Pain Therapy Center Mainz

H.-R. Casser

Red Cross Pain Treatment Center (RCPTC)

- Medical Concept –

Health Executive Tour Germany 2017

Treatment indications

Acute, subacute and chronic pain

unclear origin, resistant to treatment

- spec. and nonspec. Back Pain
- Headache, Facial pain: Tension headache, Migraine, Trigeminus Neuralgia
- Neuropathic Pain : Post Zoster Neuralgia, CRPS, Radiculopathia, Nerve Compression Sy., Phantom pain, Central Pain

Treatment indications

Acute, subacute and chronic

Unclear origin, resistant to treatment

- Painful joints and rheumatic diseases
- Tumour pain

- Postoperative pain („Failed Back Sy“)

- Wide Spread Pain Sy.

Prevalence Study of Chronic Pain in Germany

- **27 % (23 Mill.) , if chronic pain defined by time (> 3 months)**
- **7,4 % (6 Mill.) Pain and functional deficits**
- **2,8 % (2,2 Mill.) „Pain Disease“ pain chronification**

Häuser et al. 2013

Prevalence Study

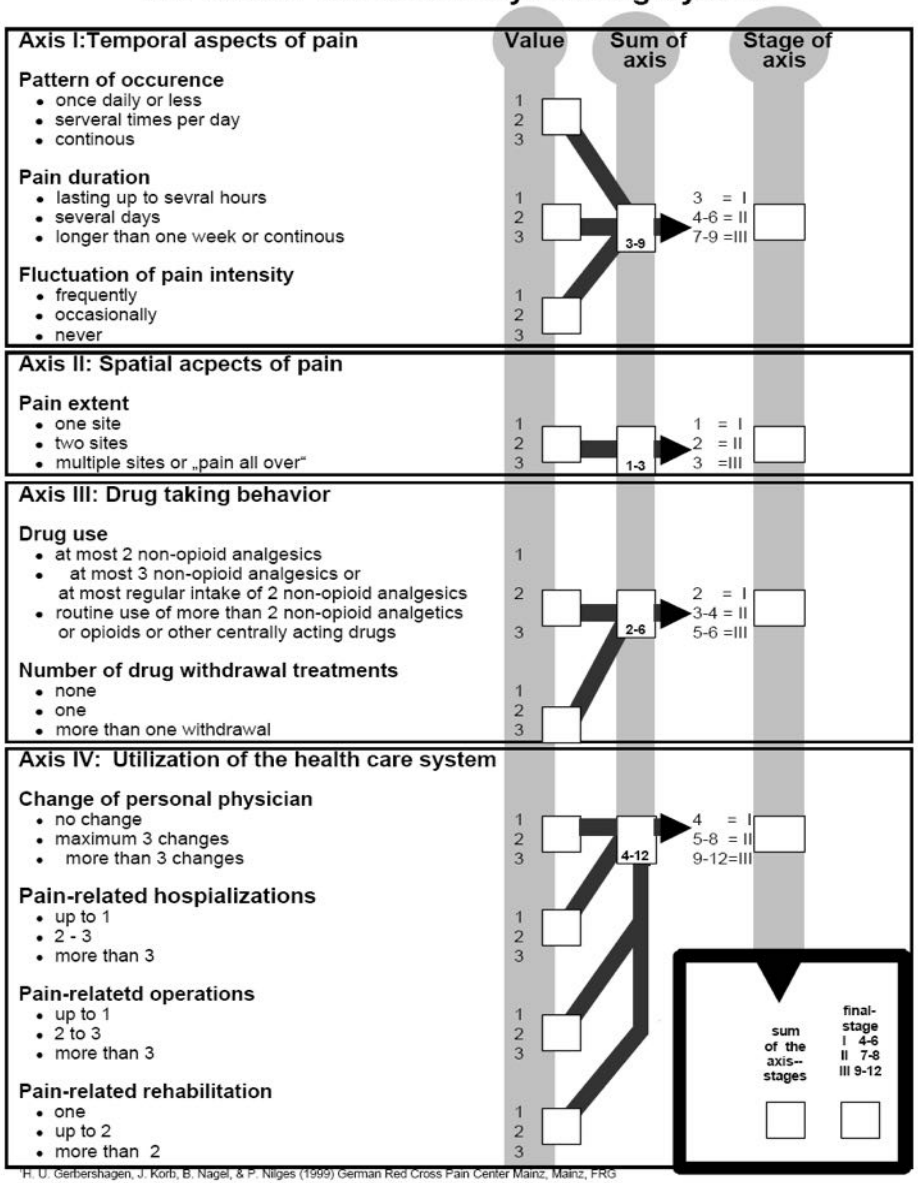
- **Pain statistics in epidemic studies don`t match with severe pain including somatic, psychiatric and social disabilities**
- **Requirement of graduated treatment concept**

Häuser et al. 2013

Chronified Pain: Multi-Dimensional Affliction

- on the physiological and clinical level: by a loss of mobility and functional restriction
- on the cognitive and emotional level: by way of sensitivity disorders and unfavourable thinking patterns
- on the behavioural level: by way of pain-related behaviour
- on a social level: by unfavourable effects on social interaction and restrictions in the ability to work

The Mainz Pain Staging System
The Mainz Pain Chronicity Scoring System[1]



[1] H. U. Gerbershagen, J. Korb, B. Nagel, & P. Nilges (1999) German Red Cross Pain Center Mainz, Mainz, FRG

The Mainz Pain Staging System
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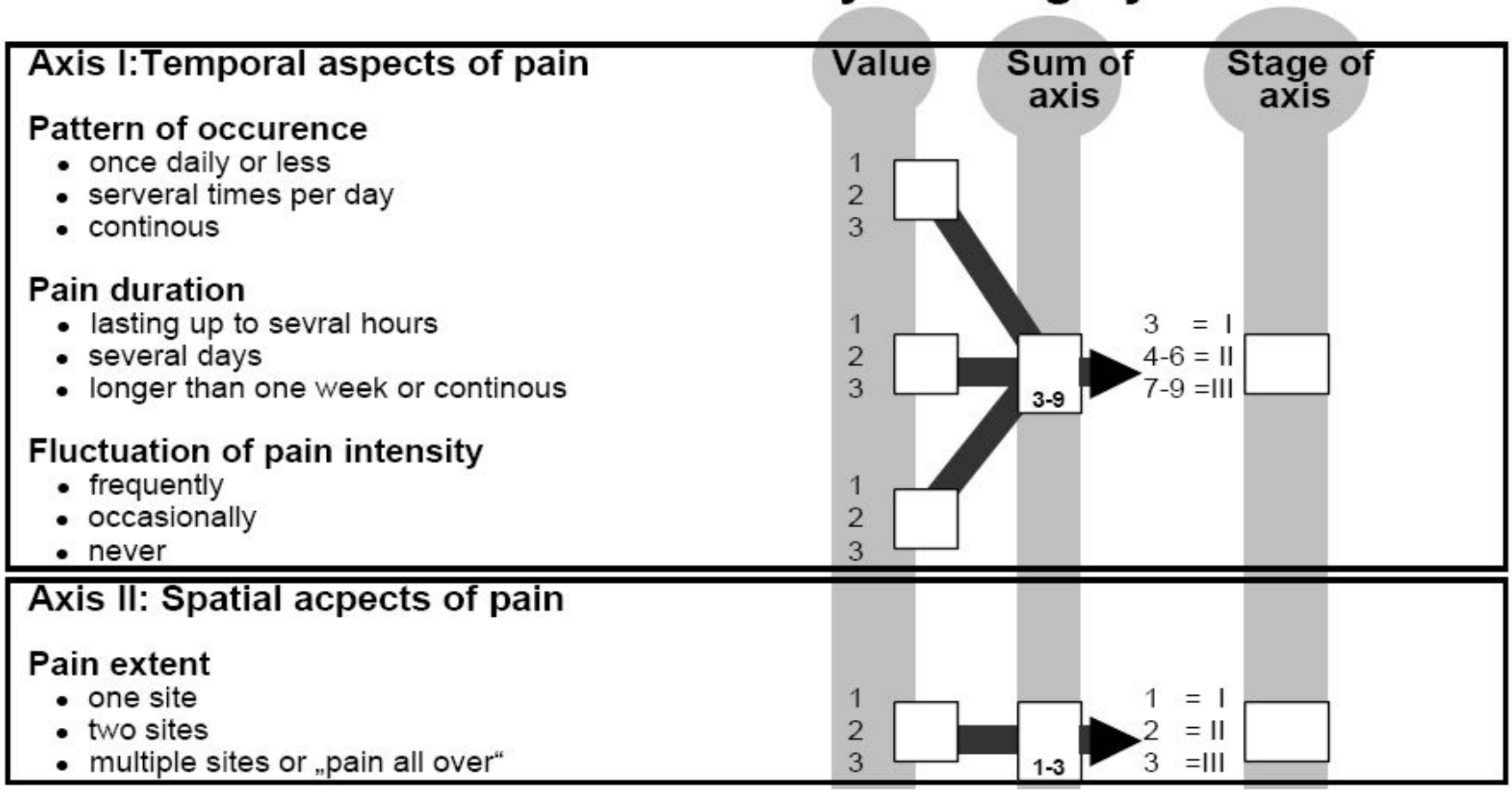


Axis III: Drug taking behavior

Drug use

- at most 2 non-opioid analgesics
- at most 3 non-opioid analgesics or at most regular intake of 2 non-opioid analgesics
- routine use of more than 2 non-opioid analgetics or opioids or other centrally acting drugs

Number of drug withdrawal treatments

- none
- one
- more than one withdrawal

Axis IV: Utilization of the health care system

Change of personal physician

- no change
- maximum 3 changes
- more than 3 changes

Pain-related hospializations

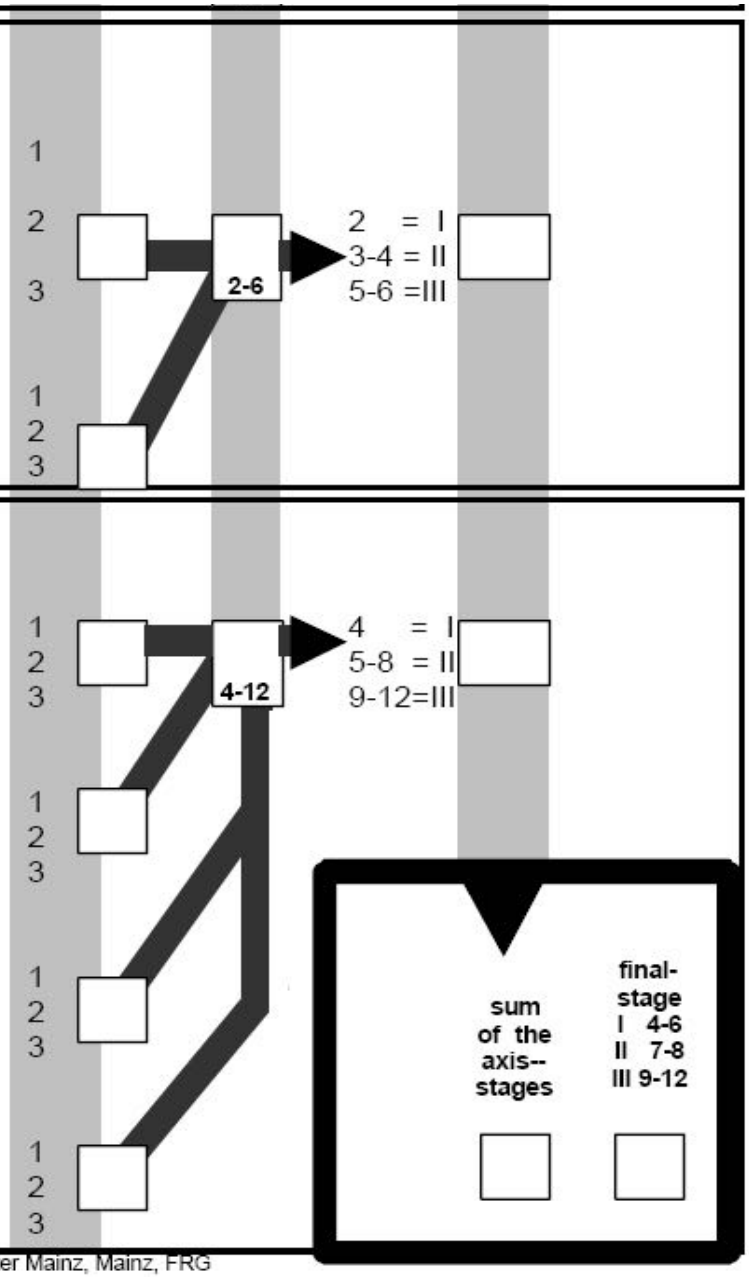
- up to 1
- 2 - 3
- more than 3

Pain-relatetd operations

- up to 1
- 2 to 3
- more than 3

Pain-related rehabilitation

- one
- up to 2
- more than 2



*H. U. Gerbershagen, J. Korb, B. Nagel, & P. Nilges (1999) German Red Cross Pain Center Mainz, Mainz, FRG

Multimodal Interdisciplinary Treatment in a Pain Clinic

Definition (DGSS)

- Treatment of patients with „chronified“ pain syndromes, which is integrated in terms of content, timing and methodology and harmonized throughout with regard to its conceptional structure
- Administration of medical therapy and psycho-therapeutic processes, according to pre-set therapy objectives, which are procedurally agreed and harmonised
- Joint assessment & evaluation of therapy progress within regularly scheduled team briefings, with the participation of all therapists concerned, is imperative

Interdisciplinarity

Objectives of Multimodal Treatment:

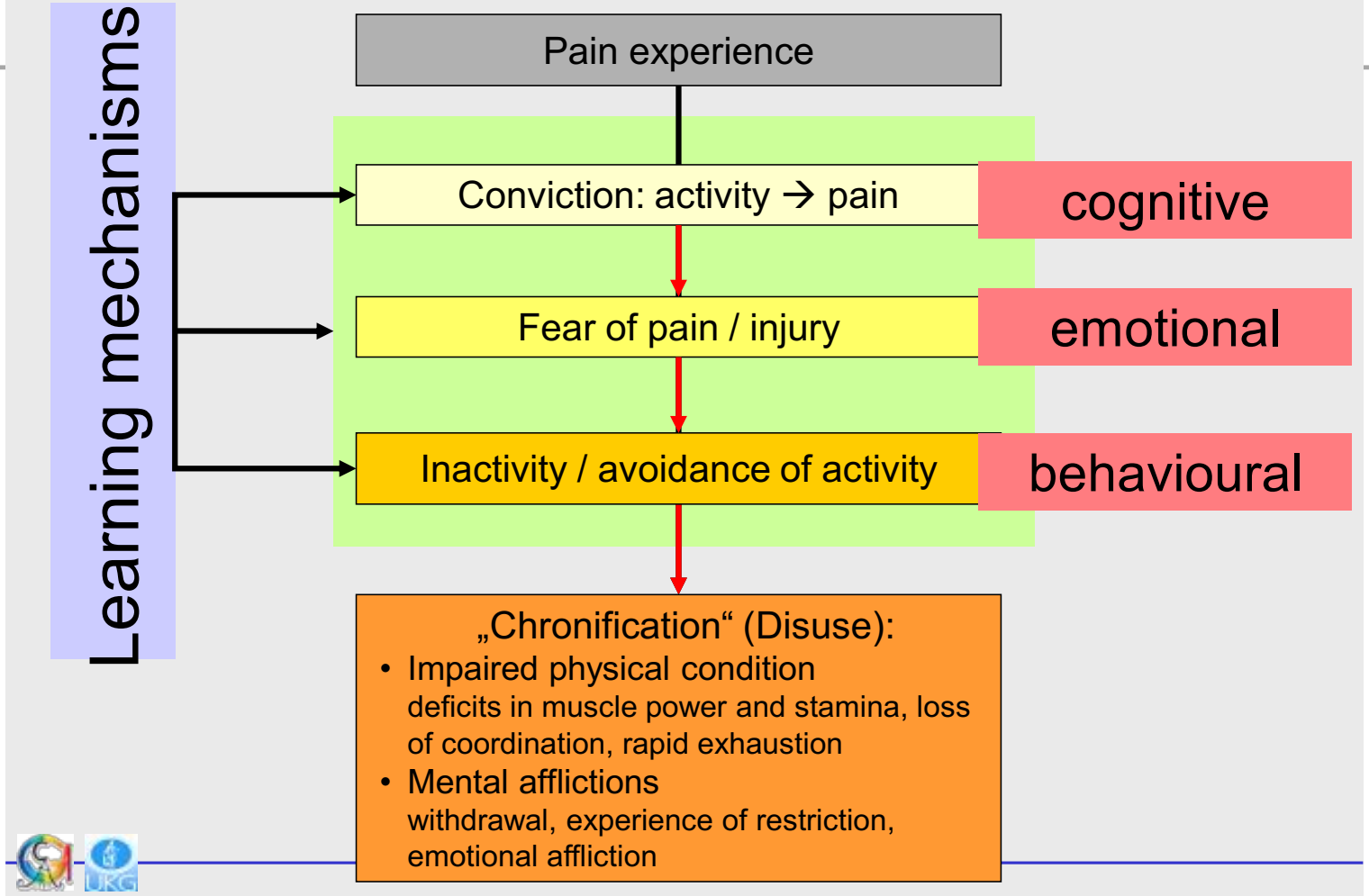
- **Reduction of pain-related restrictions**
- **Increased activity and stamina**
- **Improvement of health-related quality of life and happiness with life**
- **Improved coping mechanisms**
- **Increased ability to cope with physical strain**
- **Stabilisation of social relationships**
- **Reduction or withdrawal of medication**
- **Building up acceptance for assuming individual responsibility for dealing with personal restrictions**
- **Alleviation of pain**

Interdisciplinary Multimodal Therapy:

- Fundamental Concepts:
  - **Functional Restoration**
  - **Fear avoidance**

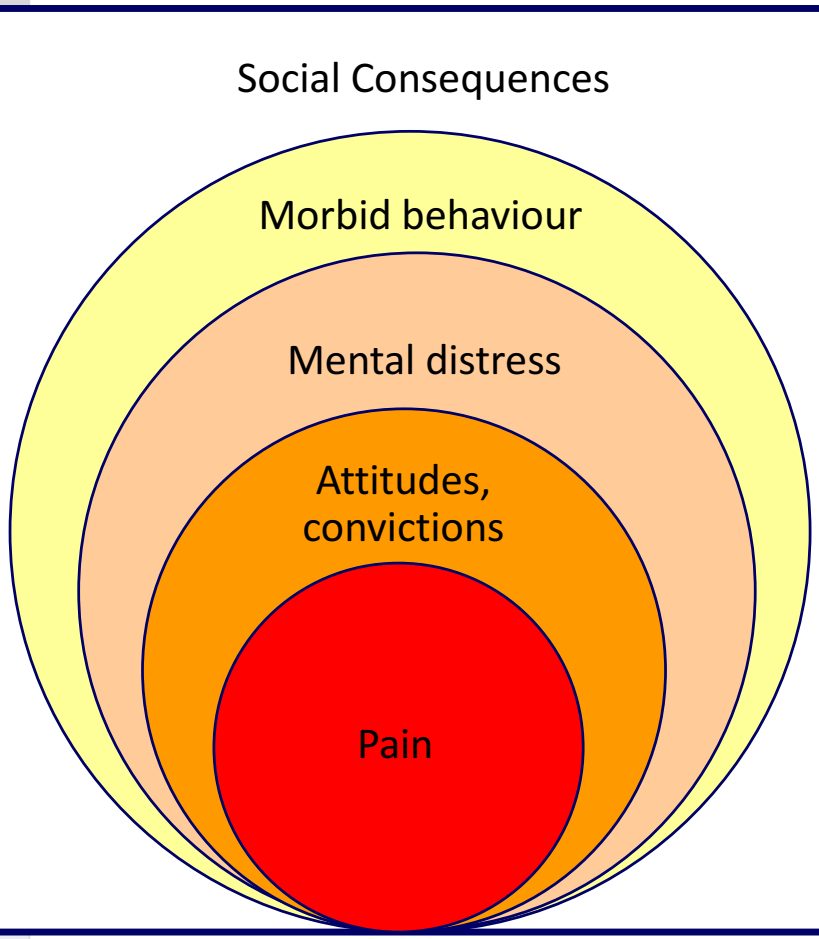
Mayer and Gatchel 1988

Fear-Avoidance Concept



Pfingsten et al. 2003

Elements of the Integrated Multi-modal Therapy Programmes at the DRK Schmerz-Zentrum



Relaxation techniques	Instruction of patients	Cardio-vascular training
Behavioural Therapy	Medical Treatment	Physiotherapy
Pain coping techniques	Everyday training	Power Training

Organisational Structures for the Treatment of Chronic Pain Patients (IASP, Bonica 1974, Turk 1998)

Multi-disciplinary Pain Center:

- **Minimum of 5 permanently resident disciplines: minimum of 3 consultant doctors, various specialisations; staff including psychologists, psychiatrists, carers/nurses, physiotherapists and ergotherapists, spinal surgery special diagnostics in order to clarify indication for surgery and scope thereof**
- **Availability of a wide range of therapy concepts**
- **Close cooperation with the Health System**
- **Training and further education, therapy evaluation**

Treatment Structure

DRK Pain Therapy Center

Out-patient
Diagnostics
&Therapy

Day clinic
Care

In-patient
Diagnostics
& Therapy

ree columns of treatment

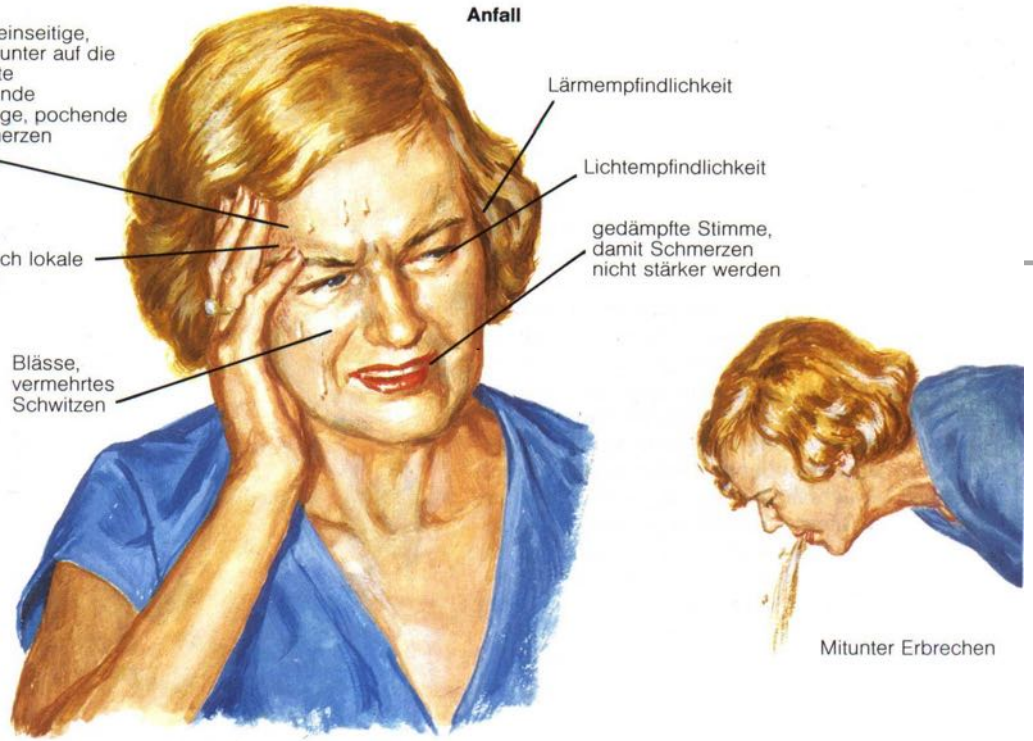
Referral

GP / Consultant / Pain Therapy Consultant

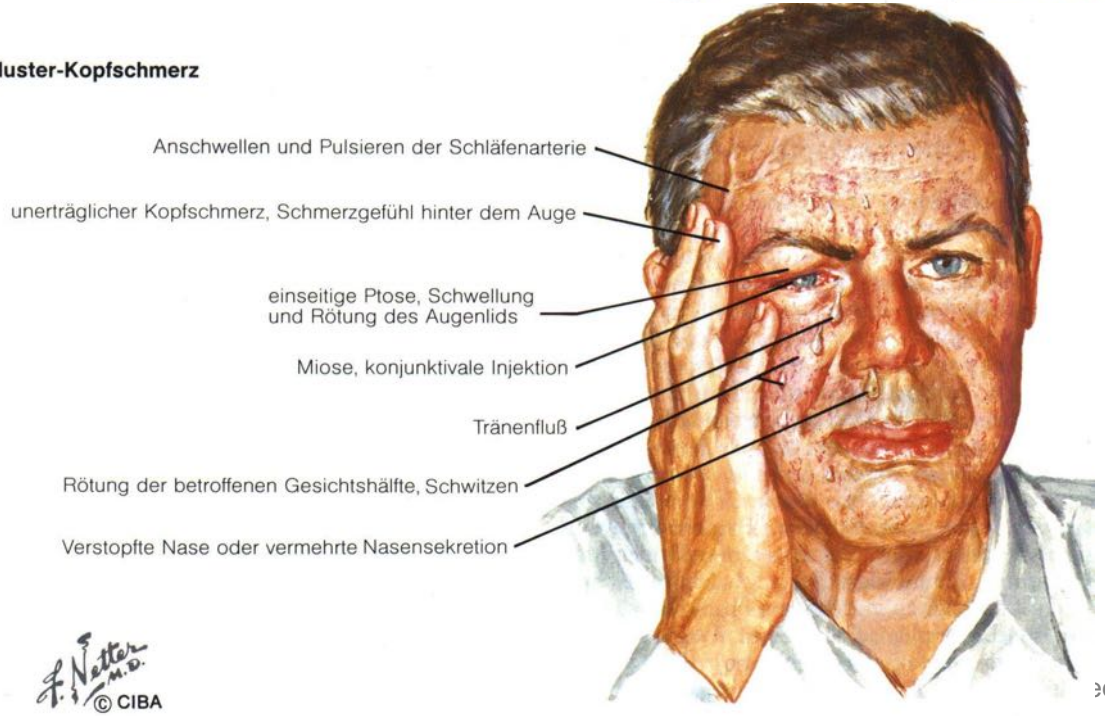
Acute Pain

- **severe, therapy-resistant pain of less than 6 weeks**
- **unmanageable at physician‘s practice**
- **unclear diagnosis**

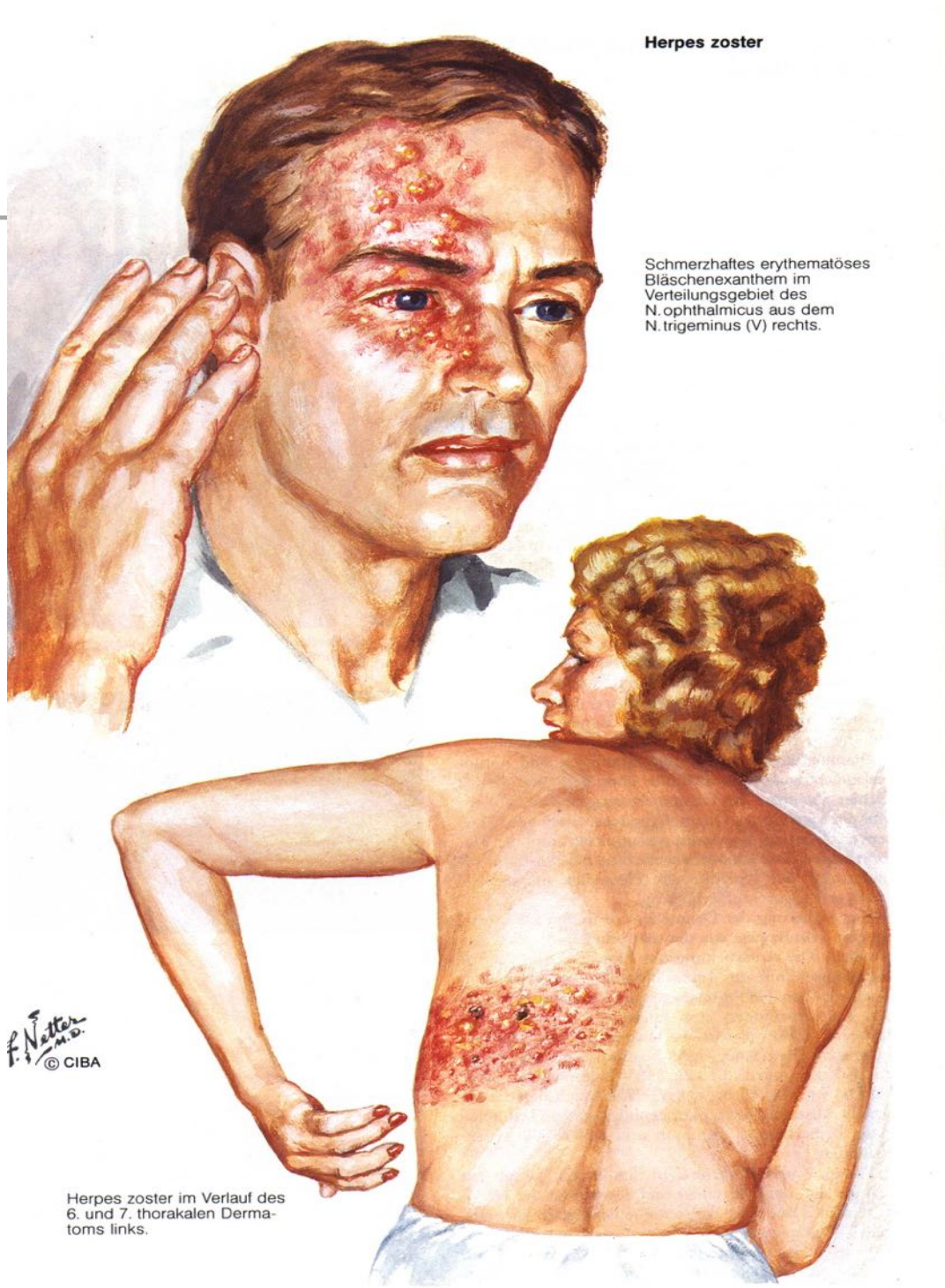
Anfall



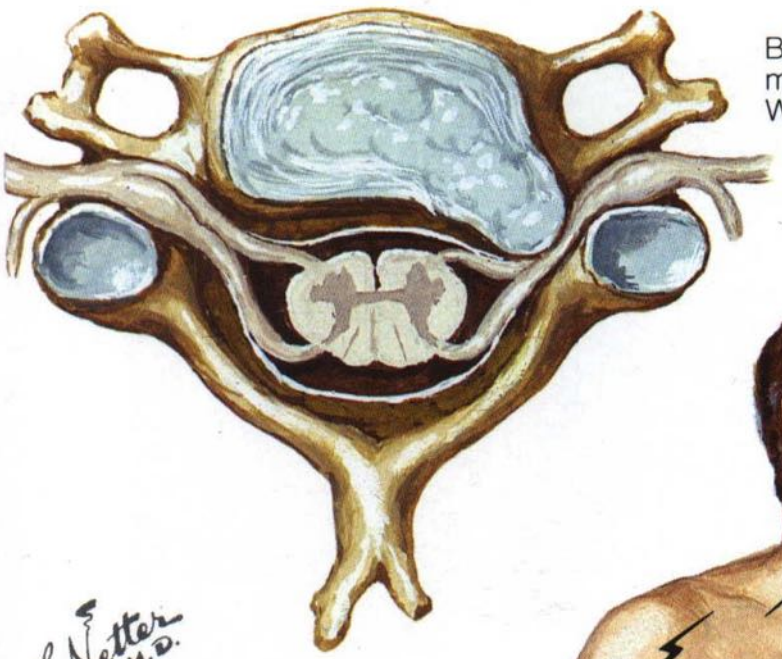
Cluster-Kopfschmerz



F. Netter M.D. © CIBA


Herpes zoster
Schmerzhaftes erythematöses Bläschenexanthem im Verteilungsgebiet des N. ophthalmicus aus dem N. trigeminus (V) rechts.
F. Netter M.D.
© CIBA
Herpes zoster im Verlauf des 6. und 7. thorakalen Dermatoms links.

Zervikaler Bandscheibenvorfall: klinisches Erscheinungsbild



Bandscheibenhernie mit Wurzelkompression.

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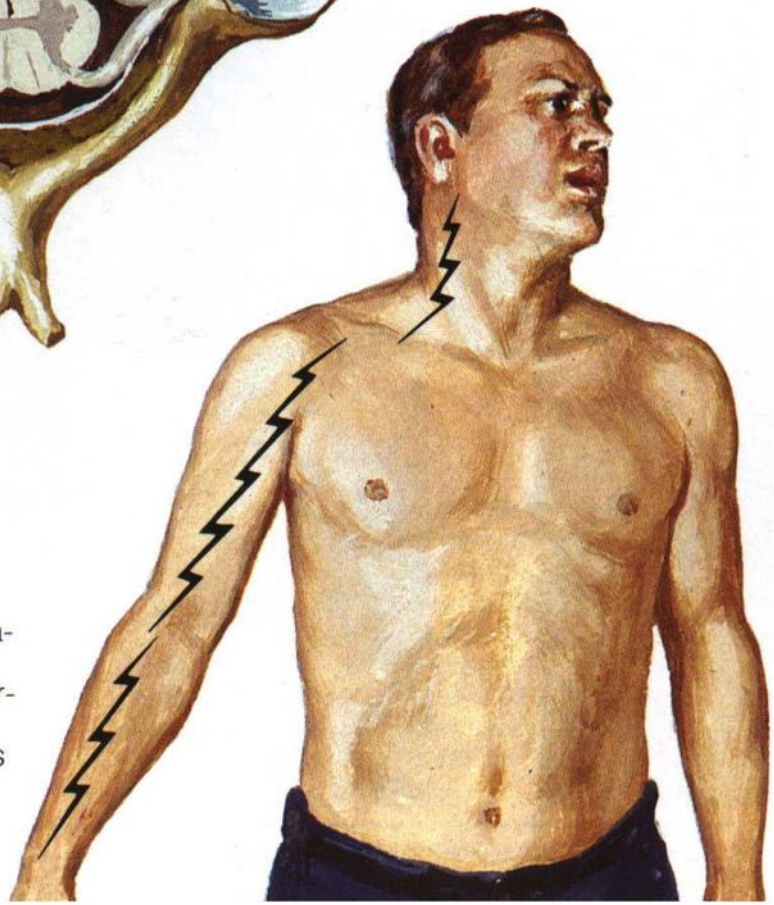
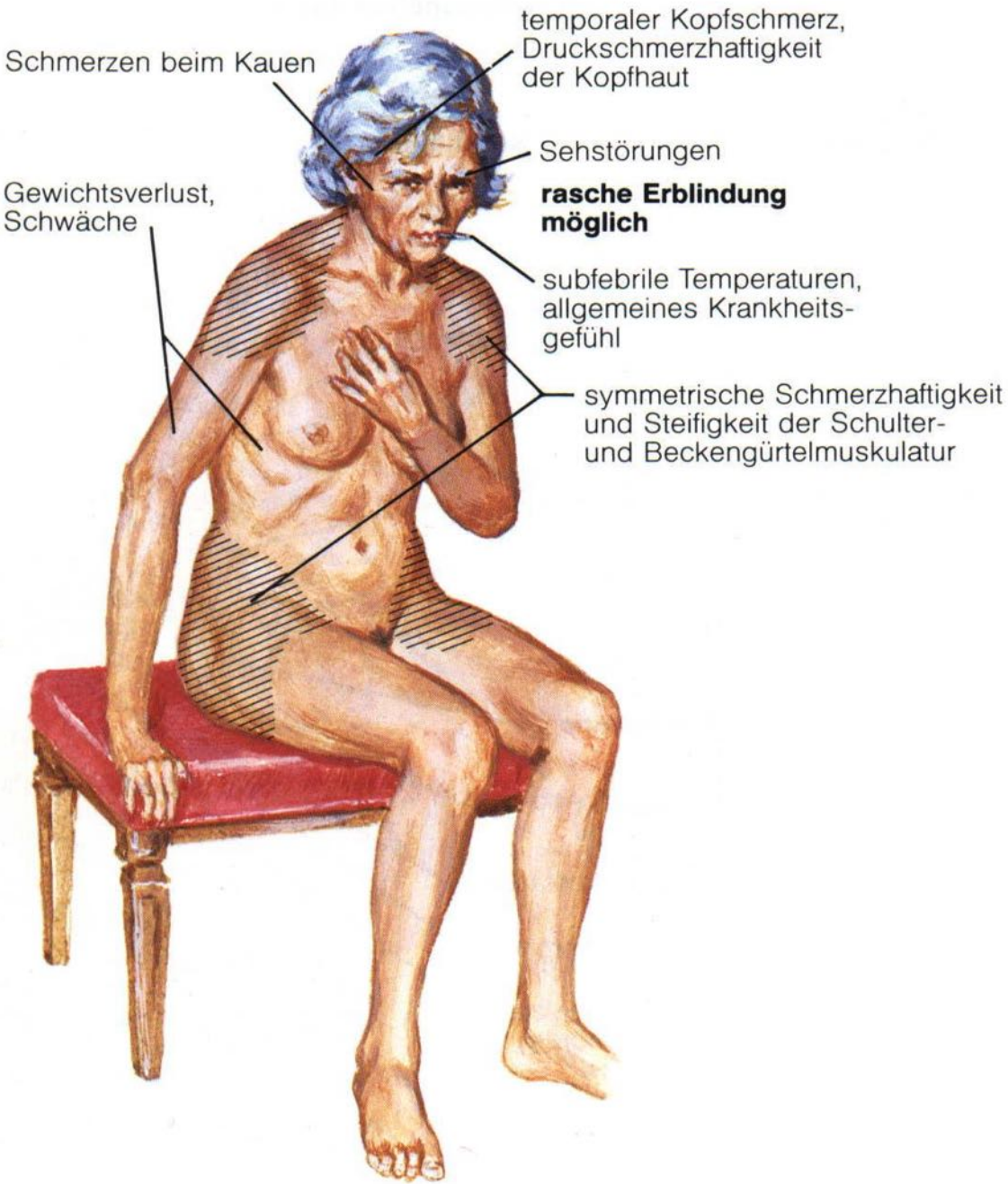


Hyperextension und Rotation des Kopfes von der betroffenen Seite weg verursachen radikuläre Schmerzen, die vom Hals in den Arm ausstrahlen.

Riesenzellenarteriitis (Arteriitis temporalis), Polymyalgia rheumatica



Chronic Pain

- resistant to out-patient therapy for more than 6 weeks
- pain affliction with bio-psycho-social consequences
- Unclear diagnosis
- multi-mode therapy indicated

GP / Consultant

Chronic Pain

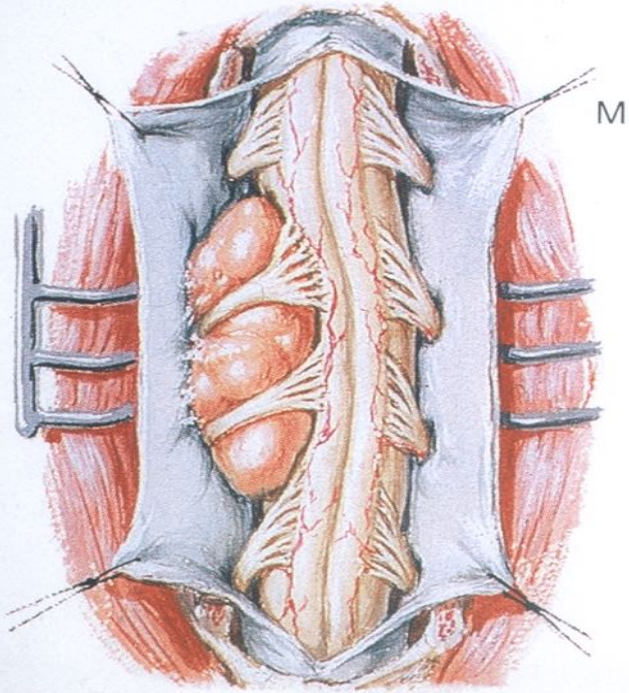
Mechanical Causes of Low Back Pain

A. Intrinsic (postural and muscular)

Good posture and musculoskeletal condition:
- head erect
- chest high
- abdomen in
- back flat
- buttocks in
- ideal weight
- good muscle tone (regular exercise and regulated athletic activity)

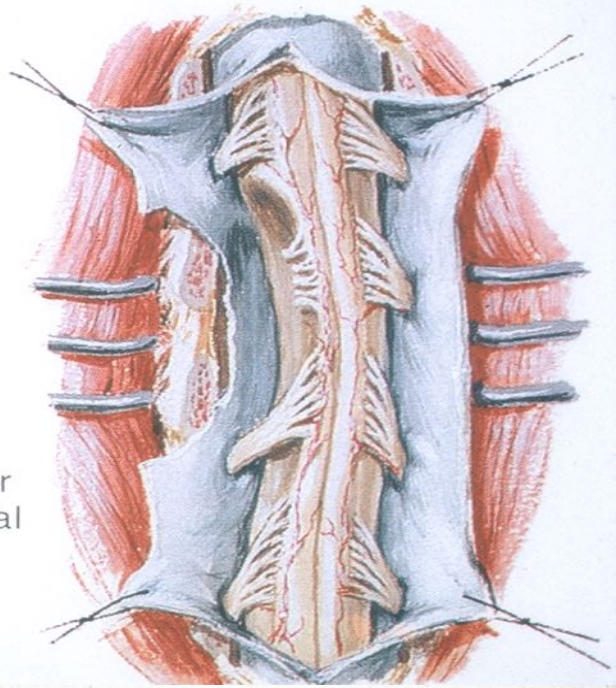
Poor posture and musculoskeletal condition:
- head forward
- chest flat
- abdomen protruding
- swayback
- buttocks protruding
- overweight
- poor muscle tone (lack of regular exercise and regulated athletic activity)

Extramedullary

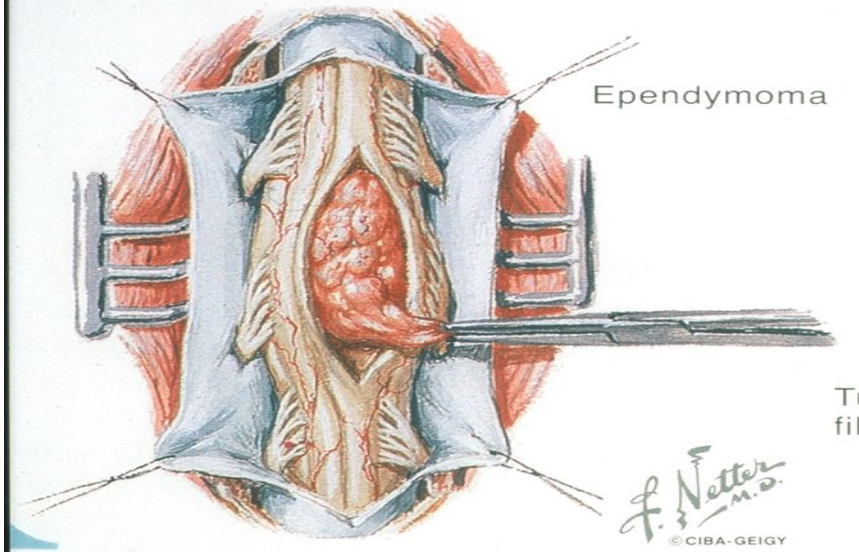


Meningioma

Depressed tumor bed after removal of tumor. One nerve root has been sacrificed

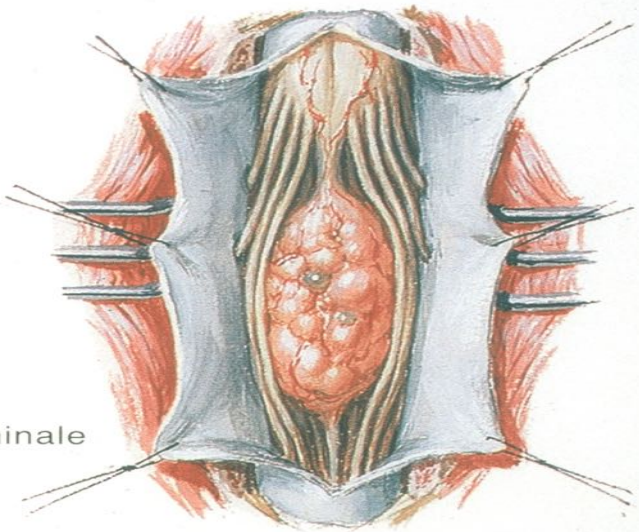


Intramedullary



Ependymoma

Tumor of filum terminale



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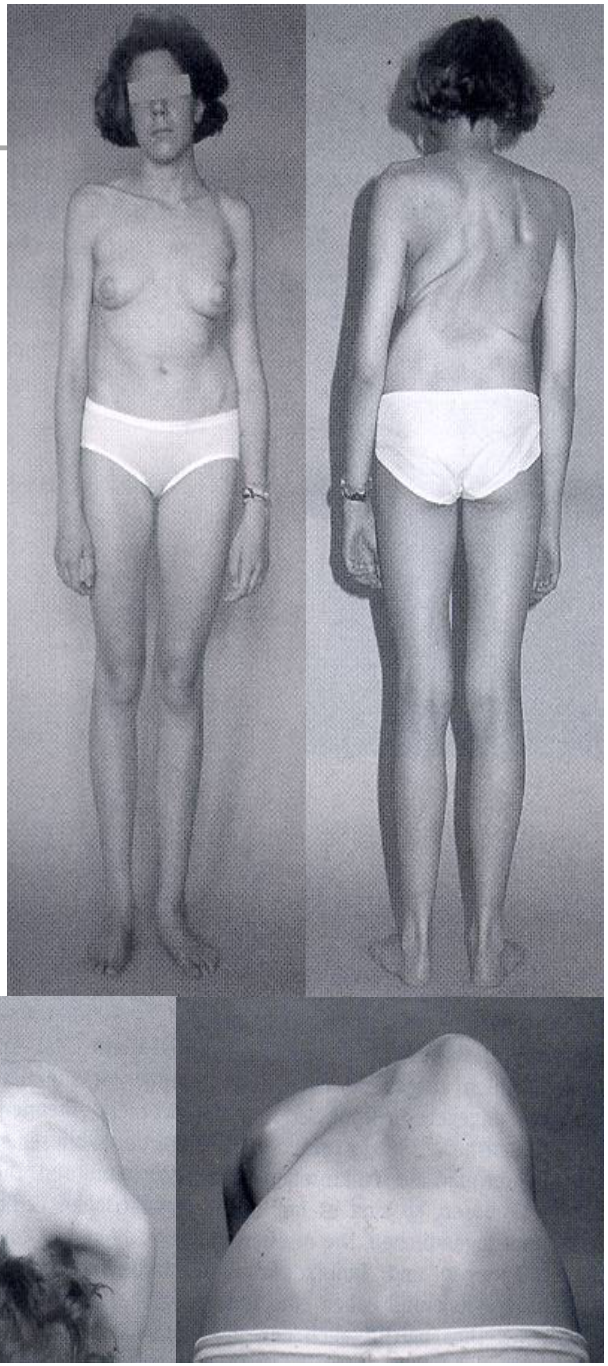
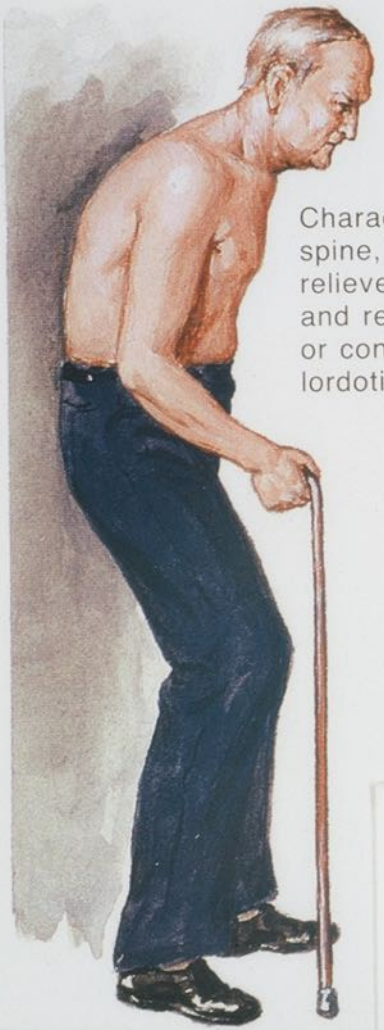
CLINICAL SYMPOSIA

Skoliose - Klinik

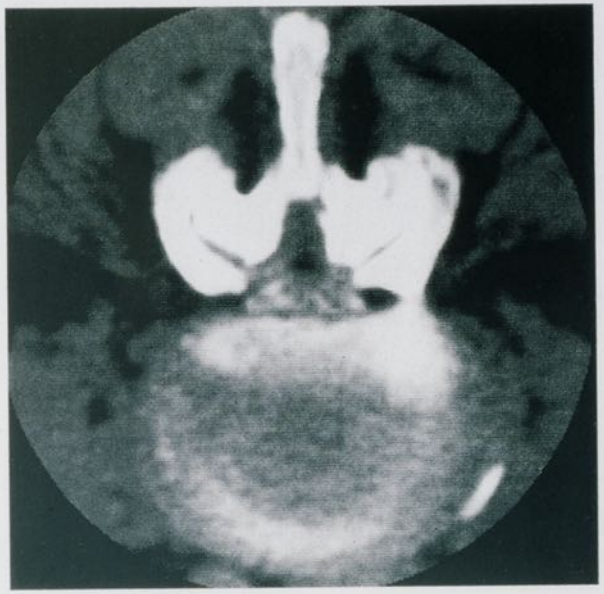
- Rippenbuckel der Brustwirbelsäulen-Skoliose
- Lendenwulst der Lendenwirbel-Skoliose
- Taillendreieck:
  - Konvexseitig verstrichen, konkavseitig betont mit Faltenbildung
  - Disproportionierter Minderwuchs infolge der Rumpfverkürzung



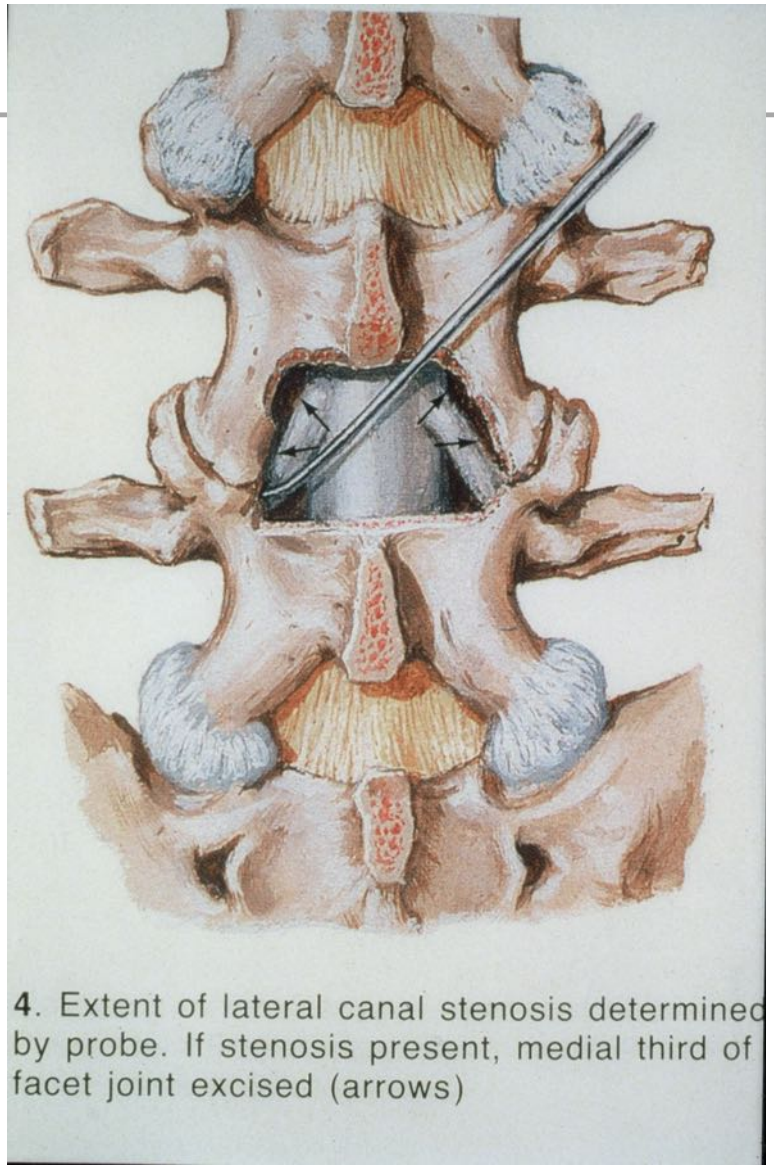
Spinal Stenosis



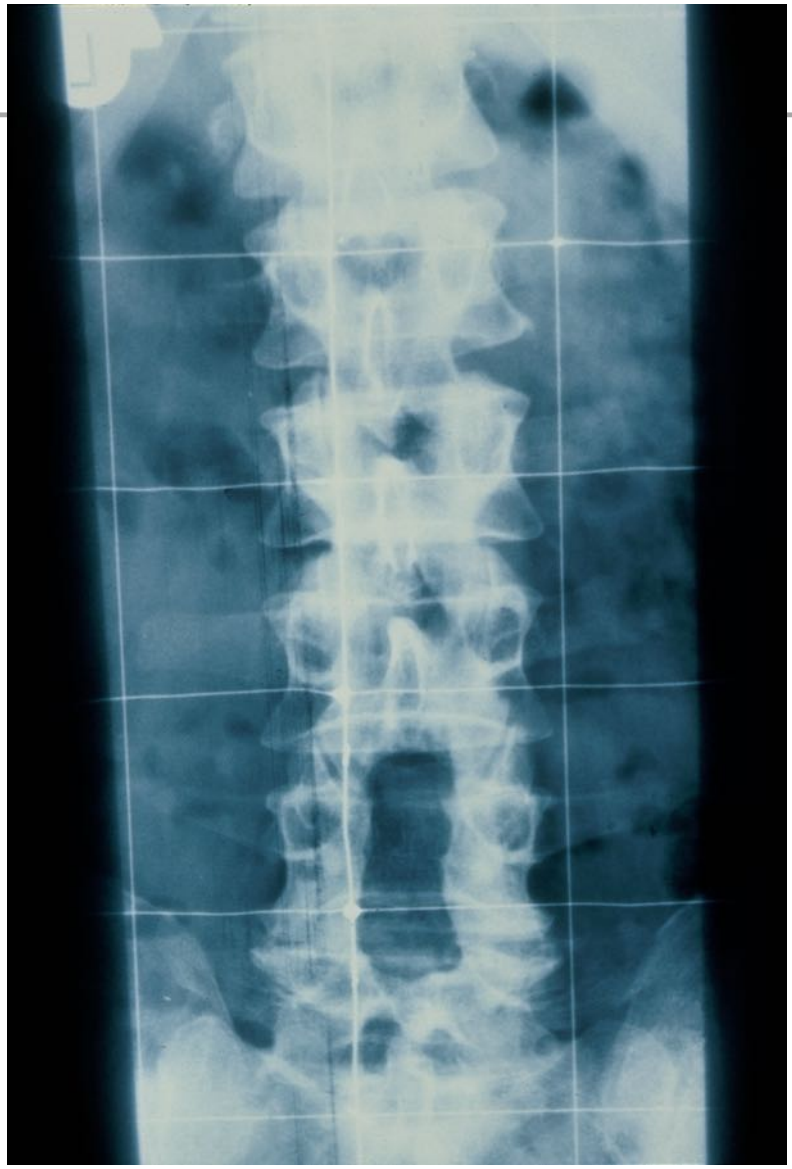
Characteristic posture with neck, spine, hips, and knees flexed relieves pressure on cauda equina and resulting pain. Back is flat or convex with absence of normal lordotic curvature

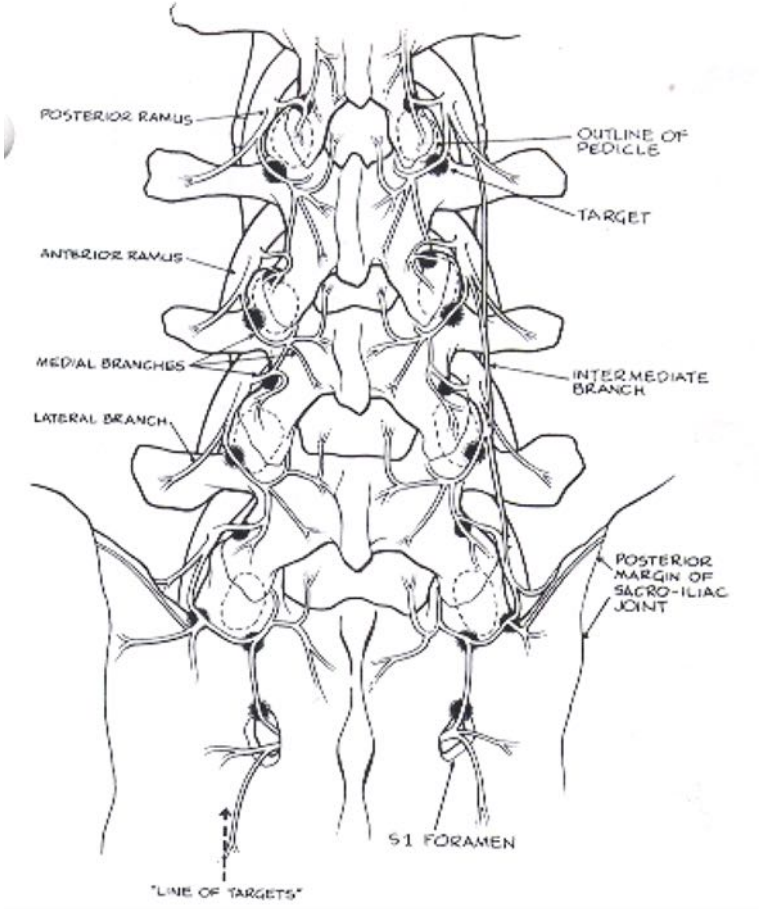


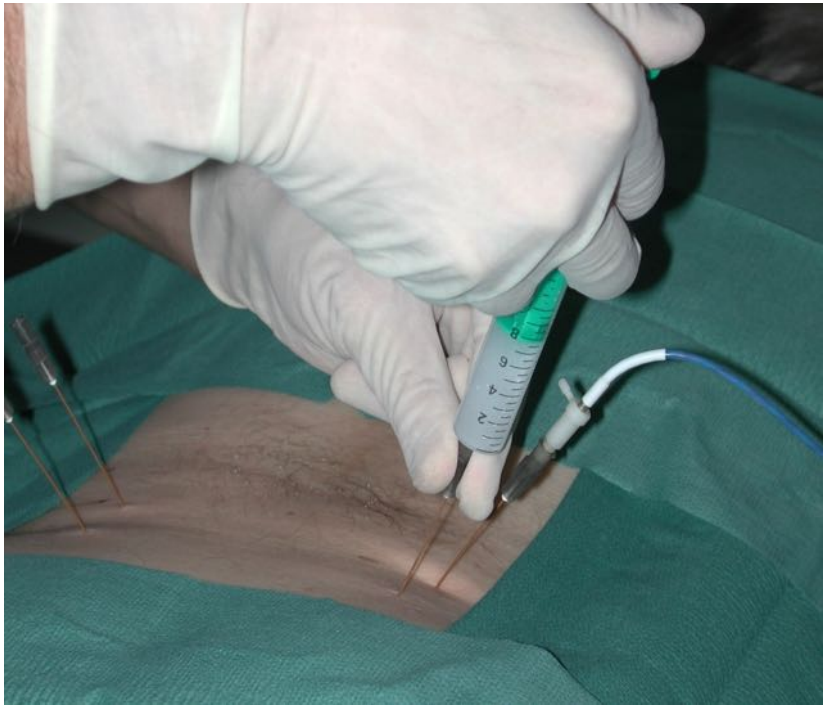
Metrizamide-enhanced CT scan shows severe compromise of spinal canal with compressed dural compartment



4. Extent of lateral canal stenosis determined by probe. If stenosis present, medial third of facet joint excised (arrows)




POSTERIOR RAMUS
OUTLINE OF PEDICLE
TARGET
ANTERIOR RAMUS
MEDIAL BRANCHES
INTERMEDIATE BRANCH
LATERAL BRANCH
POSTERIOR MARGIN OF SACRO-ILIAC JOINT
S1 FORAMEN
"LINE OF TARGETS"



Risk factors and Yellow flags
Chronification Factors

- Their presence should alert the physician to potential long-term problems, as well as the need to prevent these
- Specific psycho-therapeutic referrals only in obvious cases of psychopathies (depression, anxiety, drug abuse etc.) or in case of therapy-resistance

(Waddell 1998)

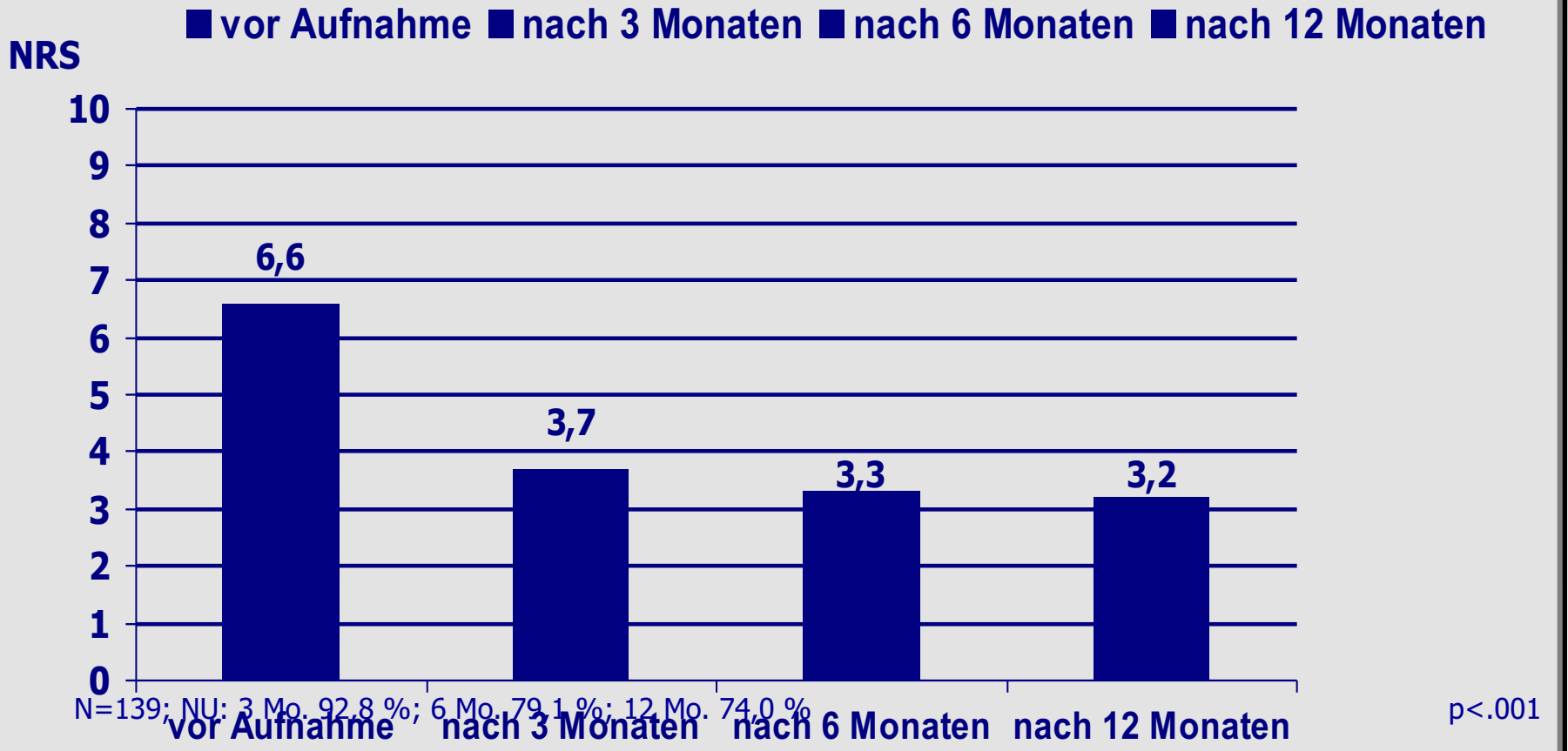
„Yellow flags“

- Pessimistic attitude
- Pain avoidance behavior
- Tendency for depressive disorders and withdrawal behavior
- Preference of passive measures
- Pension and/or insurance claims
- Problems within the family or at the workplace
- Unfavorable experiences earlier diagnostics and therapy

- *(New Zealand acute low back pain guide, ACC 1997)*

Changes in the Average Pain Intensity (NRS 0-10)

Back Pain Patients

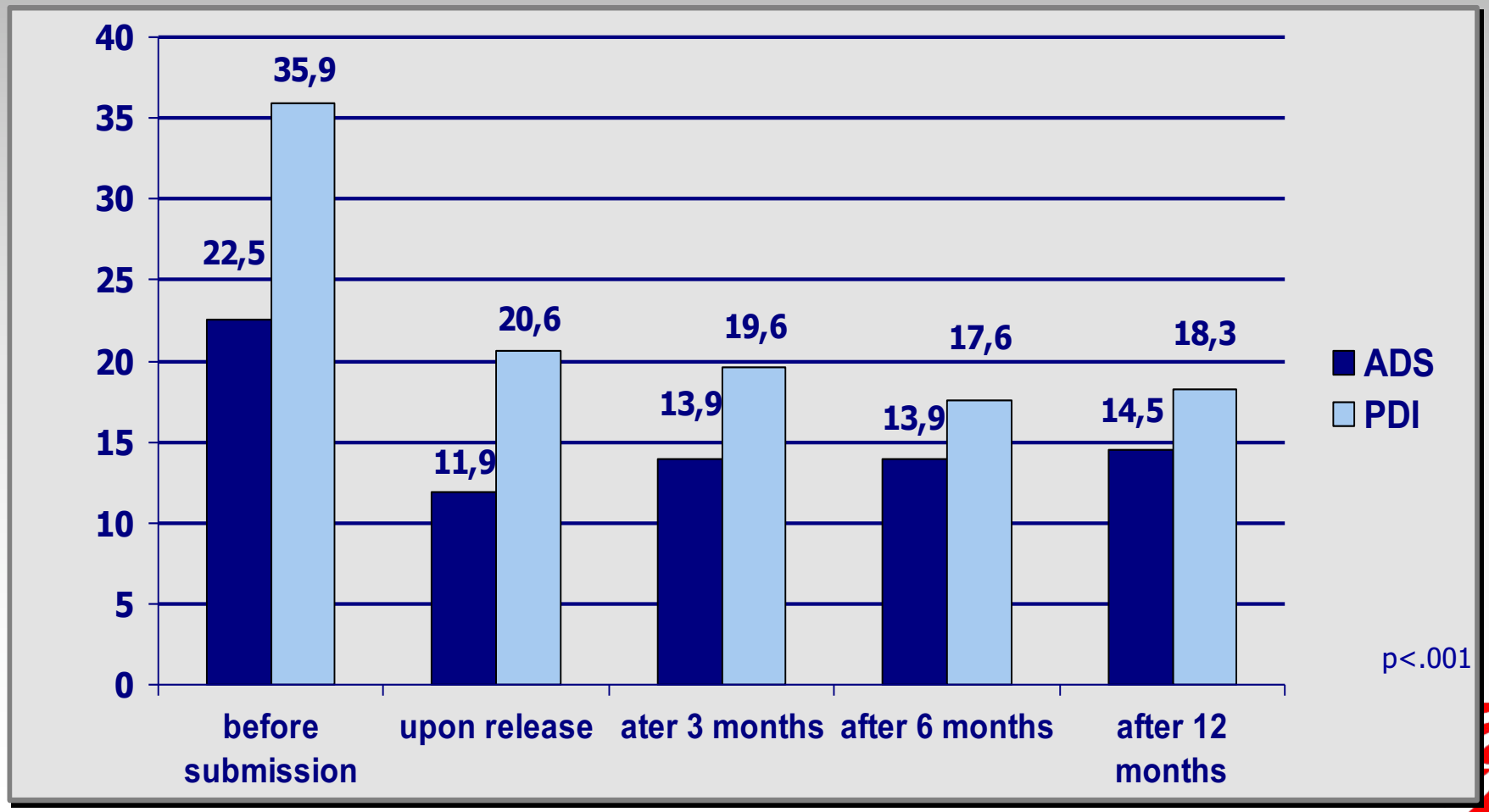


N=139; NU: 3 Mo. 92,8 %; 6 Mo. 79,1 %; 12 Mo. 74,0 %

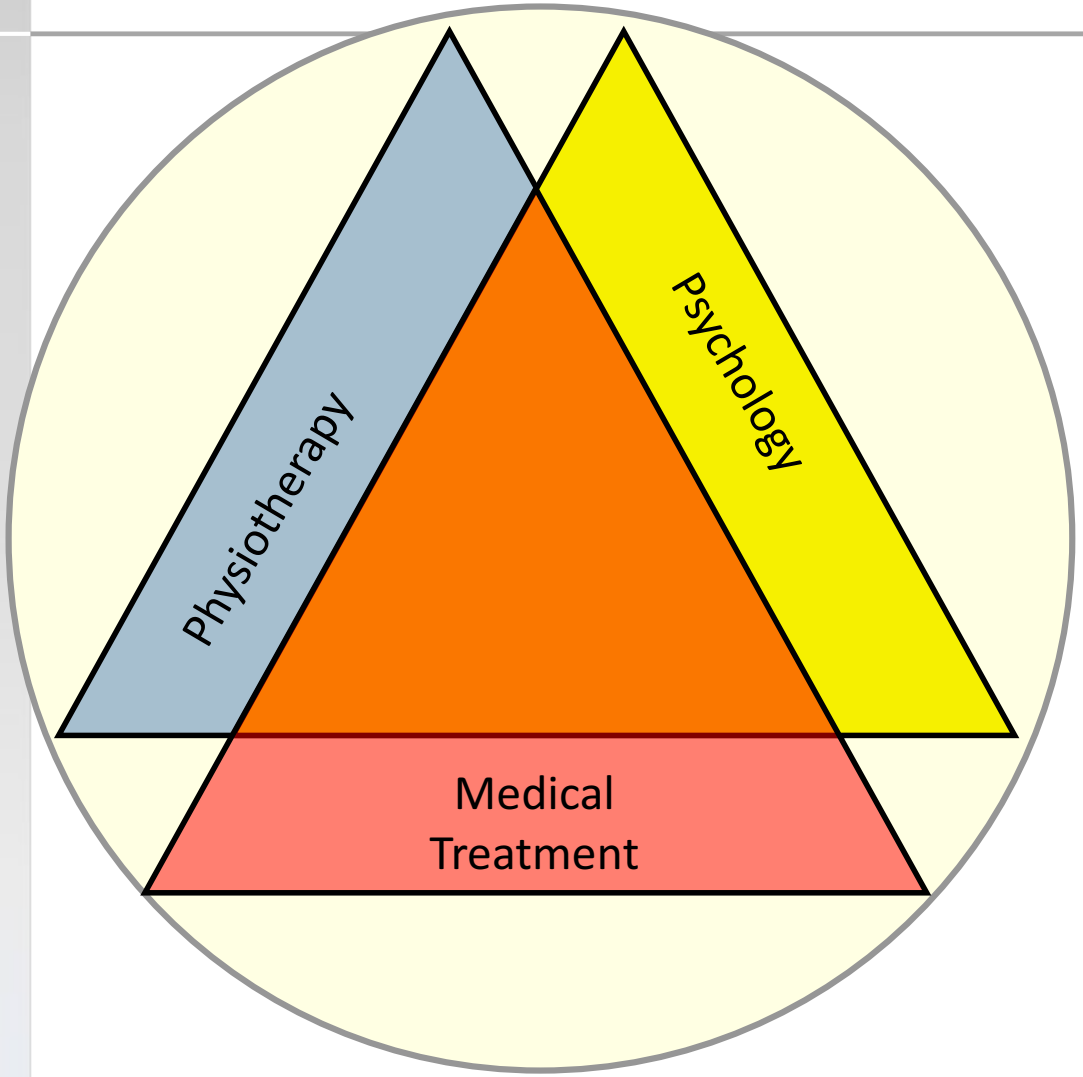
p<.001

Changes in Depressivity (ADS) and Painrelated Impairment (PDI)

Back pain patients



Inter-disciplinary Pain Therapy



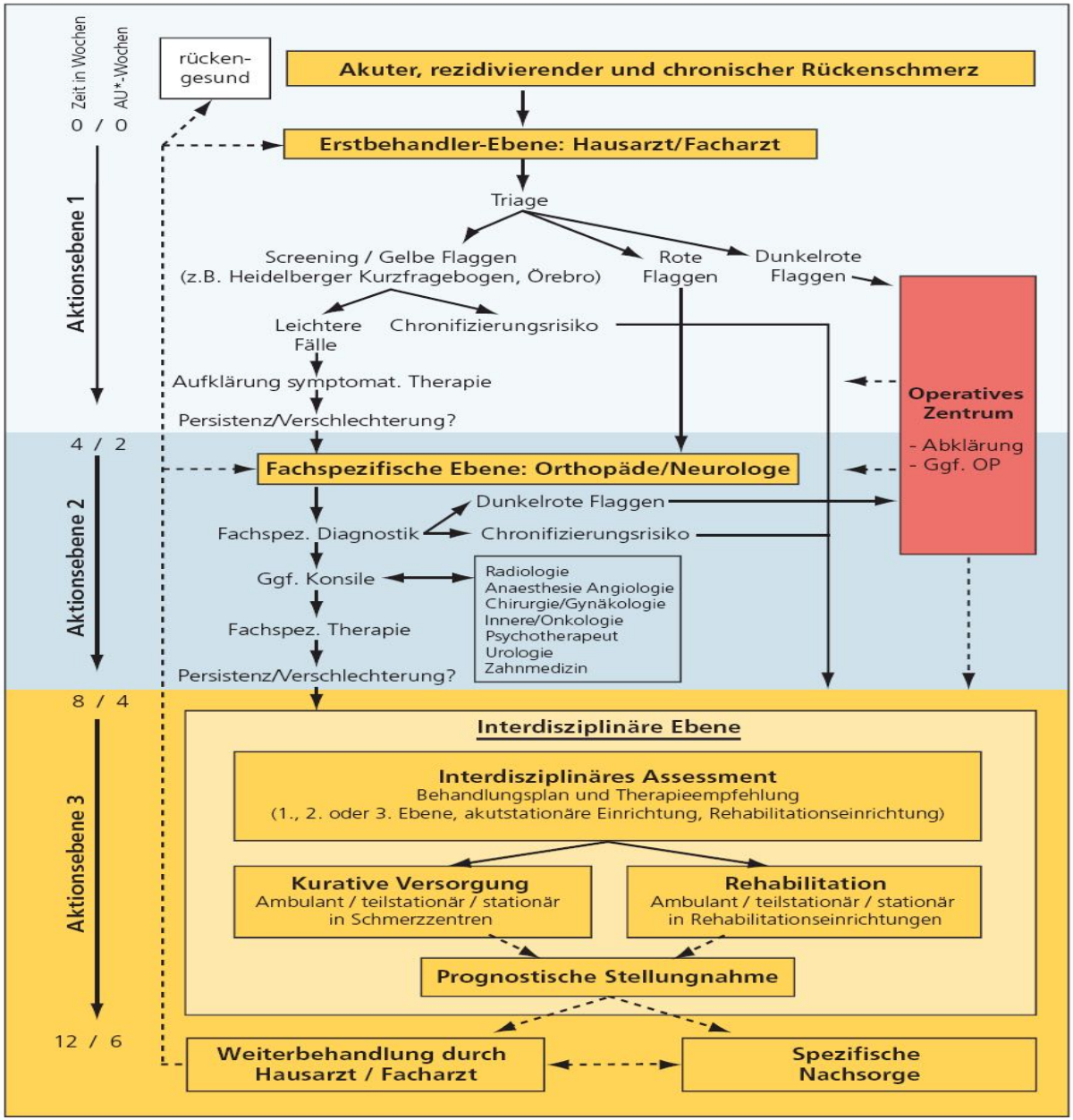
Joint concept

Close integration of time, space and content

Continuous harmonisation during the time of treatment

Joint terminology and philosophy

Supply Network for Back Pain

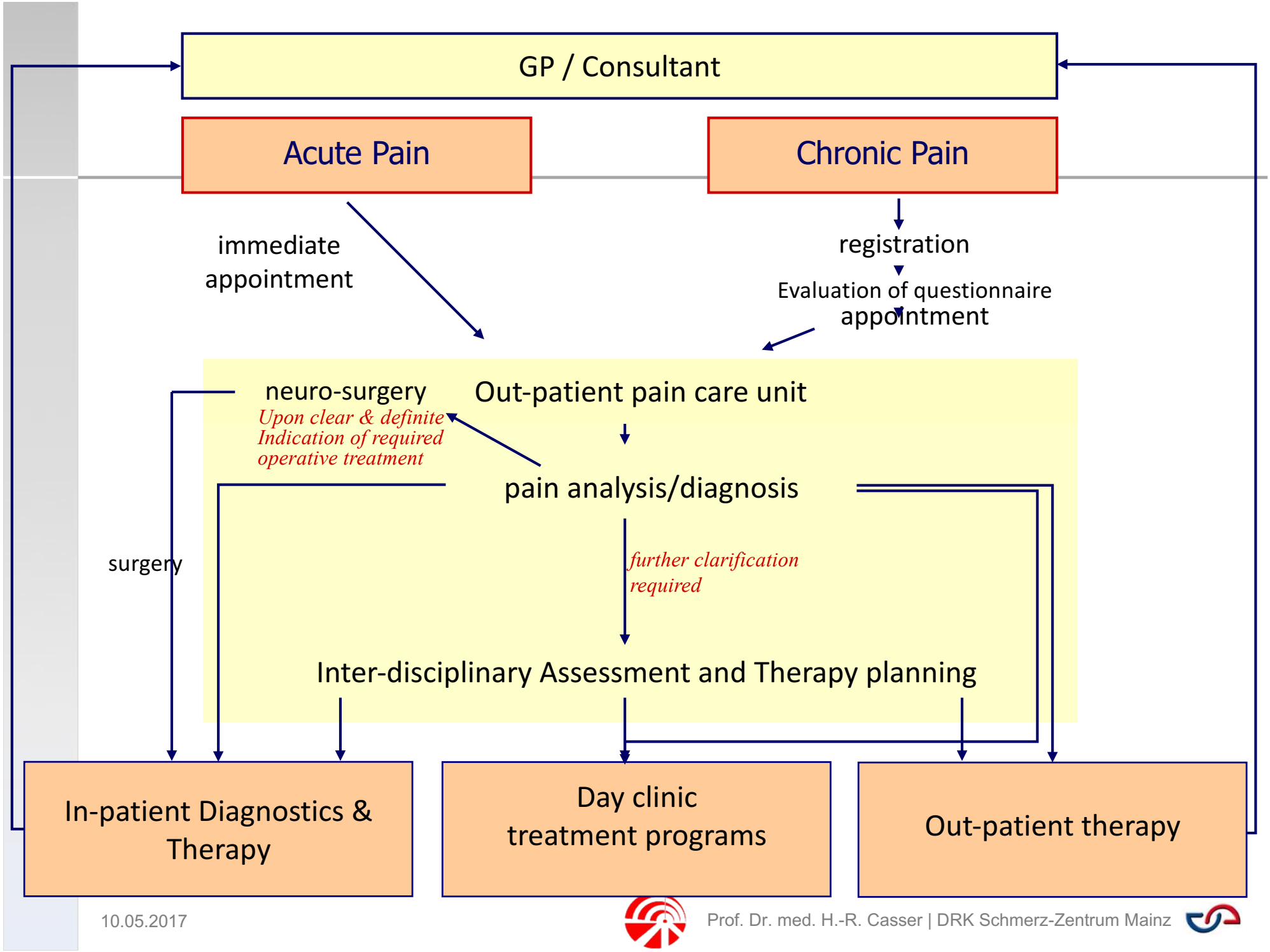


⬅ **Primary Care**

⬅ **Special Care**

⬅ **Interdisciplinary Care**

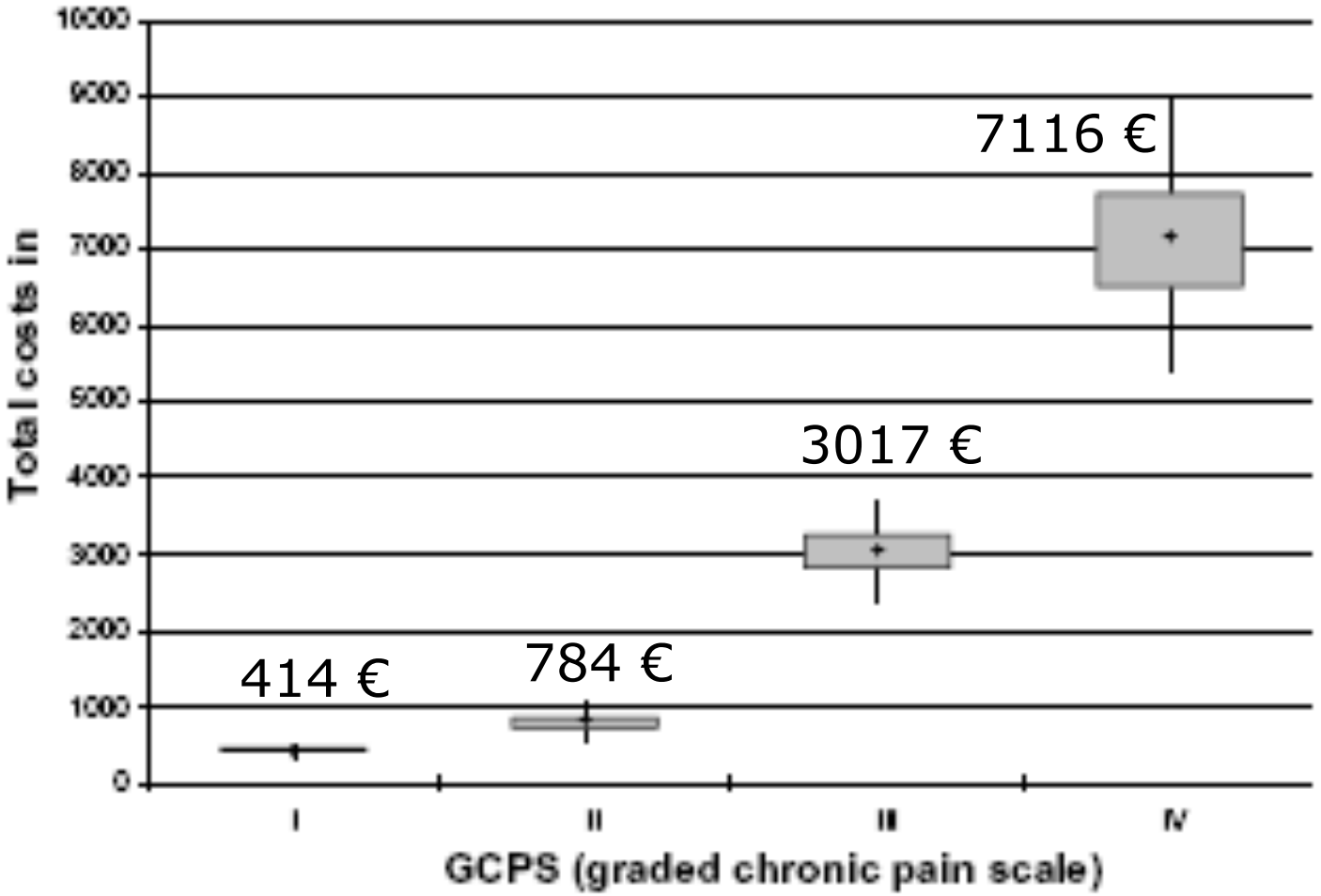
RK Schmerz-Zentrum


GP / Consultant
Acute Pain
Chronic Pain
immediate appointment
registration
Evaluation of questionnaire
appointment
neuro-surgery
Out-patient pain care unit
Upon clear & definite Indication of required operative treatment
pain analysis/diagnosis
surgery
further clarification required
Inter-disciplinary Assessment and Therapy planning
In-patient Diagnostics & Therapy
Day clinic treatment programs
Out-patient therapy

European Journal of Pain xxx (2008) xxx–xxx

Costs of back pain in Germany

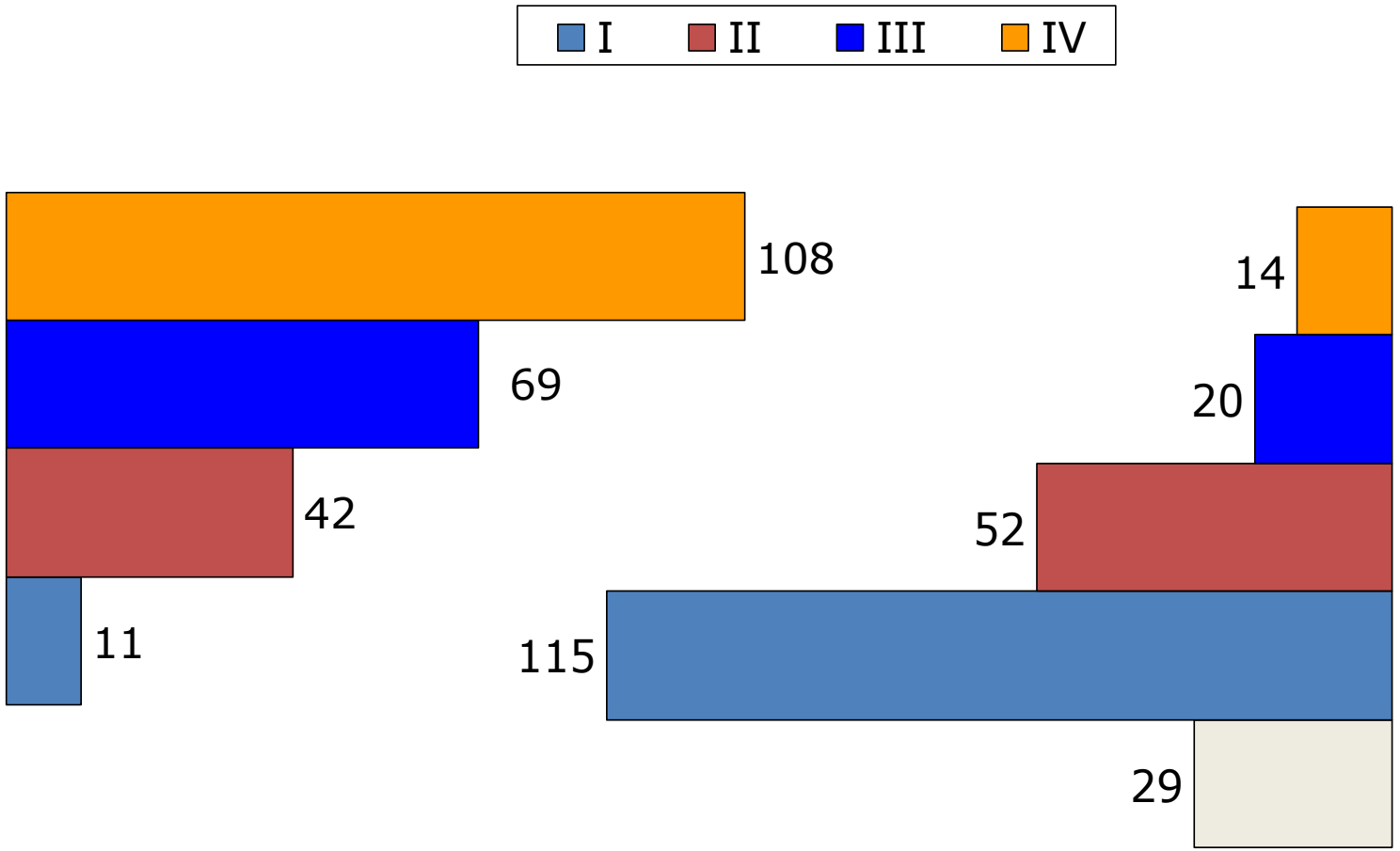
Christina M. Wenig [a,c,*], Carsten O. Schmidt [b], Thomas Kohlmann [b], Bernd Schweikert [c]



Cost efficiency Back Pain Patients 9/01 - 12/06

In-patient unit at the DRK Schmerz-Zentrum Mainz

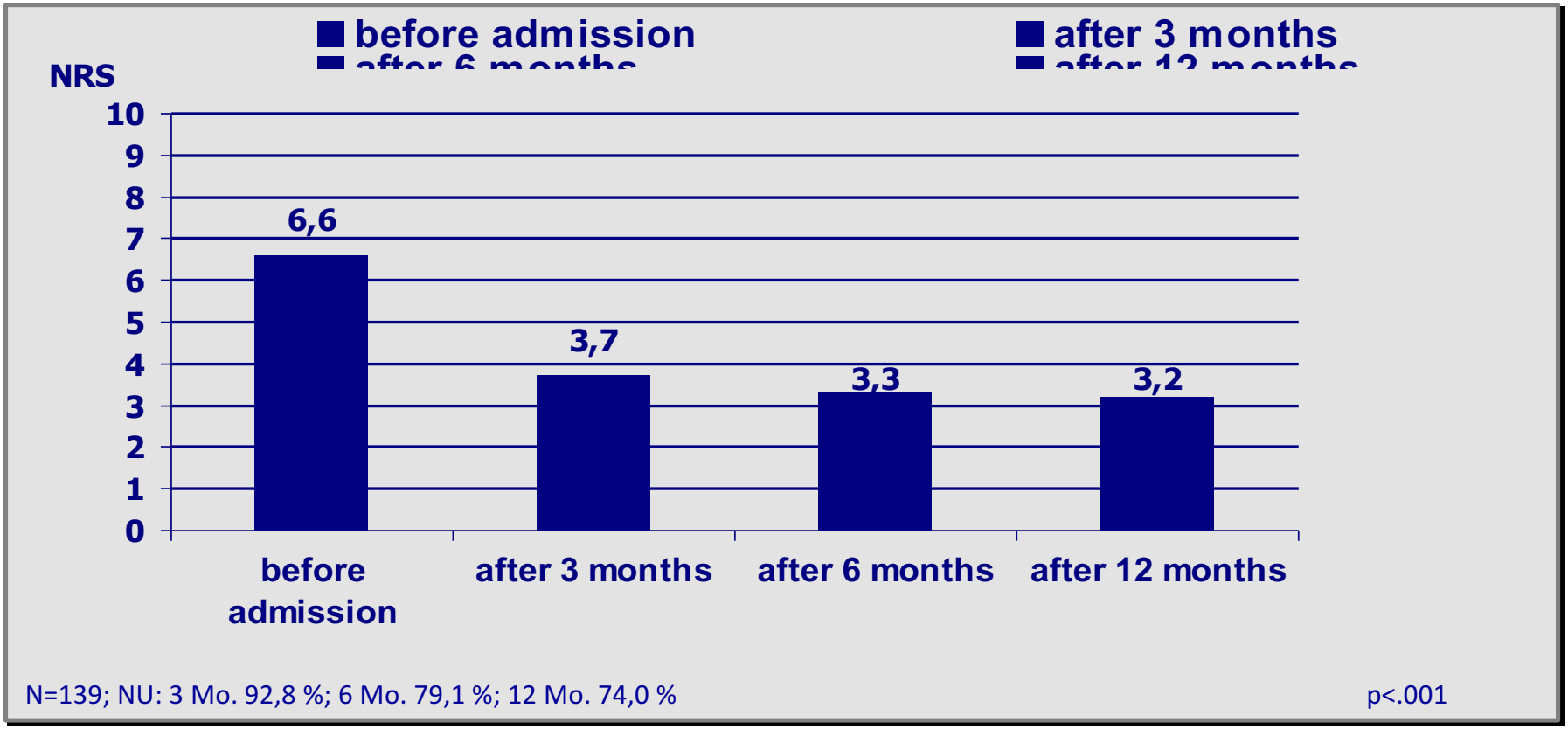
von Korff Severity Scale



B.Nagel, J.Korb (2009) Der Orthopäde 38: 907-912

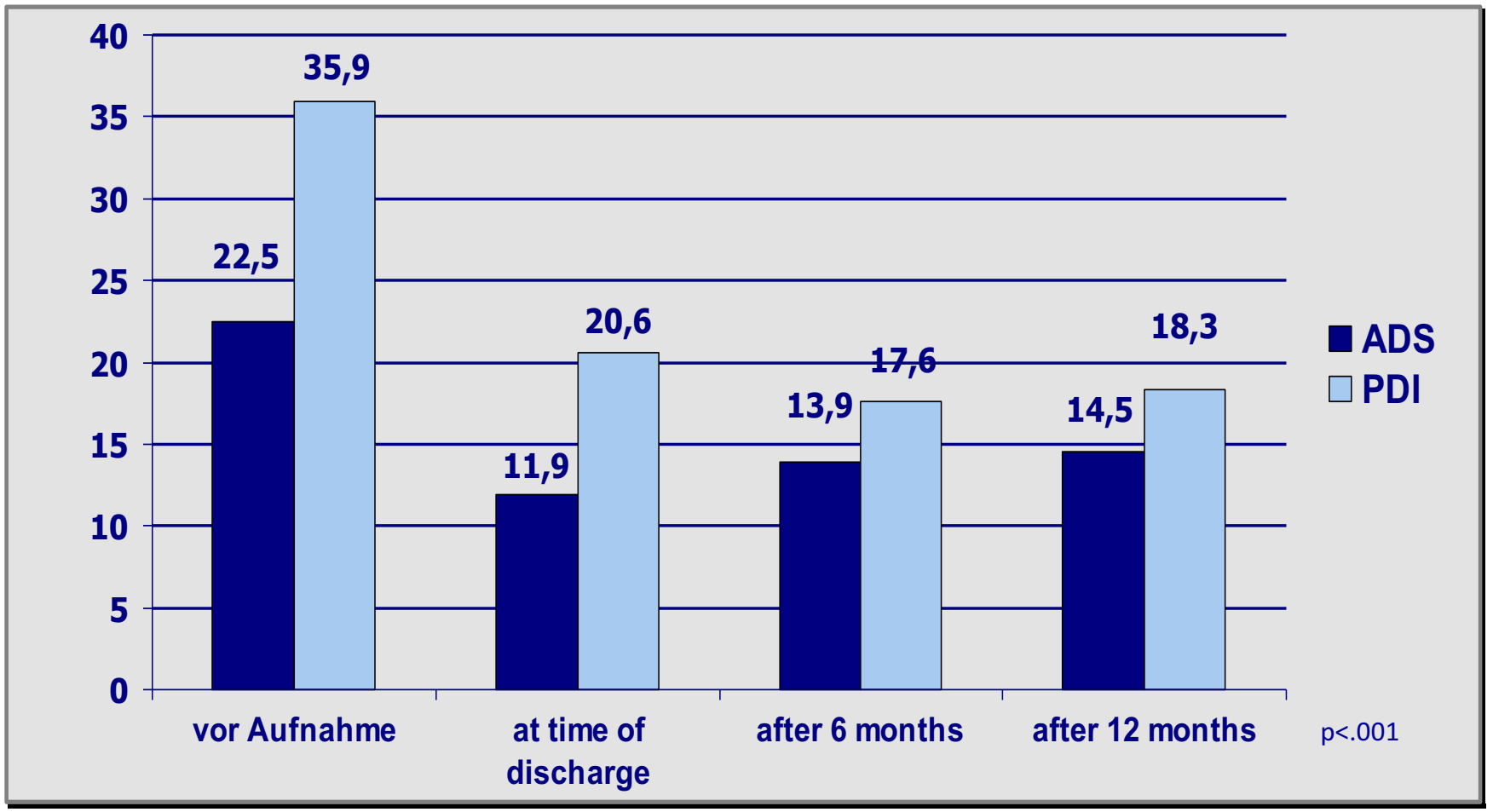
Change in Average Pain Intensity (NRS 0-10)

Back Pain Patients Aug 2001 to Dec 2002,TK



N =3043

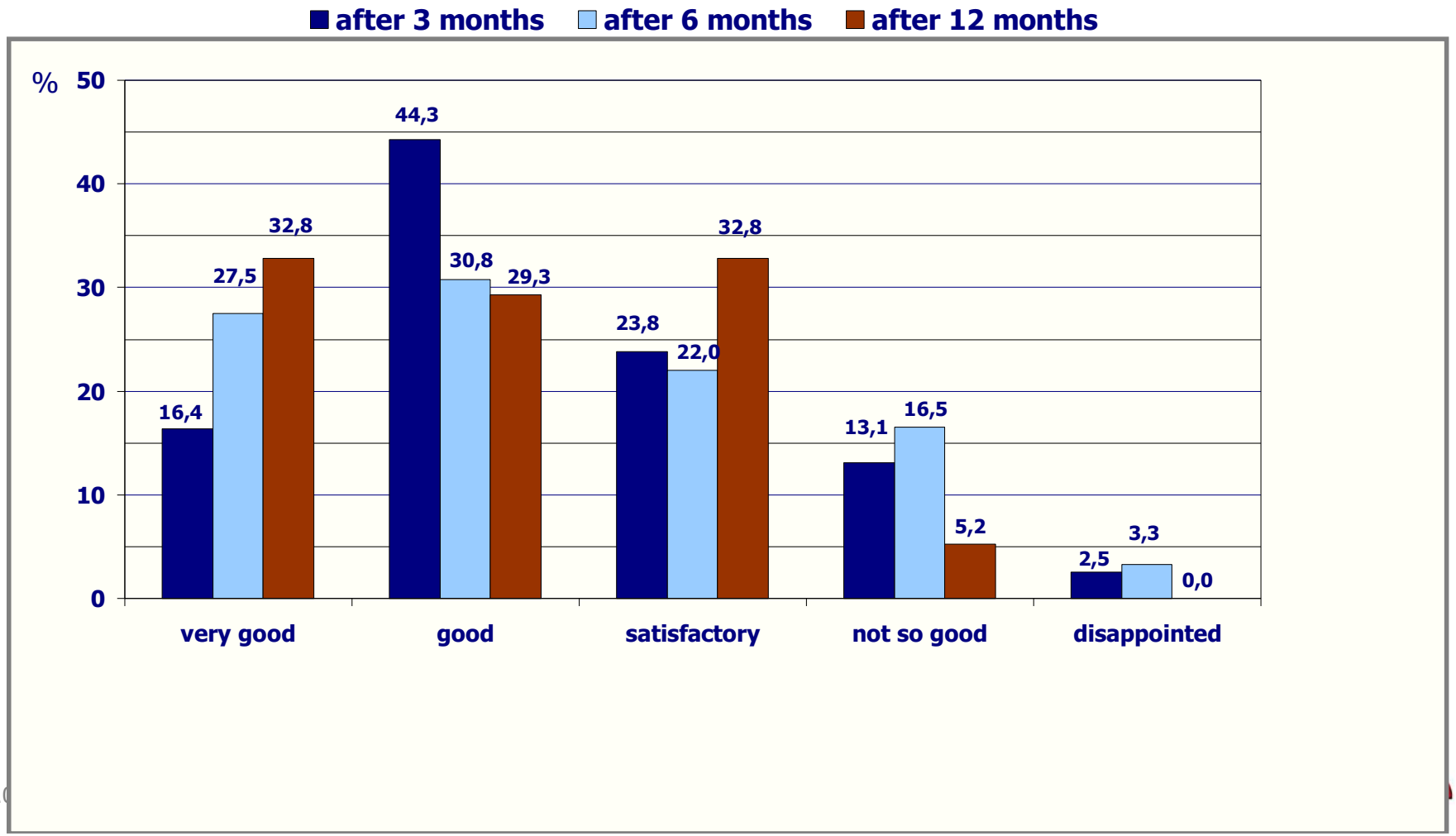
Alteration in Depressive Sensitivity (ADS) and Pain-derived Impairment (PDI)



N =3043

Patients‘ Perception of Therapy Results

Back Pain Patients



European Journal of Pain xxx (2008) xxx–xxx

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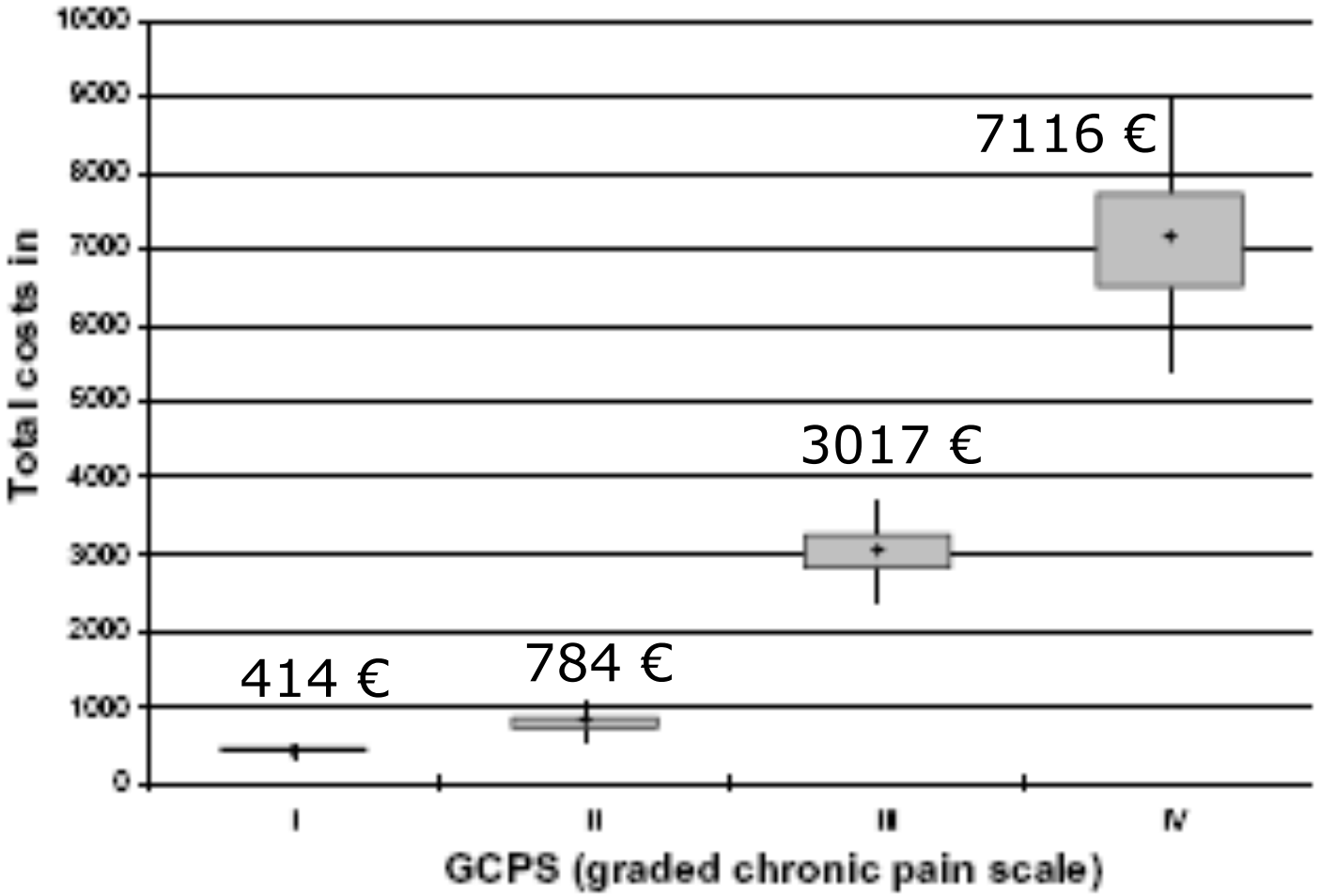

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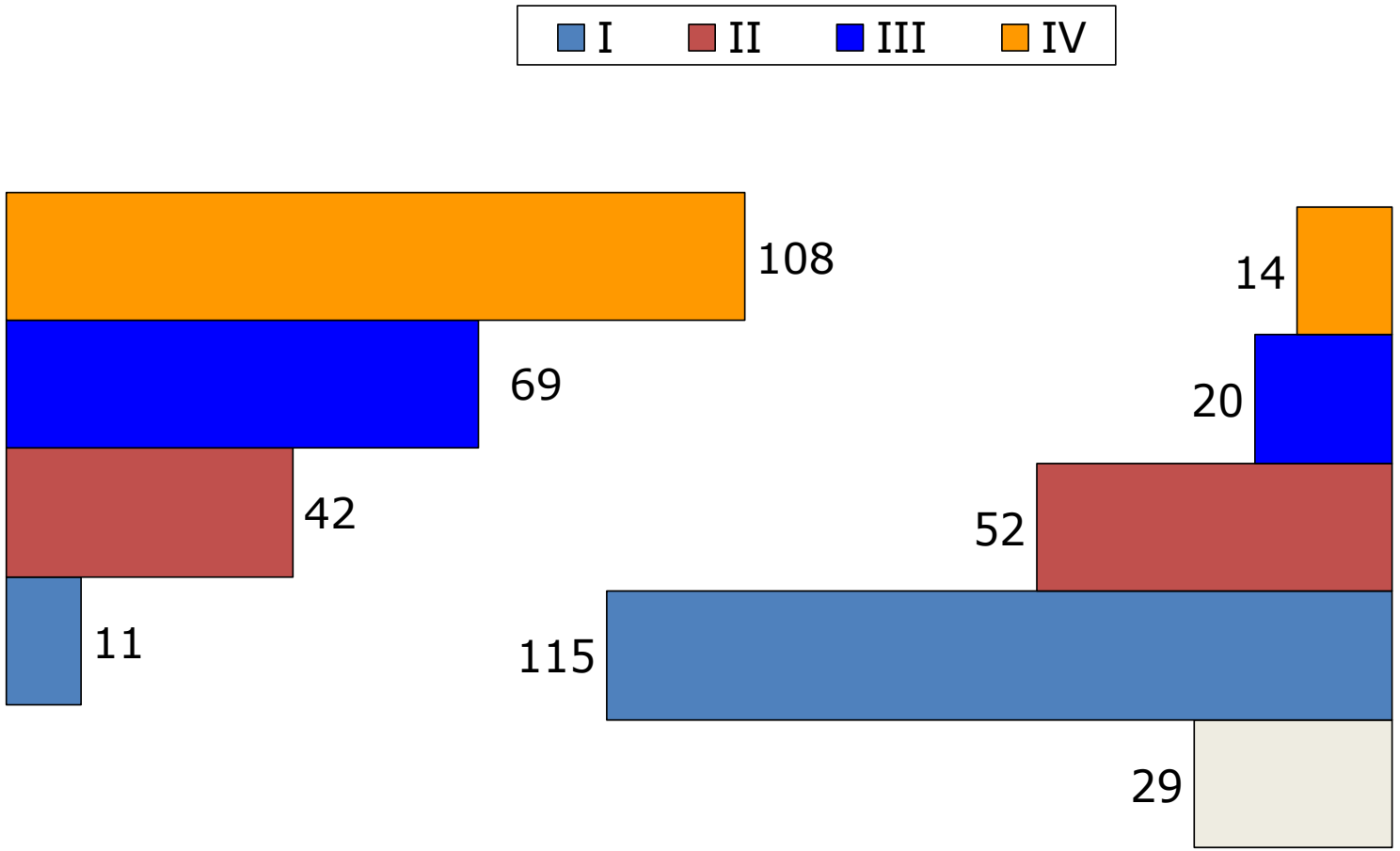


B.Nagel, J.Korb (2009) Der Orthopäde 38: 907-912

H.-R. Casser

Chronic Low Back Pain:
Risk Factors, Differential Diagnostics and Treatment Strategies

ISPO-The 13th World Kongress
10 to 15th of May 2010, Leipzig

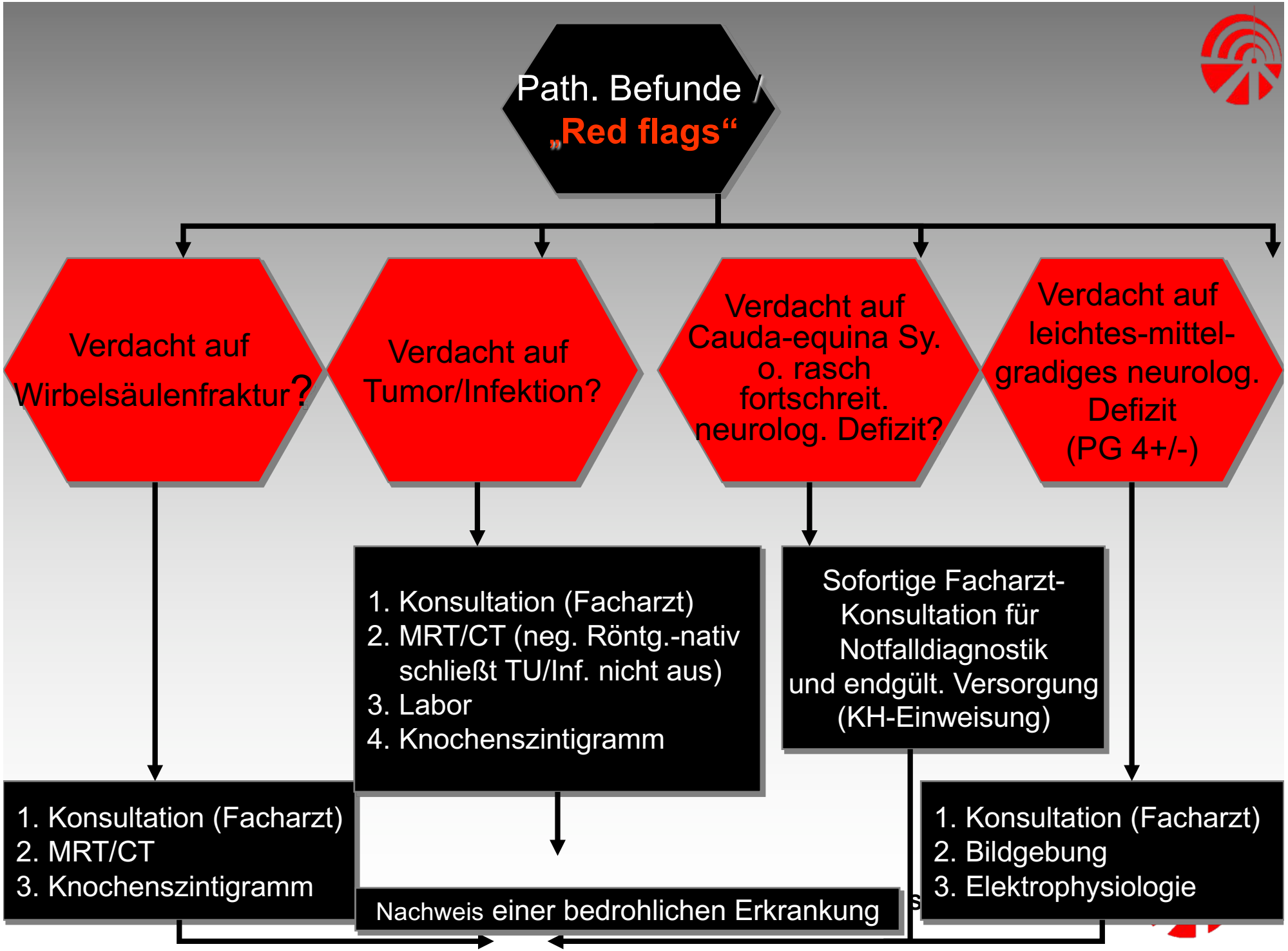
DRK Schmerz-Zentrum

Interdisciplinary Multimodal Therapy:

- **Limitations and Prospects**
  - **Selection of Patients?**
  - **Intensity of Programmes?**
  - **Content & Structure of Programmes?**
  - **Follow-on Treatment/Care?**

** Identification of physical („Red flags“) and psycho-social („Yellow flags“) warning signs

n. Waddell 1998


Path. Befunde / „Red flags“
Verdacht auf Wirbelsäulenfraktur?
Verdacht auf Tumor/Infektion?
Verdacht auf Cauda-equina Sy. o. rasch fortschreit. neurolog. Defizit?
Verdacht auf leichtes-mittel-gradiges neurolog. Defizit (PG 4+/-)
1. Konsultation (Facharzt)
2. MRT/CT
3. Knochenszintigramm
1. Konsultation (Facharzt)
2. MRT/CT (neg. Röntg.-nativ schließt TU/Inf. nicht aus)
3. Labor
4. Knochenszintigramm
Sofortige Facharzt-Konsultation für Notfalldiagnostik und endgült. Versorgung (KH-Einweisung)
1. Konsultation (Facharzt)
2. Bildgebung
3. Elektrophysiologie
Nachweis einer bedrohlichen Erkrankung

Criteria for Indication:

On the somatic level:

- Physical performance capacity is significantly restricted due to pain occurring with structural changes, functional disorders and/or pain-related changes in behaviour
- Signs of neuro-physiological sensitisation
- Generalisation of pain (further pain localisations)
- Increased psycho-physical responsiveness

Criteria for Indication:

On the mental level (cognitive and emotional factors):

- Tendency for Depression: hopelessness, low levels of self-esteem, mental imbalance or instability
- Fear & anxiety: fear of movement, phobic fears, generalised fears
- Somatisation: occurrence in causal connection with emotional conflicts and/or psycho-social problems
- Maladaptive cognitions and coping strategies, such as causal and control attributions, endurance or avoidance strategies

Criteria for Indication:

On the social level (behavioural factors):

- Frequent utilisation of health system facilities, increased times off due to inability to work
- Reduced interest in / neglect of social contacts
- Reduction of social activities both within the closer and extended social environment, as a consequence of the pain-induced restrictions thus experienced
- Interpersonal conflicts within the family and/or in the workplace

Exclusion Criteria:

- Evidence of substance abuse problem complex under the exclusion of maladministration of analgesics
- Evidence of severe psycho-pathology
- The degree of potentially existing mental disorders is likely to present an obstacle for the treatment or for the adherance to formal basic conditions (e.g. beginning of therapy, duration)
- Insufficient physical stamina
- Insufficient linguistic and intellectual abilities
- If latent or manifest secondary morbid gain – Relief of employment, pension or the intention to seek relief assistance – seems irremediable – even following motivating consultations

Structural Quality of the Treatment Facility (IGOST)

- Inter-disciplinary Center (permanently re-certified)
- Offers care & treatment of pain patients as a complete programme, „under one roof“

  or
- Arranges for the inter-disciplinary cooperation among the therapists with the above qualifications, within an explicit contract
- As regards the content and structure of the inter-disciplinary character of the treatment facility, the following criteria must be met :

Interdisciplinary Assessment

Team members

- pain therapists of various disciplines (orthopaedics-rheumatologists, anaesthesists, neurologists, neuro-surgeons)
- psychologists
- physiotherapists
- possibly: including further medical disciplines
- Social workers

Setting

- **joint investigative examination and agreed diagnostic decision**

- **3-5 days in-patient (at times, time-restricted) assessment**

Bio-psycho-social Diagnosis & Therapy Concept

Implementation of the Diagnostics within the OPS 8-918

8-918 Multi-mode Pain Therapy

Note:

In this context, what needs to be coded, is inter-disciplinary diagnostics & treatment of chronic pain patients (incl. tumor pain), covering a period of a minimum of seven days, involving a minimum of 2 specialist disciplines (incl. either a psychiatric, psychosomatic or psychological disciplin), according to diagnostic and treatment-focused schedule under medical supervision. This applies to patients exhibiting a minimum of three of the following characteristics:

- manifest or impending impairment of the specific quality of life and/or unability to work
- failed previous uni-mode pain therapy, a pain-based operative intervention or withdawal therapy
- existing pharmacological dependency or abuse
- severe psychological co-morbidity
- severe somatic co-morbidity

This code necessitates inter-disciplinary diagnostics by a minimum of two specialist disciplines (obligatory: one psychiatric, psychosomatic or psychological discipline), as well as a simultaneous application of three of the following active therapy methods: psychotherapy (behavioral therapy), specialised physiotherapy, relaxation techniqueserfahren, ergotherapy, medical training therapy, sensomotoric training, workplace-focused training, art or music therapy or comporable therapies. It also comprises the assessment ofthe overall treatment history by way of a standardized therapeutic assessment involving inter-disciplinary team meetings.

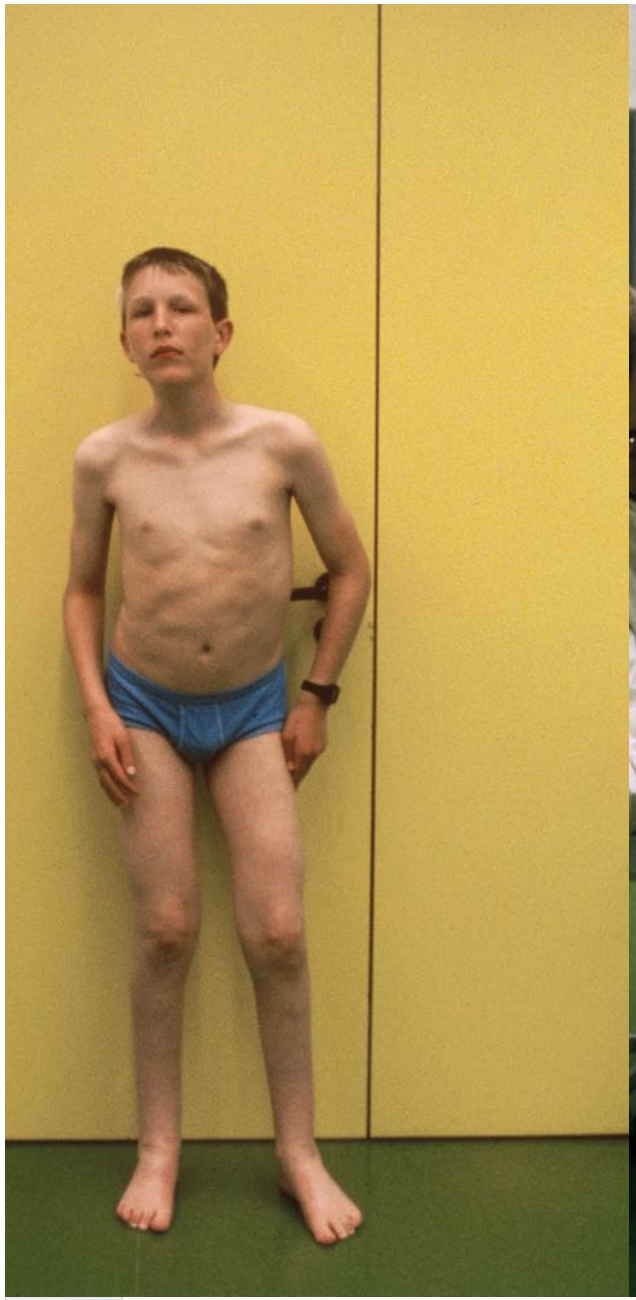
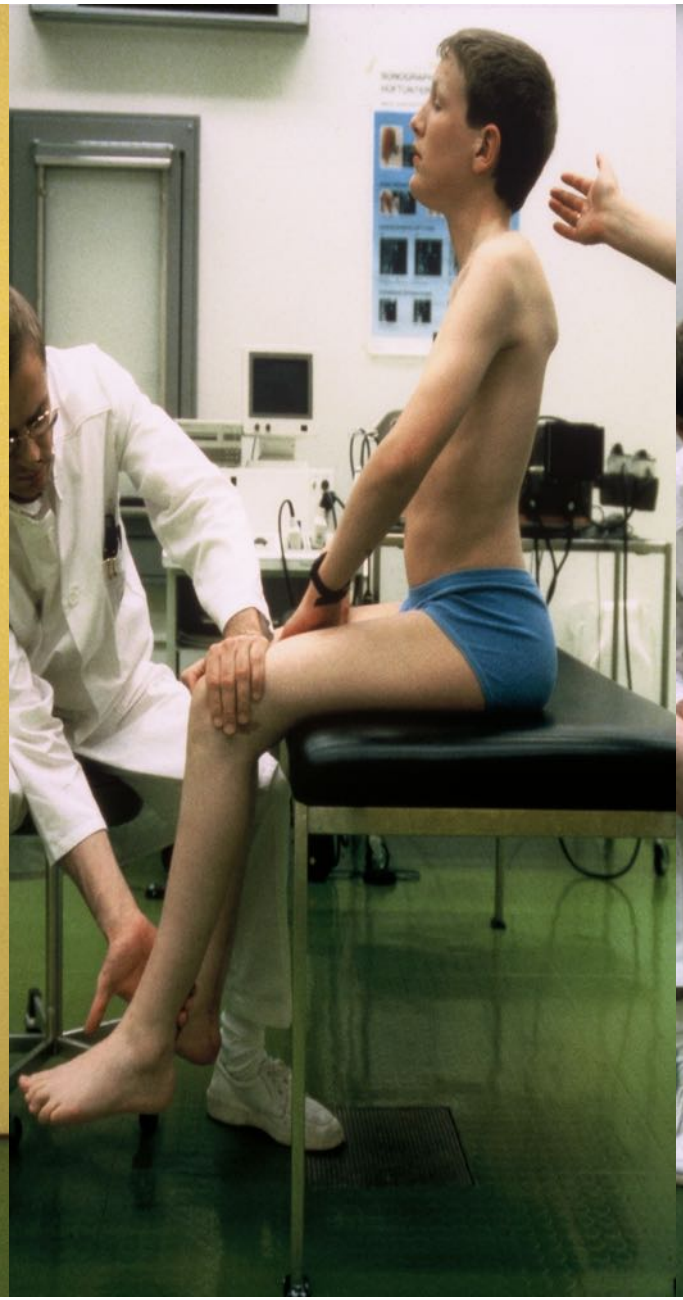
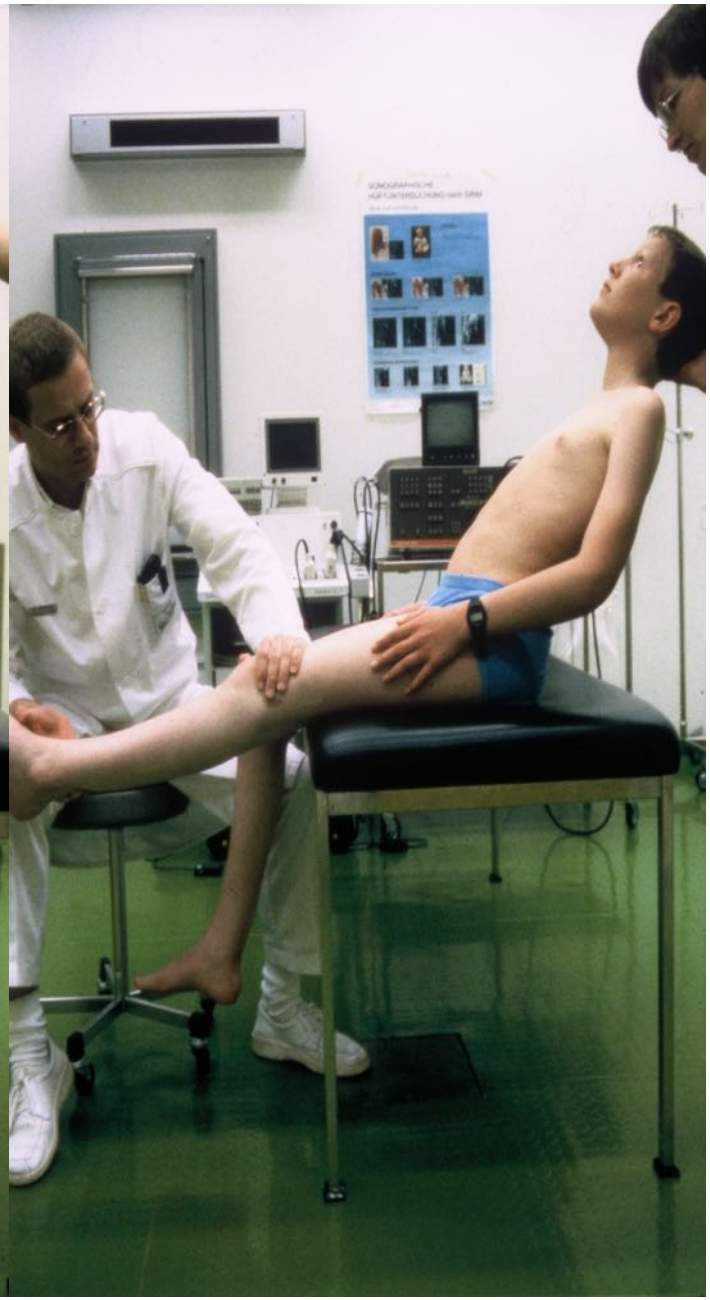
The implementation of this code requires additional qualifications in the field of "Specfic Pain Therapy" on the part of the physician.

Therapy

- **Multi-modal therapy programme, with cognitive and behavioural therapy elements,, consisting of the following components:**
  - **Medical therapy**
  - **Drug therapy and interventional treatment**
  - **Patient training (group instruction)**
  - **Individual and group physiotherapy (physiotherapy exercises, training therapy, kinesitherapy)**
  - **Physical Therapy**
  - **Ergotherapy**
  - **„Work hardening“**
  - **„Psycho“-therapy, cognitive & behavioural therapy (incl. individual & group acquisition of relaxation techniques)**

Rationale for the inclusion of the diagnosis F45.41 in the ICD-10-GM Version 2009

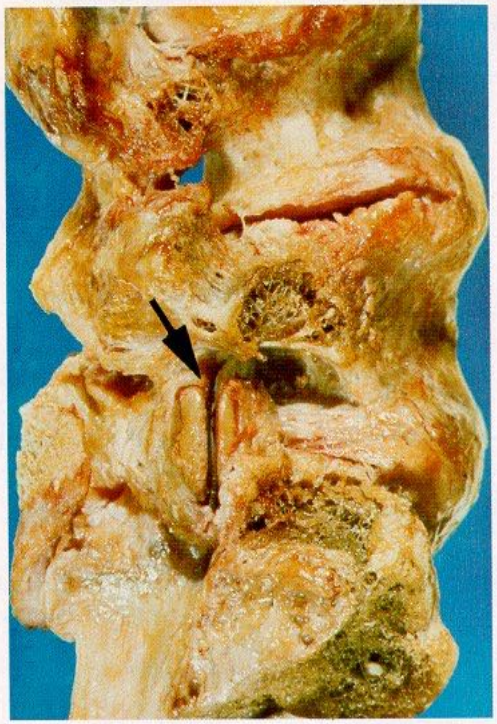
- Chronic pain syndromes are multi-factorial and require a multi-mode therapy concept
- Previous classification for the bio-psycho-social character of chronic pain is inappropriate
- Dichotomisation in psychologically and organically caused pain is inappropriate

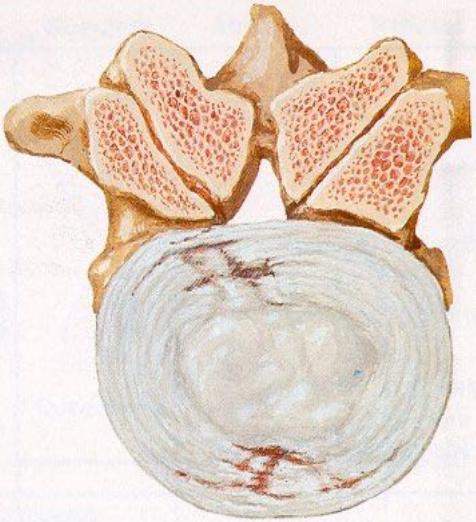
Evidence Based:

- How chronic pain develops and is being maintained due to a complex interaction of physical, psychological and social malfunctions
- Only a thoroughly coordinated therapy program with regard to its content and organisational structure, comprising medical therapy, physiotherapy and psychological components (behavioural therapy) will provide a positive influence on malfunctions

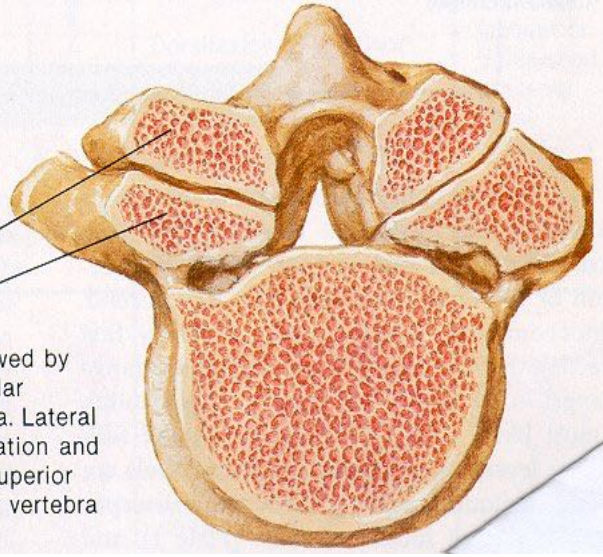
Pathology of Spinal Stenosis



A. Protuberant osteophytes on both facets of lateral spinal articulation



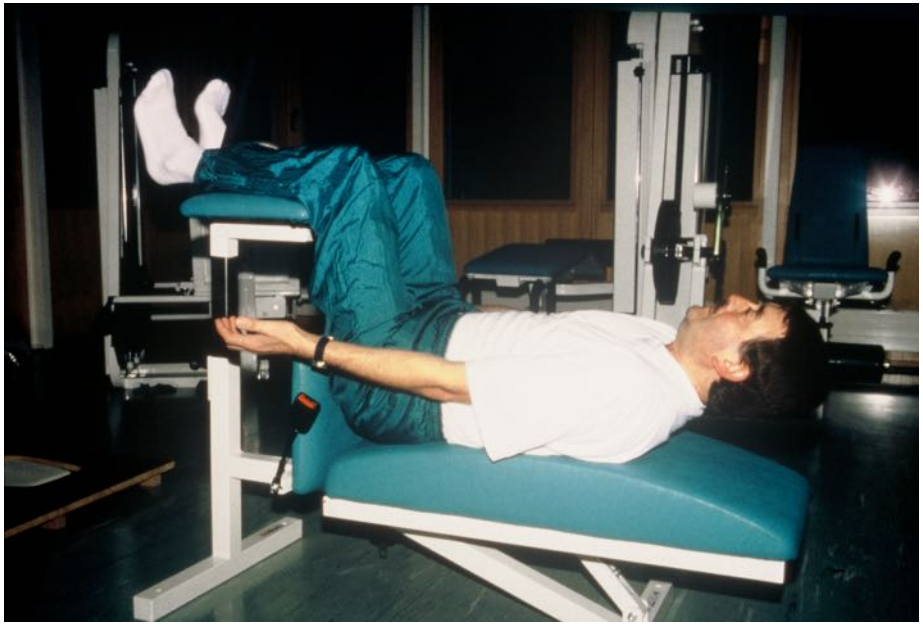
B. Circumferential and radial tears of anulus fibrosus lead to nucleus pulposus herniation



C. Central spinal canal narrowed by enlargement of inferior articular processes of superior vertebra. Lateral recesses narrowed by subluxation and osteophytic enlargement of superior articular processes of inferior vertebra

Objectives of Sport and Physiotherapy for Chronified Pain Patients

- **Increased levels of activity**
- **Reduction of evasive behaviour geared towards rest and avoidance of strain**
- **Increase in control competence**
- **Reduction of anxiety & tendency for depression**



Mayer and Gatchel, 1988

Diagnostics and Assessment

- **Physical examination and functional diagnostics (orthopaedics, manual medicine, neurology)**
- **Assessment of degree of chronification, or its severity (cf. Gerbershagen or von Korff)**
- **Pain inventory (pain questionnaire DGSS)**
- **Psychological exploration (plus – where required – other psychological assessment procedures)**
- **Assessment of motivation for therapy and unfavourable associated factors (e.g. wish to draw pension, poor auto-prognosis, lack of compliance)**

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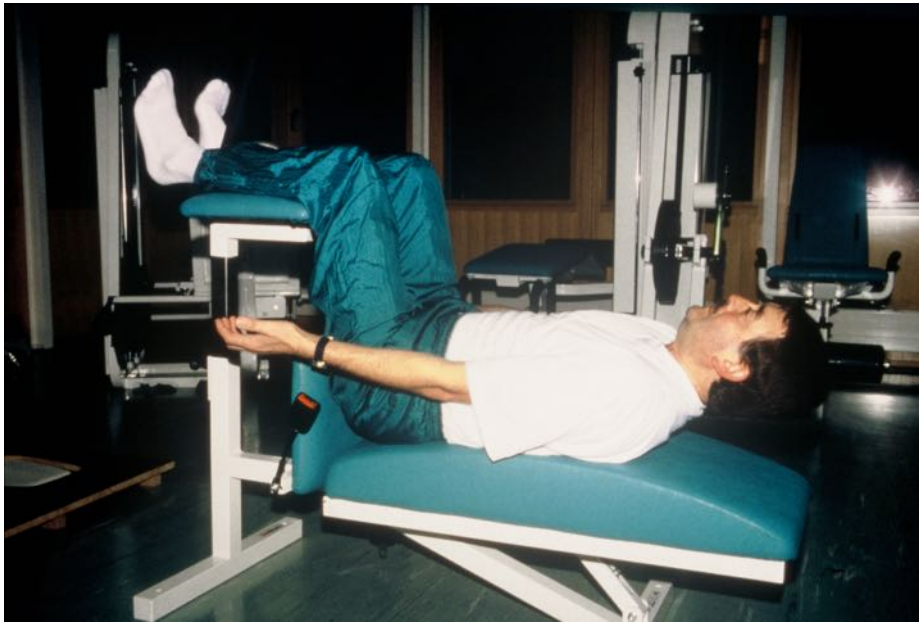

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Indication for Chronic Pain Patients with the Following Characteristics:

- **Increased severity of affliction with significant biological/psychological/social consequences**
- **Failure of previous uni-modal pain therapy, pain-induced surgery/intervention or withdrawal treatment**
- **Pain-induced restrictions of quality of life and general ability to cope with life**
- **Associated somatic or psycho-social afflictions with definite effects on the progress and experience of pain**
- **The mental and social strain is not the result of an independent psychological or cerebral disease**
- **Presence of risk factors for further chronification of pain**

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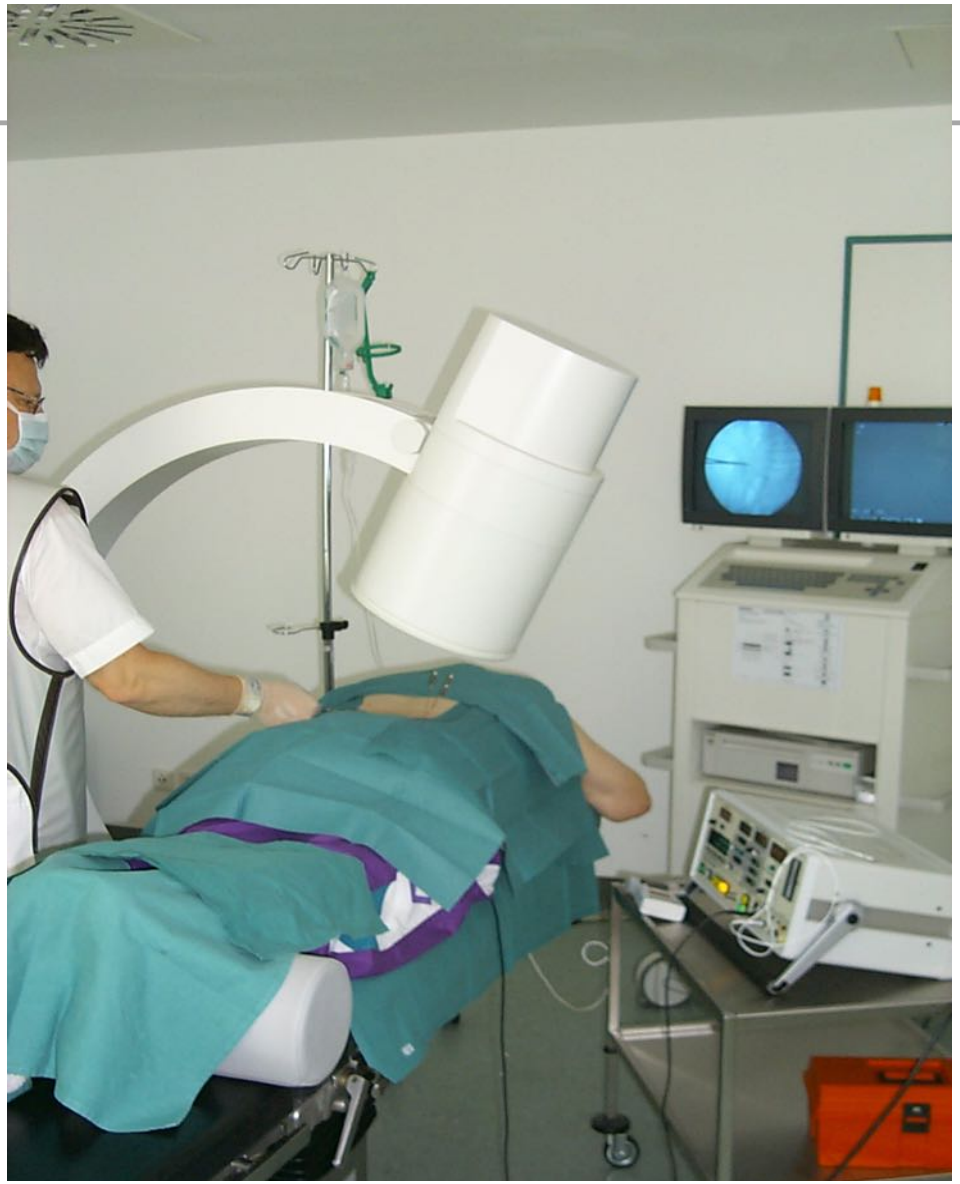

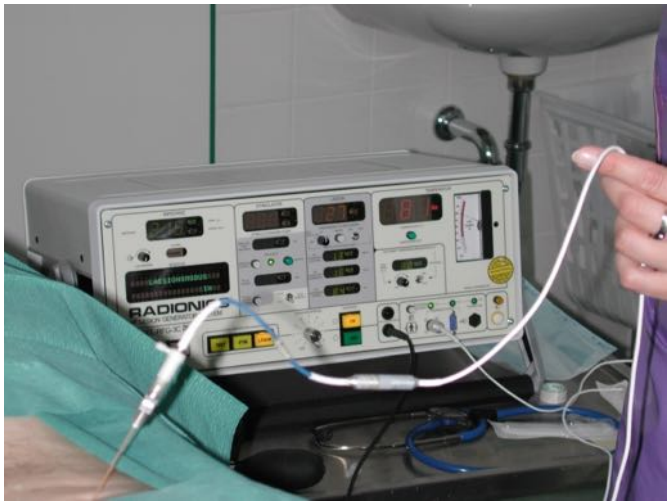
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