¹¹ and experience gained allows us to affirm, on one

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side, their importance, but, on the other, the difficulties that arise when we decide to make them operative; these difficulties may reflect an essentially "laboratory" reality, often propose indications that are more negative than positive (what to do) and are a group of indications that do not provide an exhaus-

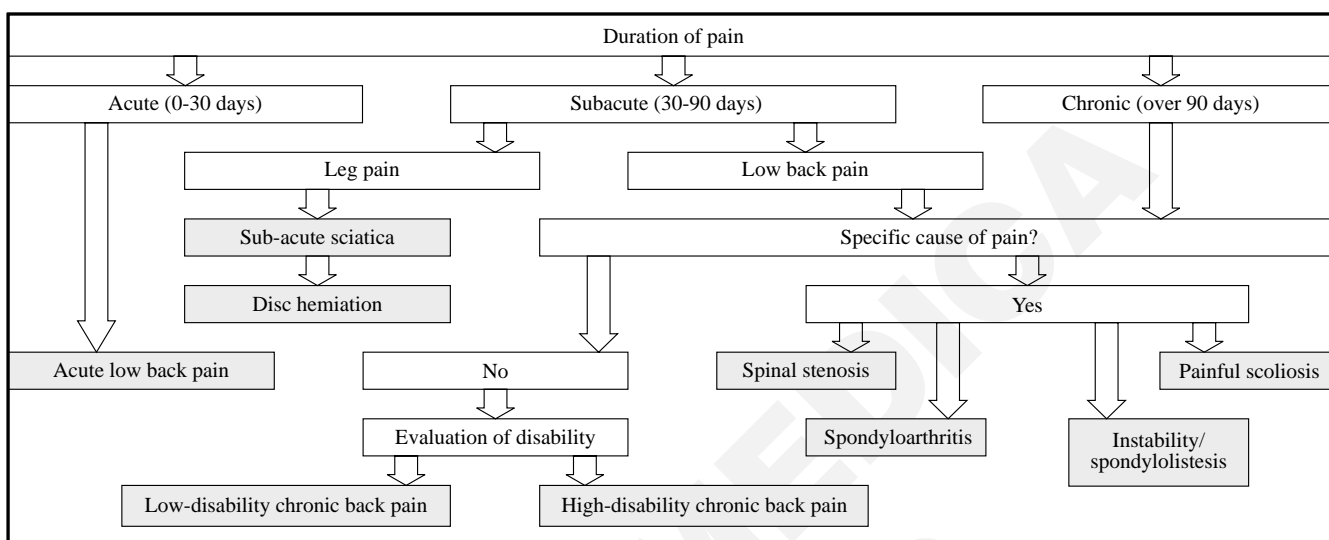


Figure 1.—Synopsis of diagnostic flow-charts proposed in the Italian clinical guidelines for low back pain patients.

tive and coherent picture of what a physician should do.^{1, 12-17}

Flow-charts, already used in some previous examples of clinical guidelines for LBP,^{10, 18} can be seen as an operative resource that enables us to introduce guideline indications into everyday practice: the main difference is that the latter are usually proposed for each single diagnostic and therapeutic instrument, while the former are organic pathways, real profiles of assistance. DTFs are deep flow-charts that synthesize the reported data on LBP while giving an organic picture with respect to “how to behave”, thus completing the numerous existing grey areas. DTFs in the field of LBP are almost non-existent at international level, one reason being that “they have to be consistent with local health care reality”.^{2, 19} In this respect, these DTFs, shared by all Italian Scientific Societies of national relevance, will be the base on which to develop subsequent local experiences of the National Health Service.

Why do we need diagnostic therapeutic flow-charts for low back pain

LBP is a common osteoarticular disease, representing, after the common cold, the most frequent human disease.^{19, 20} Almost 80% of the population will, at some time in their lives, suffer from LBP.²¹⁻²³

Observational studies report an annual prevalence of symptoms in 50% of adults of working age, 15-20% of whom resort to medical care.^{19, 21-23} After this premise it's evident that LBP can be one of the most frequent reasons for general practitioner (GP) examinations, since the latter is usually the first physician to start the care pathway of LBP patients.^{1, 13, 24} In fact, in Italy LBP represents 3.5% of admissions to General Medicine Services (the third cause after hypertension and preventive care), almost 20% of all osteoarticular causes.²⁵ These data explain why every day a GP gives assistance to an average 2-3 patients with LBP.²⁵⁻²⁷

LBP affects both men and women equally; it occurs most frequently between 30 and 50 years of age; it implies extremely high individual and social costs, in terms of diagnostic tools and treatments, reduction of productivity and decreased ability in everyday life activities; considering only young people under 45 years of age, LBP is the most common cause of disability.^{10, 19, 21, 22, 28, 29} Despite the fact that the post-industrial economy is becoming less demanding for workers thanks to a better automatization of the production cycle and medicine has increased significantly diagnostic and care capability, working disability due to LBP is rising constantly.¹⁹

Diagnostic imaging techniques should follow clinical examination, but frequently this does not happen: their use without the backing of a diagnostic hypothesis can't add any useful data with respect to

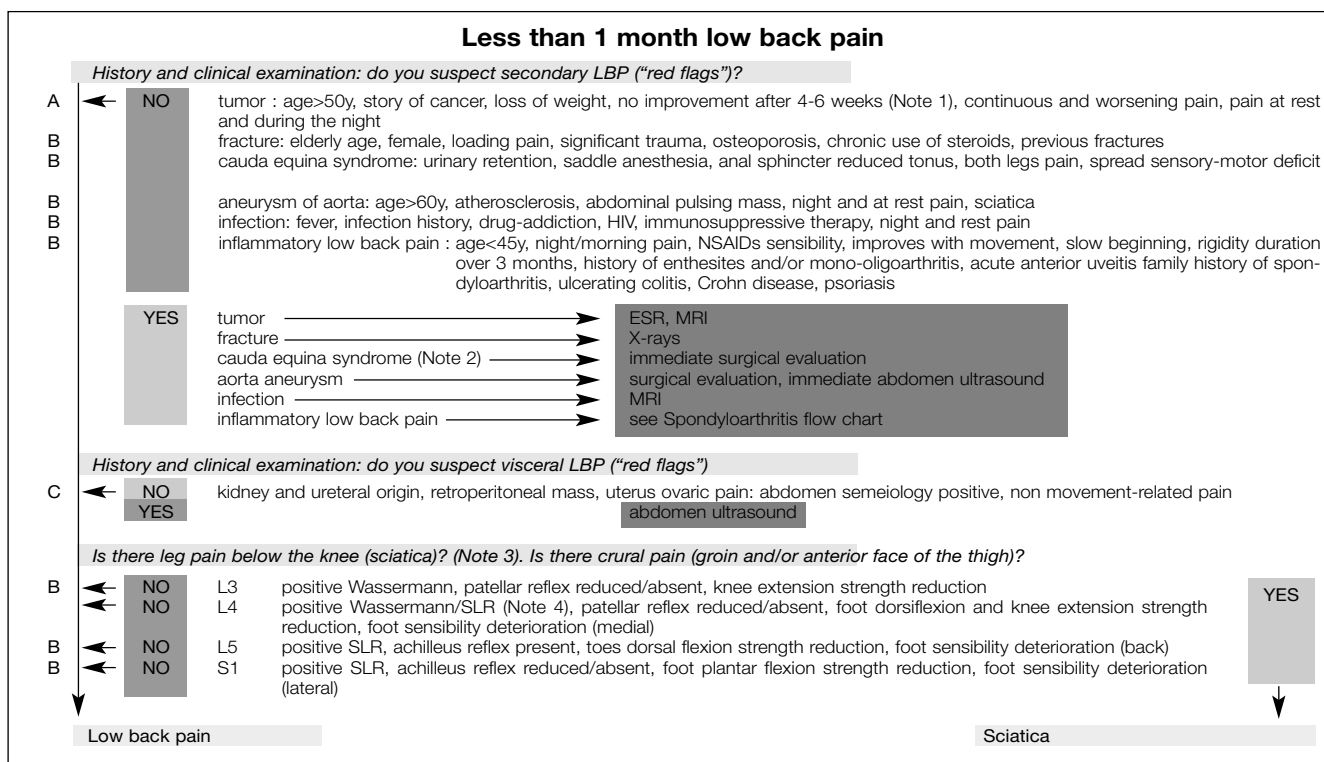


Figure 2.—Diagnostic flow-chart of acute low back pain patients. Notes 1-4 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart.

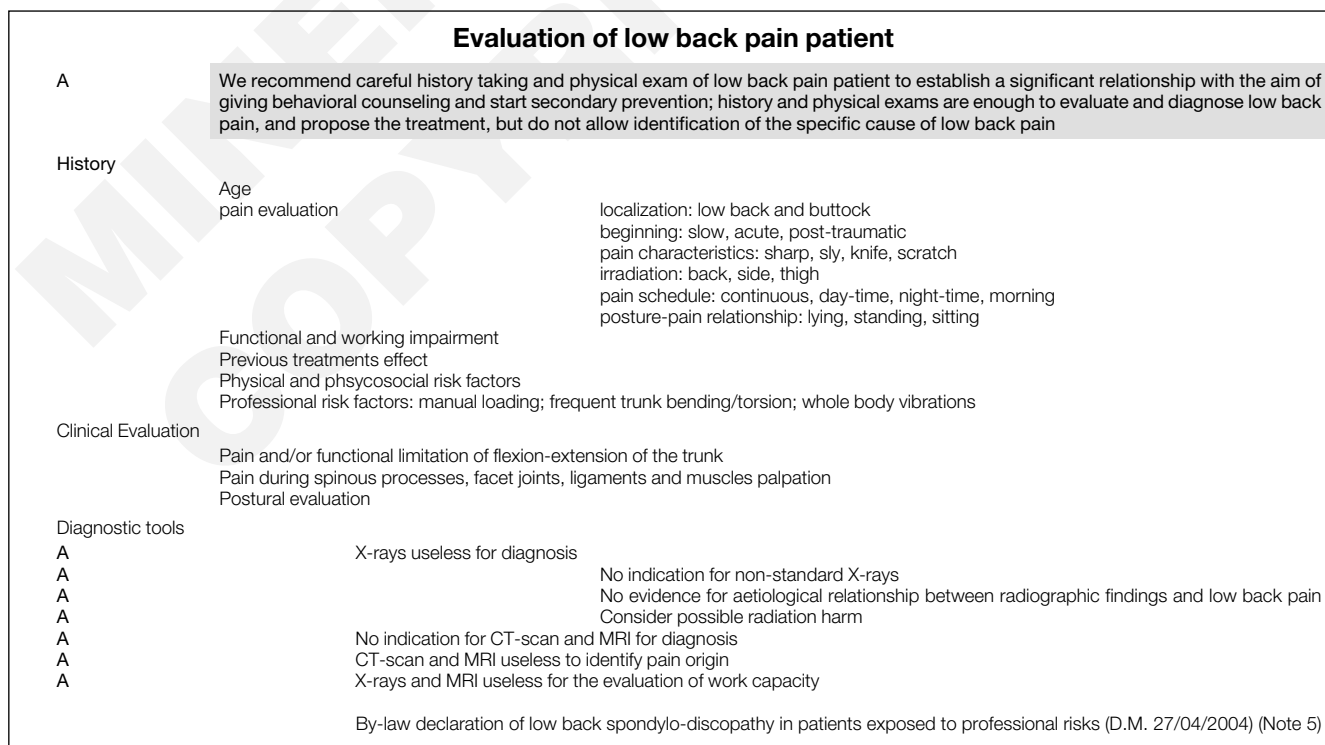


Figure 3.—Evaluation of acute low back pain patients. Note 5 can be found in Appendix II. The letters on the left represent the strength of evidence for each recommendation.

Evaluation of sciatica patient	
A	Neurological exam is recommended
<i>Neurological examination</i>	
A	congruence of signs and symptoms increases sensibility and specificity of neurological exam
A	straight leg raising (SLR) test has high sensibility but low specificity for disc herniation, while crossed SLR has high specificity but low sensibility
A	pain distribution has good sensibility for disc herniation
A	in elderly SLR test can be normal even if there is radicular damage
A	steppage due to complete motor L4 L5 damage requires immediate surgical evaluation
A	atypical persistent leg pain with/without negative SLR, or new/progressive motor deficit require neurological specialistic evaluation
<i>Diagnostic tools</i>	
A	in first 4 weeks electromyographic exam sensibility to predict radicular damage is very low
A	neurophysiological expert evaluation is useful when aetiological or level diagnosis are uncertain, or prognostic information is required, or to monitor/document objectively functional deficit
A	in first 4-6 weeks, CT-scan and MRI are not recommended if there is no highly-painful sciatica or progressive motor deficit
A	after 4-6 weeks, CT-scan and MRI are recommended if surgery is considered because of neurological symptoms and signs
A	MRI is first choice imaging for disc herniation, alternatively CT-scan can be considered
<p>results of diagnostic exams must be correlated to clinical data clinical results and diagnostic exams must be explained to the patient imaging result of disc herniation is pathologically significant only if clinical exam results are congruent with imaging Disc herniation by-law certification is mandatory in patients at professional risk (Note 5): see disc herniation flow-chart (Figure 14)</p>	

Figure 4.—Evaluation of acute sciatica patients. Note 5 can be found in Appendix 2. The letters on the left represent the strength of evidence for each recommendation.

Treatment of low back pain patient	
A	Main aim of treatment is to take care of low back pain patients without medicalization
<i>Physical activity and behavioral counseling</i>	
A	give the patient informations and reassure about the possible cause of his low back pain, hypothetical provoking factors, eventual risk factors connected to work and/or hobbies, and structural or postural alterations
A	stress the good prognosis due to the nature of pathology, but also the possibility of recurrence,
A	recurrence does not suggest worsening, has equally good prognosis, with very low possibility of chronicization
A	recommend to keep active lifestyle and, if possible, stay at work
A	discourage bed rest
A	explain that there aren't any specific exercises for acute low back pain
<i>Pharmacological therapies (Note 6)</i>	
A	non steroid anti-inflammatory drugs (NSAIDs) are effective pain-killer therapy, even if serious side effects are possible, especially in elderly
A	different NSAIDs do not have different effectiveness
A	paracetamol is effective and has fewer side effects than NSAIDs: it has to be considered first choice drug; do not exceed 3 grams per day
A	central action muscle relaxants are not to be considered first choice drugs: addiction, fall risk and drowsiness
C	muscle relaxants don't give additional effect to NSAIDs
C	steroids are not recommended
<i>Physical therapies</i>	
A	tractions and lumbar supports are not useful
A	TENS and physical therapy (massage, ultrasound, thermotherapy) are not useful
A	acupuncture is not effective
A	back school has low efficacy
A	after 2-3 and before 6 weeks of pain manipulation can be proposed in patients not improving
B	manipulation should be prescribed by physicians excluding risk factors, and proposed by well trained manipulators
<i>Surgical therapy</i>	
A	Low back pain patients, with no signs of radiculopathy or specific causes, don't need surgical evaluation

Figure 5.—Treatment of acute low back pain patients. Note 6 can be found in Appendix II. The letters on the left represent the strength of evidence for each recommendation.

Treatment of sciatica patient	
A	Most patients with radicular dysfunction due to a disc herniation fully recover naturally within 1 month, so a surgical evaluation during the first month of therapy isn't recommended
<i>Physical activity and behavioral counseling</i>	
A	it's better not to rest in bed, except 2-4 days in case of major sciatica
A	continue usual everyday life activities, within limits due to pain, and keep on being active
A	recommend to keep on being active and, if possible, to go back to work, even if back pain/sciatica persist, if duties can be modified and/or lightened: this allows fast recovery from symptoms and reduction of relapses
<i>Pharmacological therapies</i>	
C	systemic steroids can be useful for a short period
A	paracetamol, NSAIDs, muscle relaxants, tramadol are useful to reduce pain (see low back pain)
A	paracetamol with light opioid can be an effective alternative when NSAIDs or paracetamol alone do not control pain
B	if there are no results with pharmacological treatment, epidural steroids can reduce radicular pain for a short period
<i>Physical therapies</i>	
A	manipulations are contraindicated
A	TENS and physical therapy (massage, ultrasound, thermotherapy) are not useful
A	acupuncture is not effective
<i>Surgical therapy</i>	
A	after 1 month of conservative treatment surgeon referral is indicated if: sciatica is important and disabling; sciatica continues without improvement or worsening; there is clinical evidence of a radicular compression
A	before 1 month of conservative treatment surgeon referral is recommended (see disc herniation flow-chart) only: in case of neurological worsening; if pain is important and resists any conservative treatment; in case of red flags
A	in patient with disc herniation and radiculopathy, discectomy is effective if there is no improvement with conservative treatment
B	the choice between microdiscectomy and discectomy depends on surgeon's experience and available resources
A	percutaneous discectomy and laser discectomy must still be considered experimental
C	there is no evidence that patients operated on for disc herniation must reduce their everyday activity immediately after surgery
	intensive exercise programs, beginning 4 to 6 weeks after surgery, accelerate functional recovery and return to work currently we don't know if exercises can be started immediately after surgery
B	there's no reason for prolonged reduction of physical activities after surgery
B	always perform a psychological evaluation before surgery

Figure 6.—Treatment of acute sciatica patients. The letters on the left represent the strength of evidence for each recommendation.

history and clinical exam, but increases the risk of treating lesions occasionally found (*e.g.* asymptomatic disc protrusion, or even herniation, not involved in the present clinical picture).^{1, 13, 30} The call for examination by the patient, who frequently asks the physician to undergo an X-ray, or an even more complex diagnostic imaging examination and, if gratified, shows more satisfaction for the assistance received, should not be underestimated:³¹ one of the gambles of primary care is to increase the patient's satisfaction without prescribing useless exams. As for the therapeutic approach, the wide variability in assistance and the extremely high prescription of physical therapies and exercises,¹ that results in high costs for both individuals and society, despite the lack of reported evidence on their effectiveness for many of them is evident.^{32, 33}

In the clinical pathways of patients with LBP, the first consultation is usually with the GP, who should possess some expertise for a first global evaluation (preventive, diagnostic, therapeutic and prognostic) as

well as the means for an evidence-based critical analysis. This is the basis on which to manage the patient's needs, frequently induced by trends and ideas^{34, 35} and, when necessary, to send the appropriate patients for specialist advice.

Production methodology

The members of the multidisciplinary team that prepared this document were chosen by each single Scientific Society participating in the project (Appendix). The Italian Society of Medical Radiology (Società Italiana di Radiologia Medica, SIRM), the Italian Society of Emergency Medicine and Urgency (Società Italiana di Medicina d'emergenza-Urgenza, SIMEU) and the Italian Society of Medical Psychology (Società Italiana di Psicoterapia Medica, SIPM), although invited to participate in the work, did not send delegates. In a preliminary meeting, in March 2003, work methods were defined as well as the clinical patterns of the different DTFs.

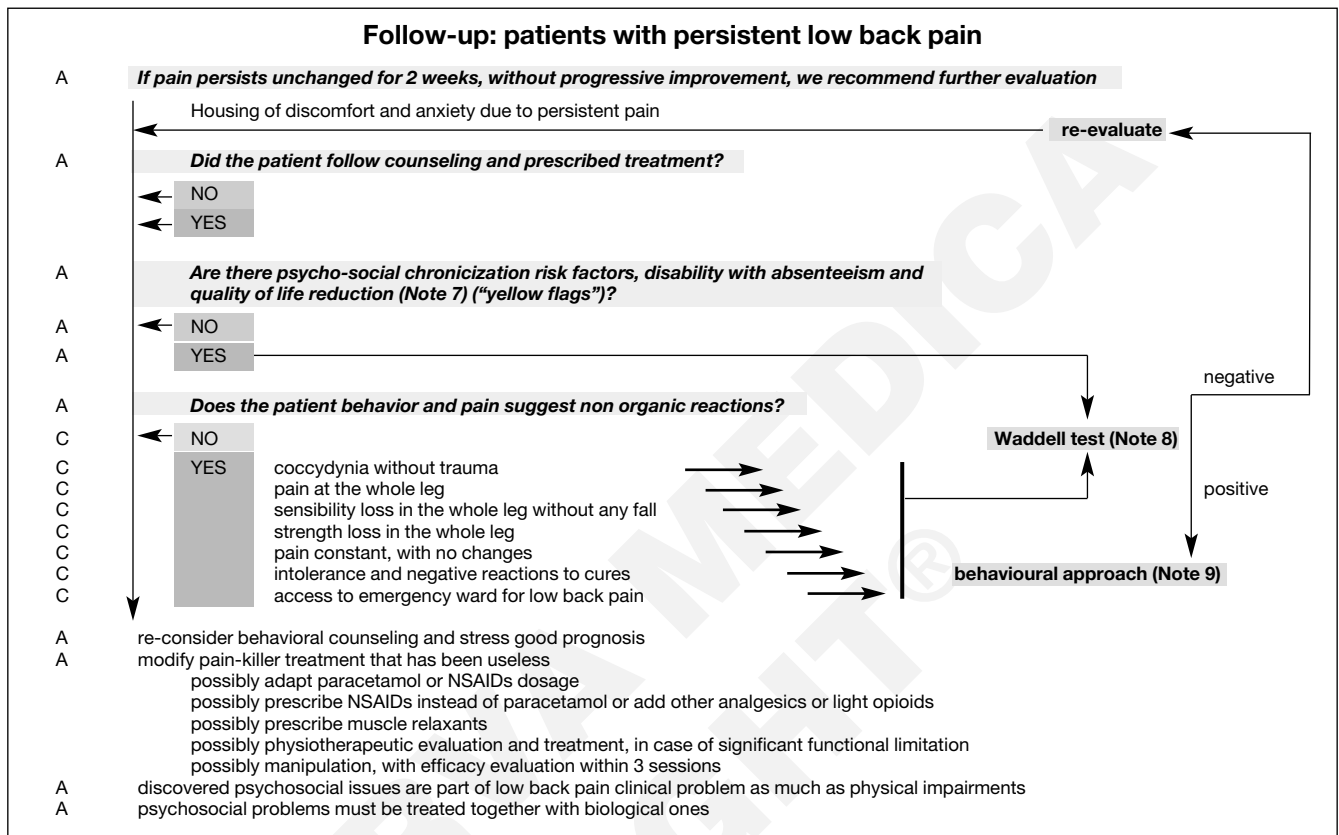


Figure 7.— Diagnostic-therapeutic flow-chart of follow-up of persistent acute low back pain patients. Notes 7-9 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart.

An epidemiologist (S.M.) performed bibliographic research, an evaluation of methodological quality and a synthesis of data on tables that were sent to the members of the team. Each member of the multidisciplinary group proposed for each pattern defined the most appropriate DTF according to the effectiveness of the data collected from the literature and his own competence and clinical experience. These DTFs had to be consistent with the indication of suitability given by the Scientific Committees of the Society represented by the specialist. The project heads (S.N. and S.G.) and the epidemiologist (S.M.) collected all suggestions and proposed a preliminary version of the DTF. In 2 plenary meetings, the raw version of the DTF was discussed by all team members to create the final version of DTF. The final DTF fell in with the indications of the Conference on Guideline standardisation³⁶ to

improve guideline quality and facilitate implementation.

Bibliographic research

Among all existing international Guidelines, the best for methodological quality according to the database of the Italian National Program for Guidelines (Piano Nazionale Linee Guida, PNLG)⁶ were used. Effectiveness of treatments was verified using a synthesis described by van Tulder.^{32, 33} Moreover we considered the systematic reviews (SRs) of diagnosis and treatment published from January 1994 to December 2004 in Medline and in the Cochrane Library databases not included in the above mentioned publications.³⁷⁻⁴⁸ SRs underwent a critical methodological quality evaluation by the epidemiologist of the team (S.M.).⁴⁹⁻⁵¹

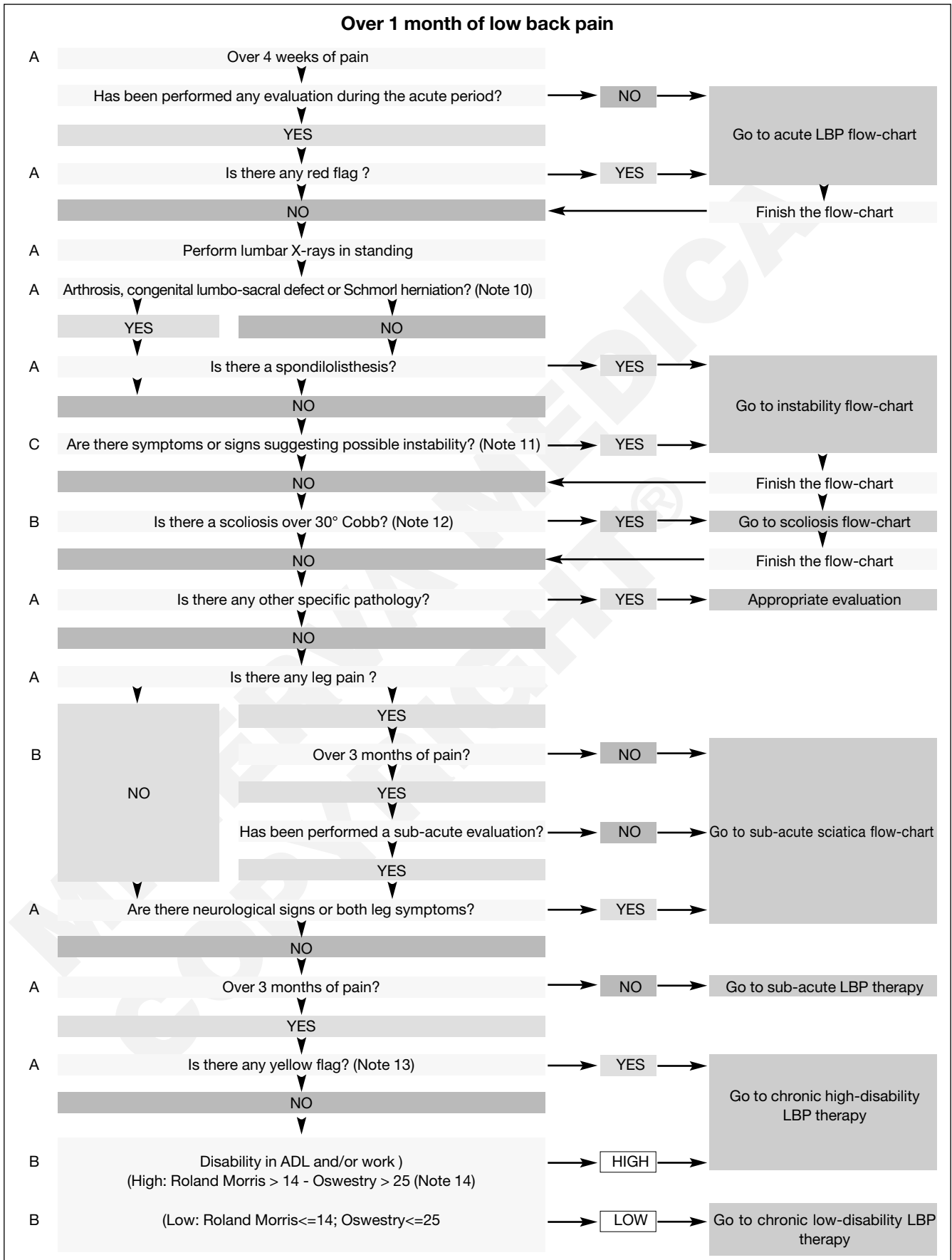


Figure 8.—Diagnostic flow-chart of sub-acute and chronic low back pain patients. Notes 10-14 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart.

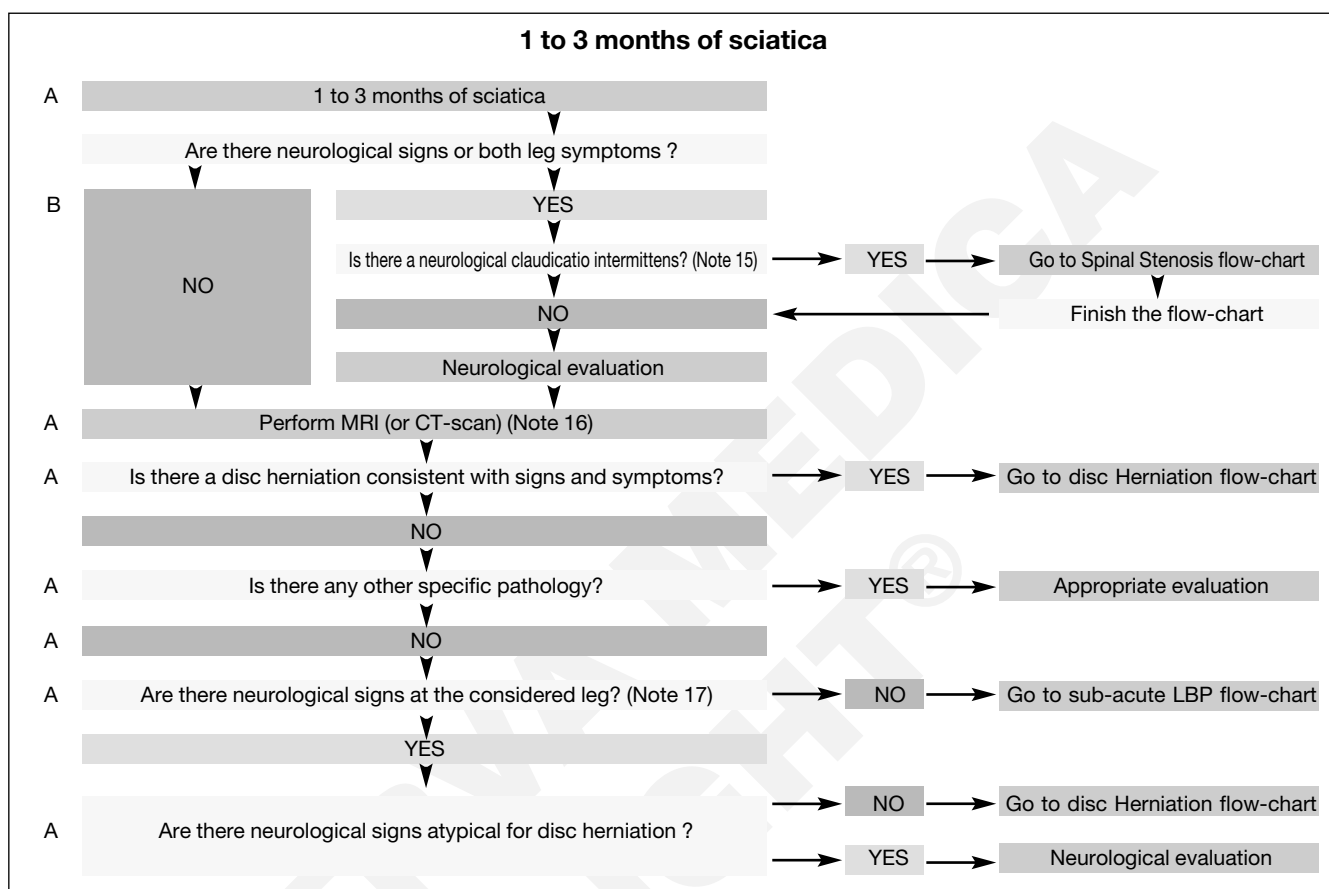


Figure 9.—Diagnostic flow-chart of sub-acute sciatica patients. Notes 15-17 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart.

Addressee of diagnostic therapeutic flow-charts

DTFs address all health operators, working in primary and secondary level care, that can be involved in the assistance and treatment of LBP patients. Particularly, they address the following professionals:

- GPs;
- Radiologists and neuroradiologists;
- Psychiatrists;
- Rheumatologists;
- Neurologists;
- Orthopedic surgeons;
- Neurosurgeons;
- Physiotherapists;
- Work medicine physicians.

Evidence grading and strength of recommendations

Evidence grading

- I. Evidence from many randomised controlled trials (RCTs) and or from SRs of RCT.
- II. Evidence from only one RCT.
- III. Evidence from nonrandomized cohort studies with concurrent or historical controls or their SRs.
- IV. Evidence from retrospective case/control studies or their SRs.
- V. Evidence from case series.
- VI. Evidence based on expert opinions, consensus conference committees or members of this guidelines team.

A	Patient at high risk of chronicity. Main aim of treatment is early, specific intervention on bio-psycho-social risk factors of chronicity	
A	Symptomatic therapy could be useful, but multidisciplinary psycho-social intervention is necessary to avoid chronicization	
A	Counseling	Recovery can be slow There is no significant pathology Avoid bed rest Not useful further diagnostic exams Learn pain control Learn pain management
B	Work and ADL interventions	Continue/resume gradually Eventually change/reduce work activities Control posture Reduce for a while physical efforts, if necessary Reduce stress
A	Physical activities counseling	Immediately low impact aerobic physical activity Start gradually preferred physical activity Practice regularly at least twice a week
B	Pain-killer therapy (Notes 18-21)	Paracetamol with or without opioids NSAIDs Muscle relaxants Manual therapy Physical therapy Pain-killer exercises
B	Expert multidisciplinary team intervention (Notes 21, 22)	Complete diagnostic re-evaluation Pain-killer therapies Individual cognitive-behavioral therapy Back School in group (education + exercises) Individual specific exercises Multidisciplinary treatment with workplace inspection

Figure 10.—Treatment of sub-acute low back pain patients. Notes 18-22 can be found in Appendix II. The letters on the left represent the strength of evidence for each recommendation.

Strength of recommendations

— A: strong recommendation for all patients. This is applied to recommendations based on high quality evidence, group I or II (A), or to recommendations on problems or treatments that it is not possible to study with RCTs (e.g.: some psychological aspects, patient information, ethics) or data of clinical experience and not disputable (A*).

— B: there are doubts as to whether the execution of the procedure should always be recommend-

ed for all patients, but its execution should be carefully considered.

— C: there is a deep uncertainty pro or versus the recommendation. This refers to procedures where there are no conclusions according to the literature because of the absence of RCTs or contrasting results from existing studies.

The adopted grading system does not conform strictly to the levels of evidence, because it also considers other aspects, with the aim of giving a complete evaluation of diagnostic therapeutic procedures and

A	Chronic pain resolution occurs in less than 5% of patients. In case of low-disability, aim of treatment is reducing actual disability and avoiding its progression through instruments to manage the problem (active approach by the patient) and control pain
A	<p>Counseling</p> <p>There is no significant pathology It's difficult to abolish pain completely Pain can be reduced It's possible to improve quality of life and reduce disability Learn pain management Reduce stress Be fit Work is not enemy Physical exercises are important and useful</p>
A	<p>Work and ADL interventions</p> <p>Continue/resume gradually Eventually change/reduce work activities Control posture Reduce stress</p>
A	<p>Physical activities counseling</p> <p>Start gradually preferred physical activity Practice regularly, at least twice a week</p>
A	<p>Expert physician evaluation</p> <p>Complete diagnostic re-evaluation Physical fitness evaluation (biological) (Note 23) Behavioral evaluation (psychological) (Note 24) Disability evaluation (bio-psycho-social) Note 14)</p>
	<p>Expert multidisciplinary team intervention</p> <p>See low- or high-disability chronic low back pain flow-charts</p>
Notes	
B	Chronic low back pain therapy changes according to patient disability level (low or high)
C	<p>In case of low-disability a non-expert approach is possible There is no evidence of efficacy in the literature of a non-expert approach, but it could be preferred in terms of cost/benefit ratio</p> <p>A multidisciplinary approach is complex, nevertheless it's preferable in case of: — High-disability — Low-disability but early chronicization (it's still possible to solve the problem) — Low-disability, no previous trial of this approach and highly motivated patient</p>
C	<p>Multidisciplinary approach is not recommended in case of low-disability and: — complex treatment difficult because of cognitive, psychological or motivational factors — the patient doesn't believe a solution possible</p>
B	<p>There is no evidence of efficacy for these therapies (both positive and negative)</p> <p>Acupuncture Thermal care Facet joint denervation Lumbar supports and orthosis Gabapentin Trigger point and ligamentous injections Facet joint injections Epidural injections Radiofrequency lesioning of the dorsal root ganglion Ozone therapy Spinal cord stimulation Physical therapies IDET (Intradiscal Electrothermal Therapy) Botulinum toxin injections Tramadol</p>
A	<p>There is evidence of non-efficacy for these therapies</p> <p>Bed rest Intra-discal injections Prolotherapy</p>

Figure 11.—Treatment of chronic low back pain patients. Notes 14, 23 and 24 can be found in Appendix II. The letters on the left represent the strength of evidence for each recommendation.

A	Work and ADL interventions (Note 25)	
A	Physical activities counseling (Note 25)	
A	Multidisciplinary rehabilitation (Notes 21, 22)	Back School in group (education + exercises) Individual specific exercises Individual cognitive-behavioral therapy Functional recovery therapy with cognitive-behavioral approach
C	Pain-killer therapy (Notes 18-22, 26)	
A		Paracetamol with or without opioid
A		NSAIDs
A		Antidepressants
A		Muscle relaxants
A		Manipulation / mobilization
A		Massage
B		Pain-killer exercises

Figure 12.—Treatment of low-disability chronic low back pain patients. Notes 18-22, 25 and 26 can be found in Appendix II. The letters on the left represents the strength of evidence for each recommendation.

A	Multidisciplinary rehabilitation (Notes 21, 22)	
A		Functional recovery therapy with cognitive-behavioral approach
A		Individual cognitive-behavioral therapy
B		Specific individual exercises
A		Back School in group (education + exercises)
C	Pain-killer therapy (Notes 18-22, 26)	
A		Paracetamol with or without opioid
A		NSAIDs
A		Antidepressants
B		Muscle relaxants
A		Pain-killer exercises
A		Manipulation / mobilization
		Massage
C	Surgery (Note 27)	
		Spinal fusion
A	Work and ADL interventions (Note 28)	
A	Physical activities counseling (Note 29)	

Figure 13.—Treatment of high-disability chronic low back pain patients. Notes 18-22 and 26-29 can be found in Appendix II. The letters on the left represent the strength of evidence for each recommendation.

reaching recommendations suited to a real clinical context. The elements that were considered to graduate the strength of recommendations include the following:

— Level of evidence;

— Practical applicability of the recommendations (local context in which it has to be applied, available structures, cultural barriers etc.);

— Ethical and psychological considerations;

— Costs.

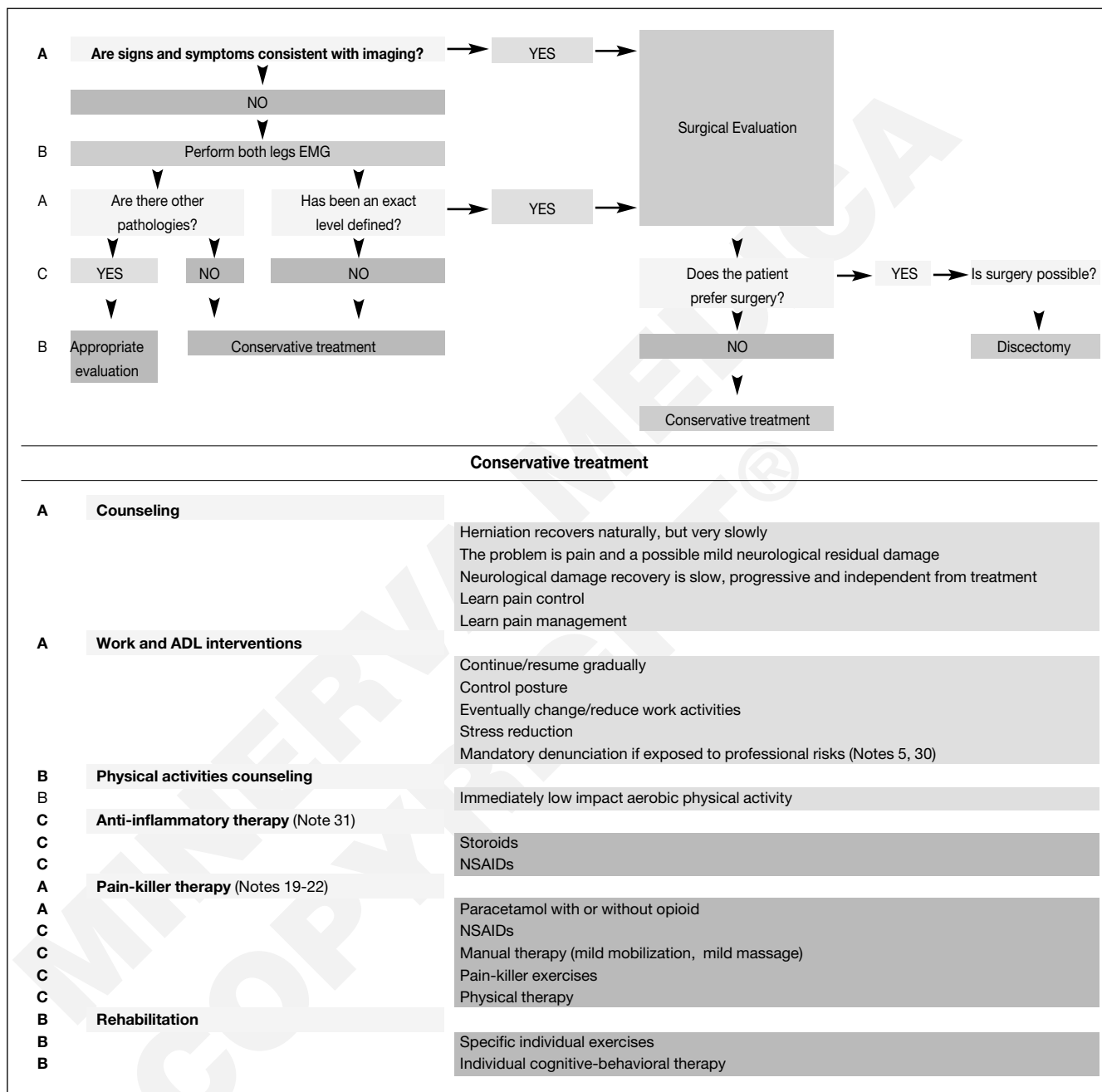


Figure 14.—Diagnostic-therapeutic flow-chart of disc herniation patients. Notes 5, 19-22, 30 and 31 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart and each recommendation.

Document update

The next update of this document is expected by the end of 2008. In any case, this team will monitor sci-

entific writing published by that date and an update of this document will be decided if any important news appears in the literature before that date.

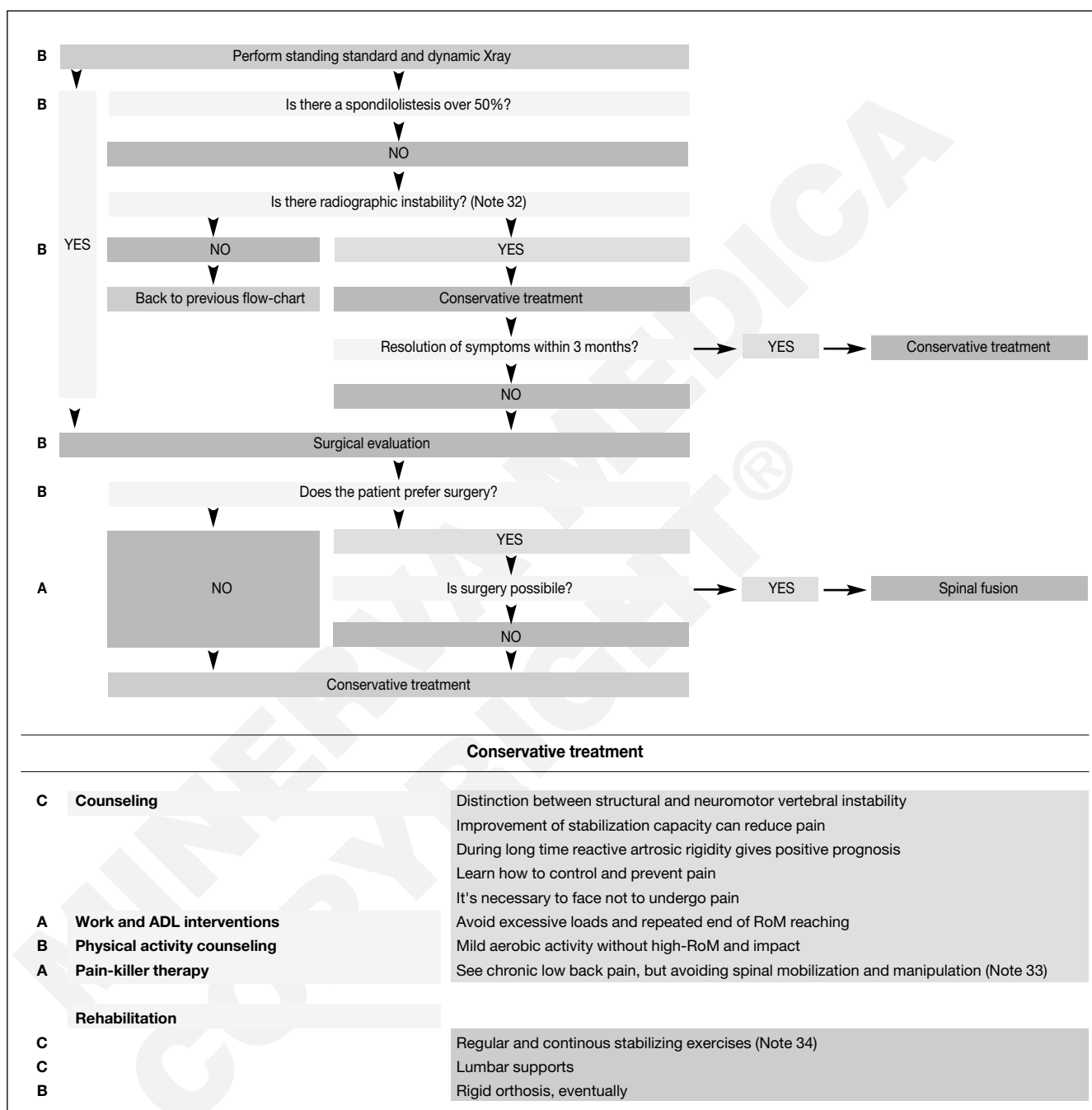


Figure 15.—Diagnostic-therapeutic flow-chart of spinal instability patients. Notes 32-34 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart and each recommendation.

Implementation strategies

Guidelines could hardly translate into effective changes and improvements of assistance levels with-

out active strategies of implementation: their passive circulation, even if it is a preliminary step, is not useful for promoting changes in health workers behav-

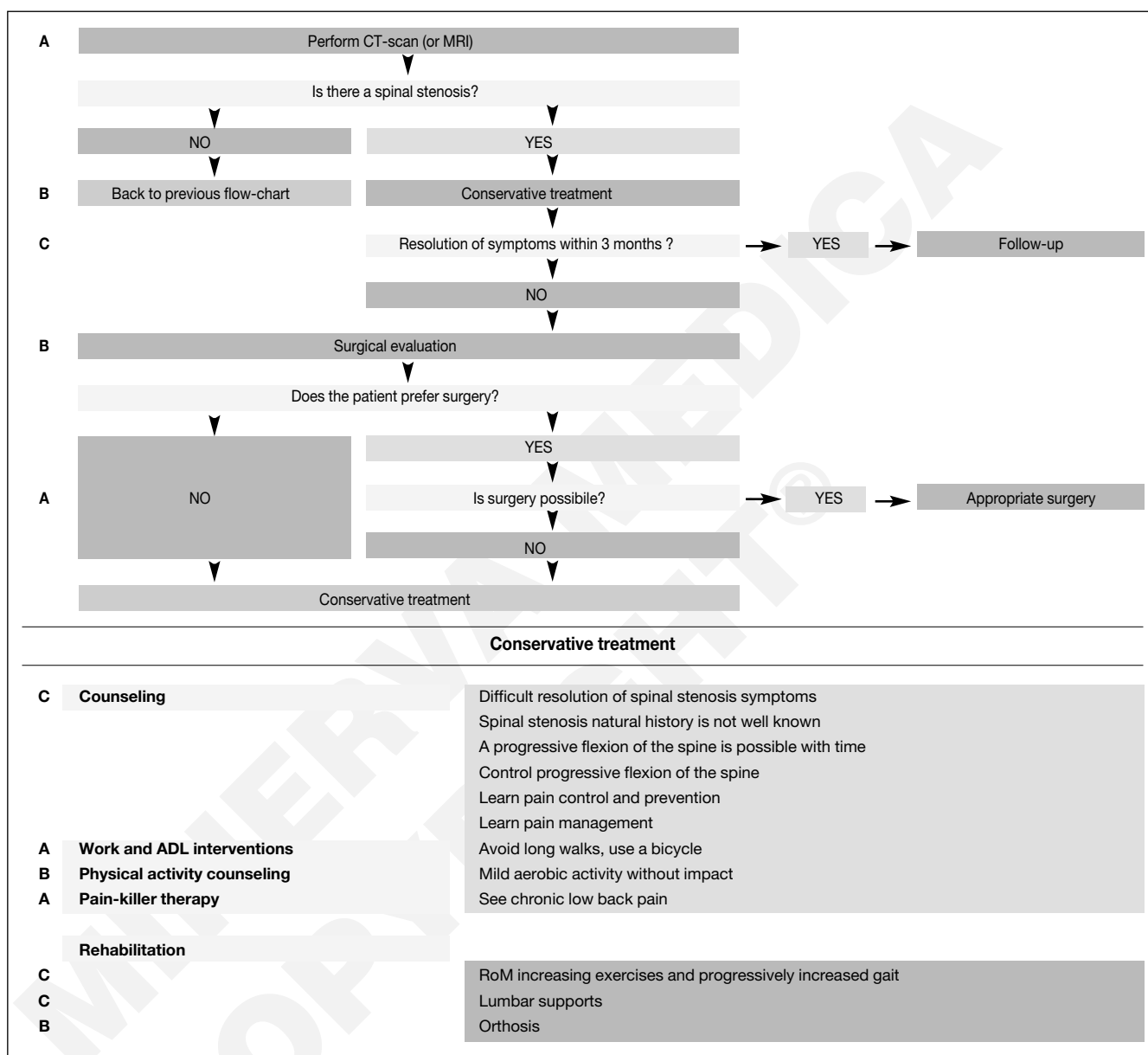


Figure 16.—Diagnostic-therapeutic flow-chart of spinal stenosis patients. The letters on the left represent the strength of evidence for each line of the flow-chart and each recommendation.

our.^{1, 12-17} The circulation strategies for this document will be:

- publication of a synthetic version of the DTF in the Scientific Societies journal involved;
- publication of a complete version of the DTF on

internet sites of the Scientific Societies involved;
 — presentation of the DTF on the occasion of the national meeting of the Scientific Societies involved.
 Moreover, it will be the different Scientific Societies job to implement specific strategies at a local (e.g.: regional) level, like:

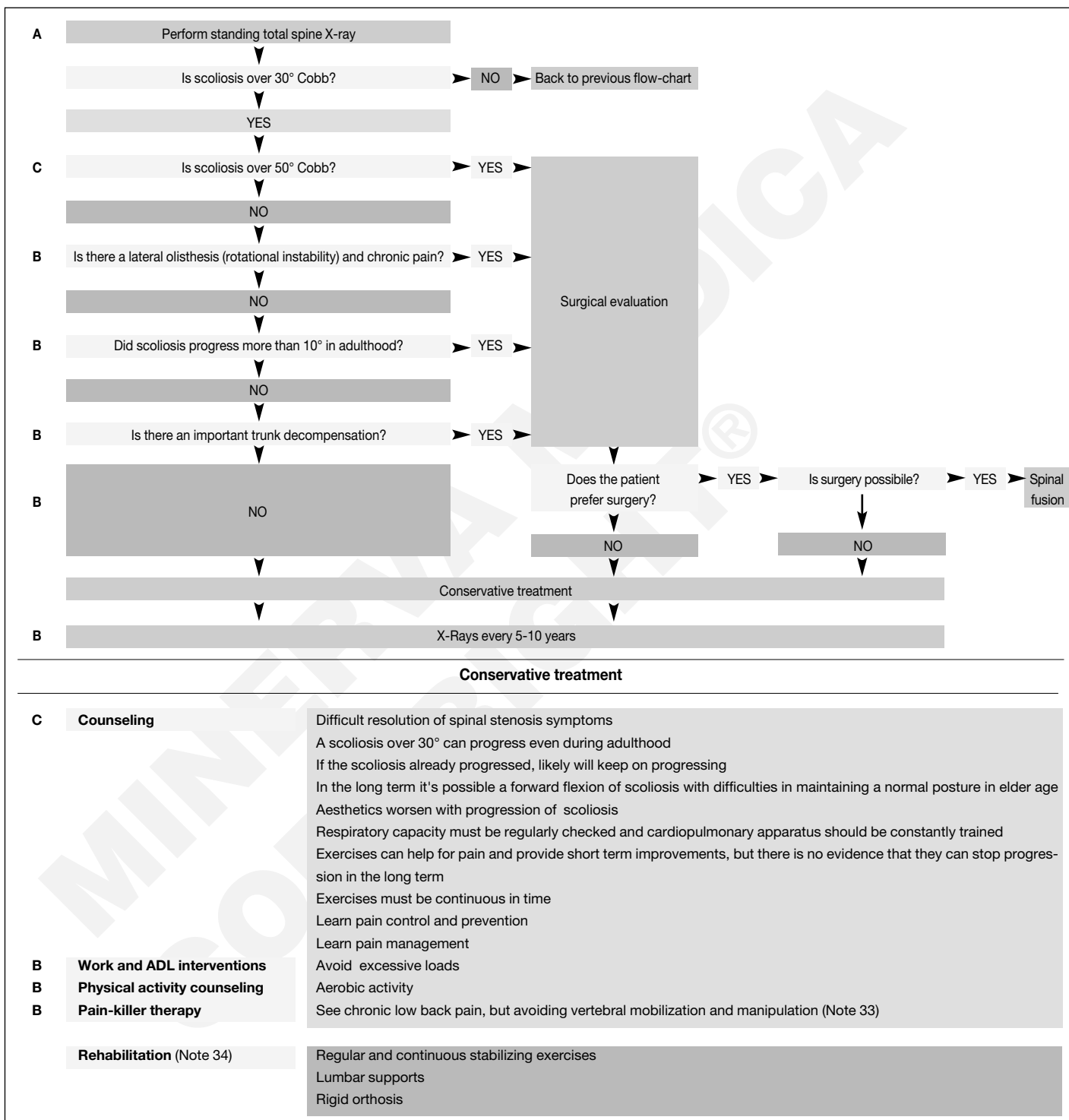


Figure 17.—Diagnostic-therapeutic flow-chart of adult painful scoliosis patients. Notes 33 and 34 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart and each recommendation.

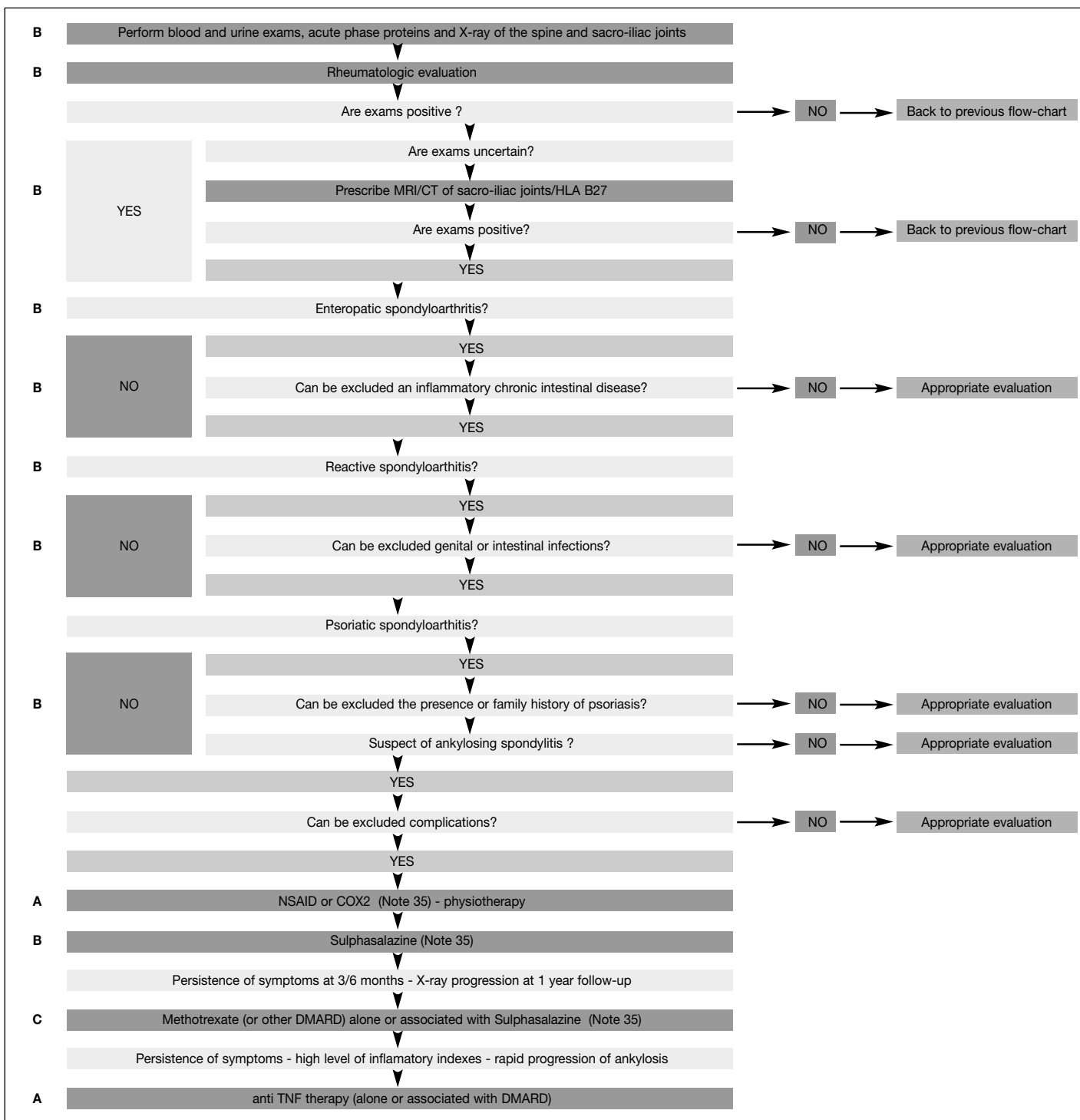


Figure 18.—Diagnostic-therapeutic flow-chart of spondyloarthritis patients. Note 35 can be found in Appendix II. The letters on the left represent the strength of evidence for each line of the flow-chart

— realization of instruments to act as “reminders” such as a pocket plastic version of the DTF, the introduction of DTF recommendations to already existing software etc.

— organization of workshops and specific training days for presentation and discussion of the DTF.

— distribution and diffuse presentation of this document through trained personnel (“educational outreach visit”).

Definitions

LBP is a pain, with/without functional limitation, lasting less than 4 weeks (1 month), in the posterior region included between the inferior limit of the costal arch and the inferior buttock fold, possibly with posterior irradiation to the thigh, but not below the knee. LBP can cause difficulties in normal everyday activities, with possible absence from work.

Subacute LBP presents the same symptoms, duration of which is prolonged over 4 weeks but within 3 months.

Sciatica is LBP irradiated below the knee (involvement of L5 or S1, in more than 90% of cases of radiculopathy) or anteriorly to the thigh (involvement of L2, L3, L4). Leg pain can be present even without lumbar pain.

If symptoms last over 3 months there is chronic LBP or sciatica.

Recurrent LBP is a clinical condition of acute episodes of LBP, lasting < 4 weeks, that return after a period of well-being.

Considered clinical pictures (Figure 1)

— Patient with first or recurrent acute LBP episode (duration ≤1 month): Figures 2, 3, 5, 7.

— Patient with first or recurrent acute sciatica episode (duration ≤1 month): Figures 4 and 6.

— Patient with subacute LBP (duration 1 – 3 months): Figures 8-10.

— Patient with subacute sciatica (duration 1 - 3 months): Figure 9.

— Patient with chronic LBP (duration >3 months): Figures 11-13.

— Patient with disc herniation: Figure 14.

— Patient with vertebral instability: Figure 15.

— Patient with spinal stenosis: Figure 16.

— Patient with scoliosis: Figure 17.

— Patient with spondyloarthritis: Figure 18.

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APPENDIX I

Working Group who developed the diagnostic therapeutic flow-charts with Scientific Societies represented, their Presidents at the start and end of the project, and their delegates

Coordinators of the project

S. Giovannoni (SIMG) – S. Negrini (SIMFER) – S. Minozzi (Cochrane Centre)

Italian Society of General Medicine - Società Italiana di Medicina Generale (SIMG)

President: C. Cricelli – Delegate: A. Bussotti

Italian Society of Neurology - Società Italiana di Neurologia (SIN)

Presidents: C. Messina, A. Rizzato – Delegate: L. Padua

Italian Society of Neurosurgery - Società Italiana di Neurochirurgia (SINCH)

Presidents: F. Tomasello, G. Brogli – Delegates: N. Di Lorenzo, H. Mouchati

Italian Society of Orthopaedics and Traumatology - Società Italiana di Ortopedia e Traumatologia (SIOT)

Presidents: A. Faldini, V. Monteleone – Delegates: M. D'Arienzo, G. Barneschi

Italian Society of Rheumatology - Società Italiana di Reumatologia (SIR)

Presidents: S. Bombardieri, B. Canesi – Delegates: V. Modena, A. Mannoni

Italian Society of Physical and Rehabilitation Medicine - Società Italiana di Medicina Fisica e Riabilitativa (SIMFER)

Presidents: R. Gimigliano, A. Giustini - Delegate: D. Bonaiuti

Italian Society of Work Medicine and Industrial Hygiene - Società Italiana di Medicina del Lavoro ed Igiene Industriale (SIMLII)

President: L. Ambrosi - Delegates: F. Violante, S. Mattioli

Italian Association of Physiotherapists - Associazione Italiana Fisioterapisti (AIFI)

President: V. Manigrasso - Delegate: F. Serafini

APPENDIX II

NOTES TO THE FLOW-CHART

1. It is possible to exclude cancer with 100% specificity if there are no age > 50 years, history of cancer, unexplainable loss of weight, no improvement after 4-6 weeks of conservative treatment.

2. Without urinary retention, the probability of a cauda equina syndrome is 1/10.000.

3. Pain below the knee increases the probability of a real radiculopathy.

4. The SLR test should be performed with both legs: it's positive with posterior pain below the knee between 30° and 70° of straight leg raising, with the patient lying on his back.

5. By-law declaration and certificate of professional disease. ⁵²

6. Strategies to optimize cost-effectiveness in NSAIDs therapy. ⁵³

7. Psychosocial risk factors for persistent low back pain and disability. ⁵⁴

8. Waddell test. ⁵⁵

9. Behavioral approach in primary care. ⁵⁶

10. Arthrosis: discopathy, osteophytosis, reduction of discal space, and/or vertebral endplates thickening. Usually these are radiological diagnoses without any relevance.

11. Neuromuscular spinal instability (different from the osteoligamentous one) has not been defined

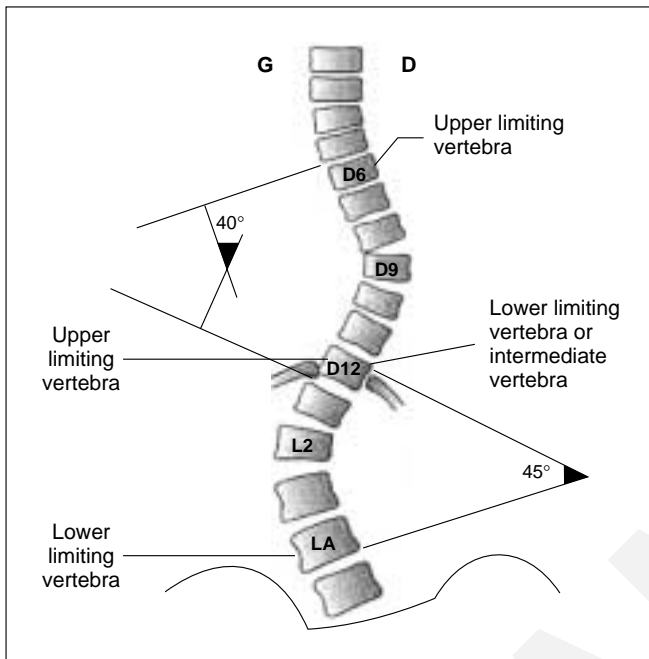


Figure 19.—Cobb degrees measurement.

in the literature. It is possible to consider the following criteria:

— sharp and brief acute pain following sudden position changes and/or efforts.

— pain during stabilization tests: *e.g.* sudden release after isometric contraction of hip muscles (flexion, adduction, abduction), trunk destabilization.

12. Cobb degrees measurements. Scoliosis over 30° can progress in adulthood and needs specialistic control (Figure 19).

13. (see acute LBP - Yellow flags).

14. In Italian: Roland-Morris.⁵⁷

15. Leg pain while walking always the same distance that disappears with flexion of the spine.

16. CT-scan is second choice screening exam.

17. Reduced strength, sensibility or reflexes with a metameric distribution and/or crossed SLR.

18. Pain-killer therapy should be proposed only when necessary.

19. Perform a complete treatment.

20. Follow the specific indications of each treatment.

21. Cost-effectiveness priority listing.

22. Choice recommended according to cost-effectiveness, patient preferences, availability and previous results.

23. Necessary in case of high disability.

24. *e.g.* psychological scales of SF36, Fear Avoidance Behavior.

25. Usually during rehabilitation, seldom after.

26. Pain-killer therapy kills only pain, but is not therapeutic.

27. Only after 2 years expert rehabilitation, according to patient choice and without any adverse psychological prognostic factor.

28. Before/after rehabilitation according to clinical indication.

29. After/during rehabilitation: choose individually the right moment.

30. Professional risk: load mobilization, trunk movements, vibrations.

31. Only one short-time treatment, not repeated.

32. Over 3 mm of mobility or over 10° of intervertebral angle.

33. Mobilization means performing repeated manoeuvres till the end of range of motion (RoM) that implies an increase of RoM over time.

34. Stabilizing exercises increase spinal neuromotor control ability and are based on the improvement of: proprioception, kinesthesia, spinal coordination, precise neuromotor control of movement, strengthening of stabilizing muscles (particularly multifidus and transversus).

35. In presence of peripheral arthritis.