



Schweizer
Paraplegiker
Zentrum

Diagnostik von Rückenschmerzen in der Physiotherapie

Die Rolle der Subgruppen-Bildung bei unspezifischen Rückenschmerzen

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Inhalt

- Terminologie Rückenschmerzen
- Epidemiologie Rückenschmerzen
- Spezifische vs. unspezifische Rückenschmerzen
- Subgruppen bei unspezifischen Rückenschmerzen

Zentrale Frage: Braucht es den Begriff unspezifische Rückenschmerzen?

Terminologie

DE Rückenschmerzen

EN Low Back Pain (LBP)

WICHTIG: Symptom



Bild: <https://mipainchicago.com/how-to-treat-lower-back-pain-after-youve-had-back-surgery/>

Epidemiologie

- Ca. 90% der Menschen haben einmal in ihrem Leben LBP (Airaksinen, Brox et al. 2006)
- Ca. 40% der Menschen haben einmal im Jahr LBP (Delitto, George et al. 2012)
- Weltweite Prävalenz: (Hoy, Bain et al. 2012)
Review mit 165 Studien aus 54 Ländern
 - Punktprävalenz = 18.3%
 - Prävalenz in einem Monat = 30.8%
- Mehr betroffen: (Maher, Underwood et al. 2017)
 - Frauen
 - Alter: 40-69 Jahre
 - High-income countries (Median Prävalenz = 30.3%)

Pathophysiologie

- Viele Strukturen welche Schmerzen auslösen
 - Bildgebungen oft nicht sinnvoll wegen
- Beispiele:
- Bandscheibenvorfälle
Beschwerden
 - 32%
auf CT's, MRI's hatten keine
 - «abnormale» Befunde der LWS
 - hatten «abnormale» Bildgebung der LWS

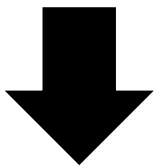
**!!!!!! → Meistens KEINE BEKANNTE
PATHOANATOMISCHE/PATHOPHYSIOLOGISCHE Zuordnung möglich !!!!!!**

(Delitto, George et al. 2012)

Rückenschmerz Klassifikation

SPEZIFISCHE LBP 5 - 10%

KLARE MEDIZINISCHE
BEFUNDE



TRIAGE

UNSPECIFISCHE LBP 90-95%

(O'Sullivan 2005) (Airaksinen, Brox et al. 2006) (Delitto, George et al. 2012) (Maher, Underwood et al. 2017)

Rückenschmerz Klassifikation

(Maher, Underwood et al. 2017)

SPEZIFISCHE LBP 5 - 10% - Triage

	Alerting clinical features	Initial diagnostic work-up
Cancer	NICE guidance advises investigation for myeloma in people aged 60 years or older with persistent bone pain (particularly back pain) or unexplained fracture and investigation for pancreatic cancer in people aged 60 years or older with back pain and weight loss. ⁴³ The most common causes of bony metastases are breast, lung, and prostate cancer. Together, these cancers account for 68% of bony metastases, ⁴³ including spine. Other tumours, including renal and gastric cancer, can also metastasise to the spine and spinal metastases can be the first presentation of cancer. We were unable to find good epidemiological data for the incidence of new-onset spinal metastases after apparently successful treatment for cancer	For strong suspicion of cancer: FBC, ESR, CRP; MRI ⁴³ For lower suspicion of cancer defer work-up until a trial of therapy has been completed
Vertebral infection	New onset of low back pain with fever and history of intravenous drug use or recent infection, immunosuppression, recent spinal procedure or fever/chills in addition to pain with rest or at night. Consider spinal tuberculosis in endemic areas or in migrants from these areas	FBC, ESR, CRP; MRI ⁴³ Urgent referral for specialist care
Cauda equina syndrome	New bowel or bladder dysfunction, saddle anaesthesia, persistent or increasing lower motor neuron weakness	MRI and CT Urgent referral to spine surgeon
Vertebral compression fracture	History of osteoporosis, use of glucocorticoids, significant trauma, or older age (>65 years for women or >75 years for men)	Radiography (if negative result and there is continuing clinical suspicion consider MRI) ⁴³
Axial spondyloarthritis	Consider axial spondyloarthritis in patients with chronic back pain (duration ≥ 3 months) with back pain onset before 45 years of age if one or more of the following are present: (1) inflammatory back pain*; (2) peripheral manifestations (in particular arthritis, enthesitis, and/or dactylitis); (3) extra-articular manifestation (psoriasis, inflammatory bowel disease, and/or uveitis); (4) positive family history of spondyloarthritis; and (5) good response to non-steroidal anti-inflammatory drugs	For strong suspicion of axial spondyloarthritis refer to a rheumatologist. If unsure, defer work-up until a trial of therapy has been completed. If no response, and suspicion remains, refer to a rheumatologist
Radicular pain or radiculopathy (previously called sciatica)	Back pain with leg pain in an L4, L5, or S1 nerve root distribution, positive result on straight leg raise or crossed straight leg raise test. The sensitivity and specificity of these tests is mixed. ⁴⁴ Sensory loss, weakness, or reduced reflex (ie, evidence of radiculopathy)	Defer work-up until a trial of therapy has been completed; consider MRI in patients who are candidates for surgery
Spinal canal stenosis	Bilateral buttock, thigh, or leg pain; older age; pseudoclaudication	Defer work-up until a trial of therapy has been completed; consider MRI in patients who are candidates for surgery

NICE=National Institute for Health and Care Excellence. FBC=full blood count. ESR=erythrocyte sedimentation rate. CRP=C-reactive protein. *At least four of (1) age at onset 40 years or younger; (2) insidious onset; (3) improvement with exercise; (4) no improvement with rest; and (5) pain at night (with improvement upon getting up).⁴⁵

Table 1: Identification of specific disorders that can present as low back pain³⁷⁻⁴⁰

Rückenschmerz Klassifikation

SPEZIFISCHE LBP 5 - 10%

**KLARE MEDIZINISCHE
BEFUNDE**

UNSPEZIFISCHE LBP 90-95%



(O'Sullivan 2005) (Airaksinen, Brox et al. 2006) (Delitto, George et al. 2012) (Maher, Underwood et al. 2017)

Unspezifische Rückenschmerzen



Unspezifische Rückenschmerzen

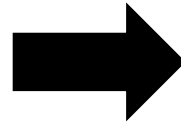


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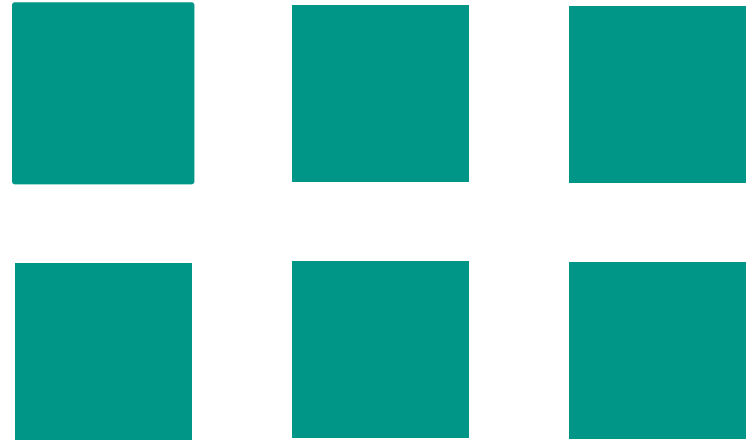
UNSPECIFISCH
≠
UNERKLÄRLICH

Unspezifische Rückenschmerzen - Subgruppen

**UNSPECIFISCHE
LBP 90-95%**



Subgruppen



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Unspezifische Rückenschmerzen - Subgruppen

CLINICAL GUIDELINES

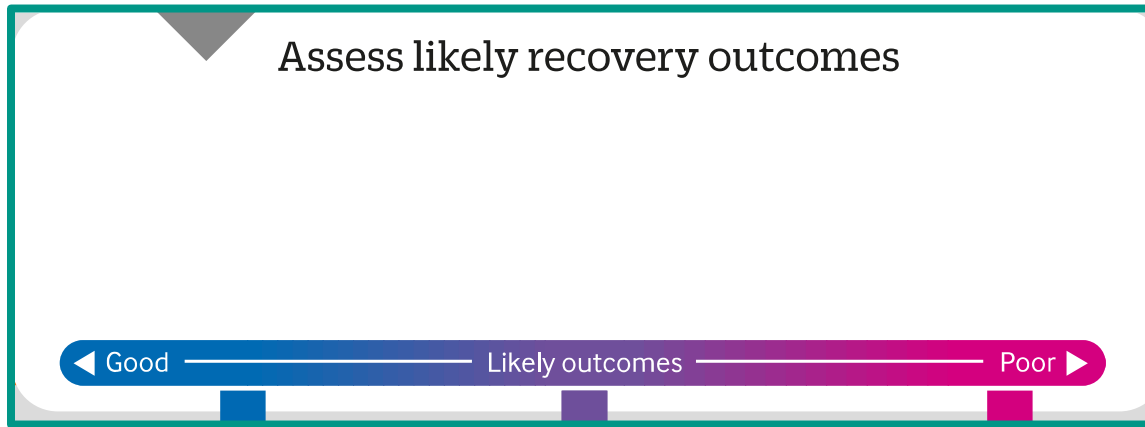
ANTHONY DELITTO, PT, PhD • STEVEN Z. GEORGE, PT, PhD • LINDA VAN DILLEN, PT, PhD • JULIE M. WHITMAN, PT, DSc
GWENDOLYN SOWA, MD, PhD • PAUL SHEKELLE, MD, PhD • THOMAS R. DENNINGER, DPT • JOSEPH J. GODGES, DPT, MA

Low Back Pain

*Clinical Practice Guidelines Linked to the
International Classification of Functioning,
Disability, and Health from the Orthopaedic Section
of the American Physical Therapy Association*

J Orthop Sports Phys Ther. 2012;42(4):A1-A57. doi:10.2519/jospt.2012.42.4.A1

Unspezifische Rückenschmerzen - Subgruppen



Unspezifische Rückenschmerzen - Subgruppen



PATHOPHYSIOLOGICAL NON-SPECIFIC



PATHOLOGY IS UNCLEAR IN ~90% OF BACK PAIN PATIENTS

Nevertheless, back pain in at least 90% of patients cannot be attributed to any specific pathology [6]. As a consequence, diagnostic labels are descriptive in nature, e.g. 'Low back pain, unspecified' (ME.84.02 in the ICD-11). In many research studies, the description is equally vague (e.g. 'non-specific low back pain').



PATIENT ASSESSMENT ALLOWS BROAD PATHOPHYSIOLOGICAL CATEGORIZATION

Not all mechanisms are currently known nor can they necessarily be assessed in humans. Nevertheless, broad pathophysiological categories can, at least partly, already be inferred at this point from patient assessment.

Like anywhere in the body, pain in the back can be ascribed to three fundamental pathophysiological categories: nociceptive, neuropathic and nociplastic pain [4], which are not mutually exclusive.

ASSESSMENT

ROUTINE CLINICAL ASSESSMENTS and ADDITIONAL ASSESSMENTS TO BETTER UNDERSTAND THE MECHANISM OF PAIN

History taking/ clinical exam Pain drawings Questionnaires



PATHOLOGY IS UNCLEAR IN ~90% OF BACK PAIN PATIENTS

Nevertheless, back pain in at least 90% of patients cannot be attributed to any specific pathology [6]. As a consequence, diagnostic labels are descriptive in nature, e.g. 'Low back pain, unspecified' (ME.84.02 in the ICD-11). In many research studies, the description is equally vague (e.g. 'non-specific low back pain').



THIS LARGE PROPORTION IS UNLIKELY A HOMOGENOUS GROUP

It is highly unlikely that this large category of patients constitutes a similarly unified category as e.g. the autoimmune disorder ankylosing spondylitis. The important question becomes which pathophysiological mechanisms contribute to back pain in this category and how such mechanisms can be identified when assessing individual patients.

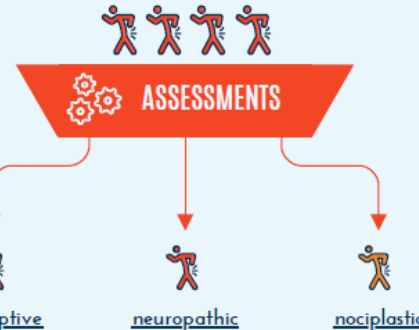


PATIENT ASSESSMENT ALLOWS BROAD PATHOPHYSIOLOGICAL CATEGORIZATION

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ASSESSMENT SUMMARY



YEAR ABOUT
BACK PAIN

ASP®



Unspezifische Rückenschmerzen - Subgruppen

UNSPECIFISCHE
LBP 90-95%

**Bewegungskontroll-
dysfunktion der LWS**

pen



...

Subgruppe: Bewegungskontrolldysfunktion der LWS

SPEZIFISCHE LBP 5 - 10%



KLARE MEDIZINISCHE BEFUNDE:

- Frakturen
- Tumore
- Anomalien
- Nervenwurzelaffektionen
- Spinalkanalstenose

UNSPECIFISCHE LBP 90%

NICHT MECHANISCH

MECHANISCH

**„zentrale maladaptive
Schmerzen“
30%**

**Bewegungs-
abhängig
30%**

**Haltungs-
abhängig
30%**

(O'Sullivan 2005)

Subgruppe: Bewegungskontrolldysfunktion der LWS

BMC Musculoskeletal Disorders



Research article

Open Access

Reliability of movement control tests in the lumbar spine

Hannu Luomajoki*^{1,2}, Jan Kool³, Eling D de Bruin^{4,5} and Olavi Airaksinen^{2,6}

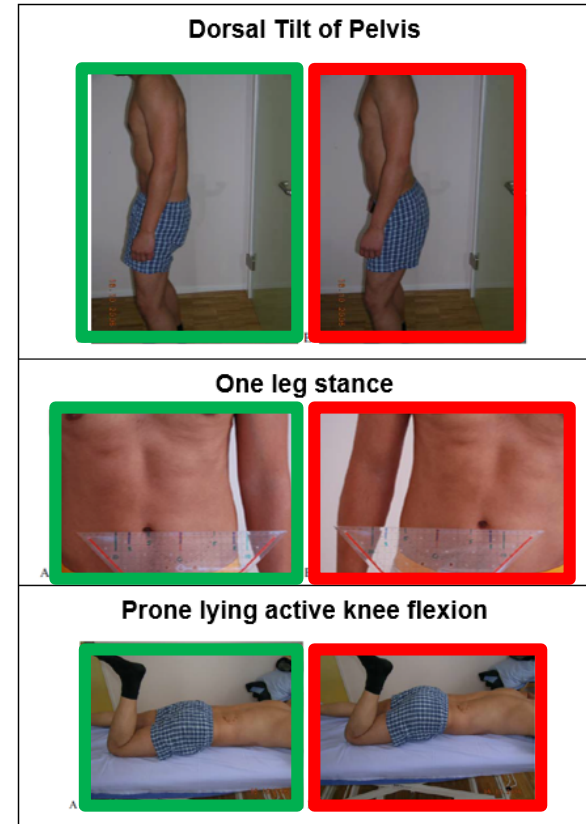
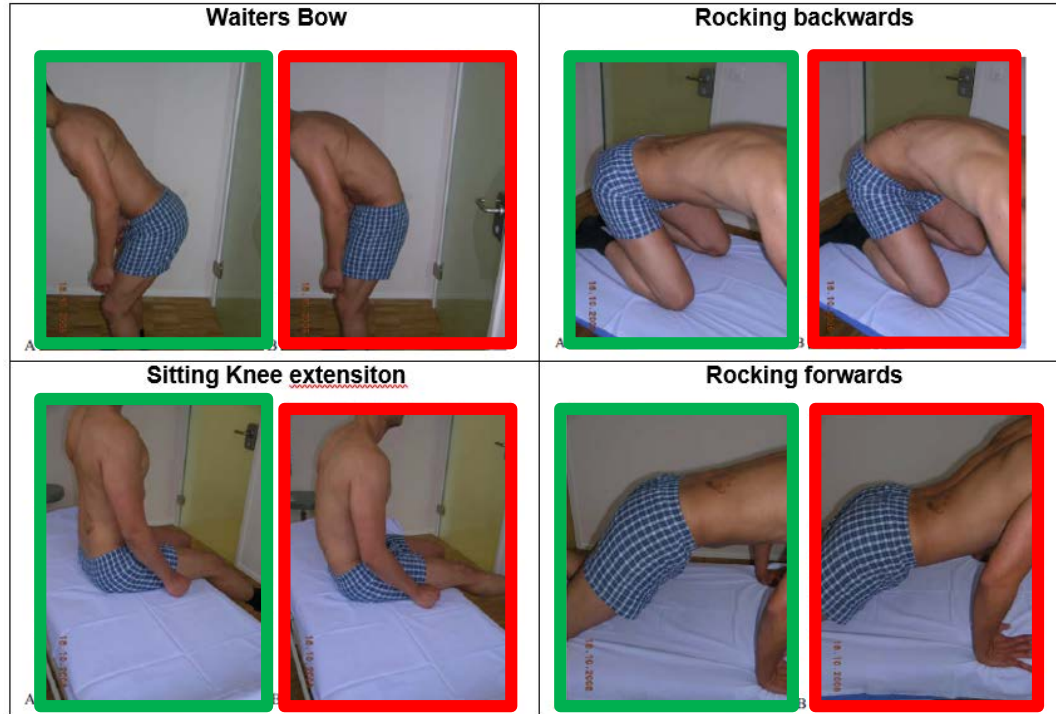
Address: ¹Physiotherapie Reinach, 5734 Reinach, Switzerland, ²University of Kuopio, Kuopio, Finland, ³Institute of Physiotherapy, Department of Health, Zürich University of Applied Sciences, Winterthur, Switzerland, ⁴Department of Rheumatology and Institute of Physical Medicine, University Hospital Zürich, Switzerland, ⁵Institute of Human Movement Sciences and Sport, ETH Zürich, Switzerland and ⁶Department of Physical and Rehabilitation Medicine, University Hospital of Kuopio, Finland

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* Corresponding author

- Bewegungskontrolldysfunktion: ↓Wahrnehmung & Kontrolle der LWS
- Überprüfung durch Testbatterie von 6 Tests: bei ≥ 2 Tests +, dann auffällig
- Gute diskriminative Validität: Rückenschmerzen vs. Keine Rückenschmerzen (Luomajoki, Kool et al. 2008)
- Gute inter- und intra-tester Reliabilität (Luomajoki, Kool et al. 2007)

Subgruppe: Bewegungskontrolldysfunktion der LWS



Bilder aus Luomajoki, Kool et al. 2008

Subgruppe: Bewegungskontrolldysfunktion der LWS



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Contents lists available at ScienceDirect

Musculoskeletal Science and Practice

journal homepage: www.elsevier.com/locate/mksp



Review article

Effectiveness of movement control exercise on patients with non-specific low back pain and movement control impairment: A systematic review and meta-analysis



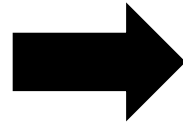
Hannu Antero Luomajoki^{a,*}, Maria Beatriz Bonet Beltran^a, Silvia Careddu^{a,b},
Christoph Michael Bauer^{a,c}

TAKE HOME MESSAGE:

- Therapie gemäss Subgruppe zeigt bessere Werte bezüglich «Disability» kurzzeitig und langfristig (Luomajoki, Bonet Beltran et al. 2018)
- Therapie gemäss Subgruppe ergibt bessere Outcome bezüglich Schmerzintensität zumindest kurzfristig (Luomajoki, Bonet Beltran et al. 2018)
- Subgruppierung lohnt sich weil einfach & praktikabel

Unspezifische Rückenschmerzen - Subgruppen

**UNSPECIFISCHE
LBP 90-95%**

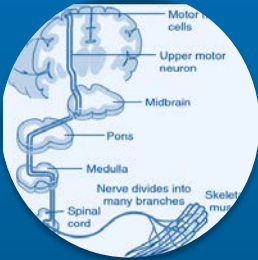


Klinische Instabilität

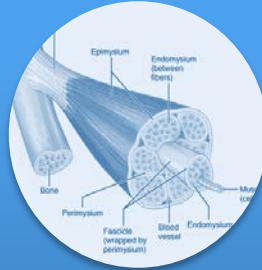
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Subgruppe: Klinische Instabilität

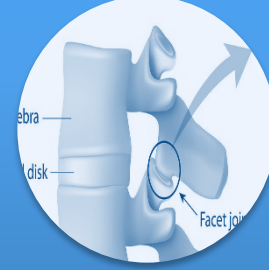
STABILITÄT



Neurales Kontrollsystem



Aktives System



Passives System

(Panjabi 1992)

Subgruppe: Klinische Instabilität



(Panjabi 1992)

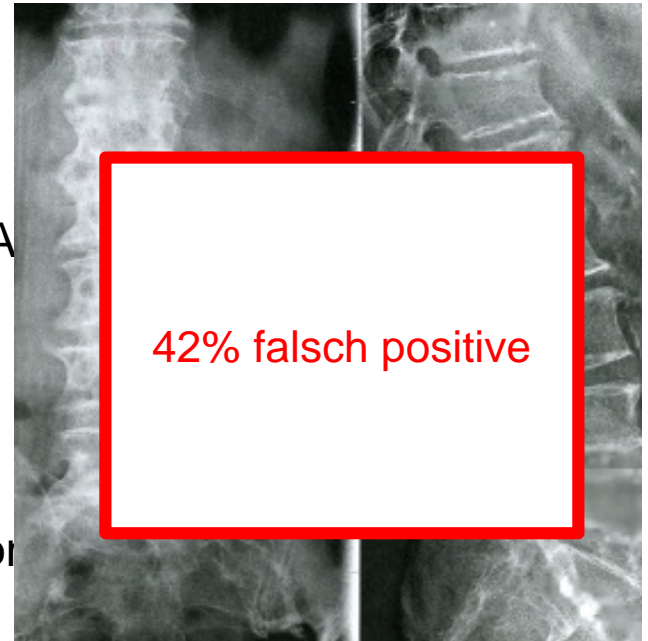
Subgruppe: Klinische Instabilität

- Ursprünglich über Bildgebung
(Hayes, Howard et al. 1989)(Hicks, Fritz et al. 2005)
- Klinische Test: wie z.B. Prone Instability Test → CA
klar
(Hicks, Fritz et al. 2005)

Heutige Annahme:

Klinische Instabilität \neq biomechanisches Konstrukt sondern
Empfinden

- hoher Konsens unter Experten, dass es gemeinsame Grundmerkmale gibt
(Cook, Brismée et al. 2006)

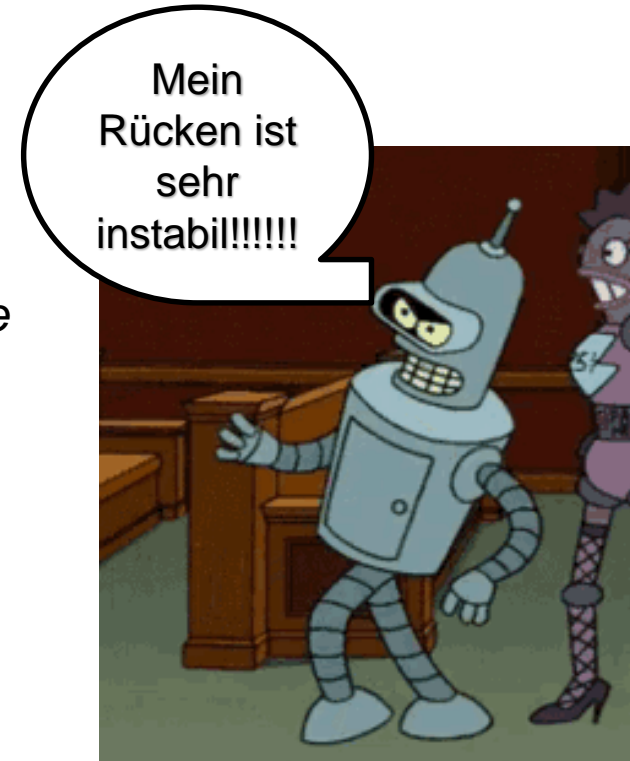


Subgruppe: Klinische Instabilität

- Stark herabgebrochen könnte man sagen:
«Klinische Instabilität ist bei jenen vorhanden, welche sich instabil fühlen!»
- Fragebogen (LSIQ) leider nicht aussagekräftig
(Sarajotto, Maher et al. 2018)

aber...

- Empfehlung: Auf Aussagen in Anamnese achten:
Beispiele
 - «Ich habe das Gefühl, dass mein Rücken bricht oder nicht hält»
 - «Ich habe häufig das Bedürfnis meinen Rücken knacken zu lassen»
 - «Eine Rückenstütze oder ein Korsett helfen mir gegen die Schmerzen»



Subgruppe: Klinische Instabilität

Predicting Response to Motor Control Exercises and Graded Activity for Patients With Low Back Pain: Preplanned Secondary Analysis of a Randomized Controlled Trial

Luciana Gazzì Macedo, Christopher G. Maher, Mark J. Hancock, Steve J. Kamper, James H. McAuley, Tasha R. Stanton, Ryan Stafford, Paul W. Hodges

TAKE HOME MESSAGE:

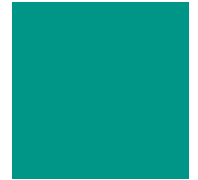
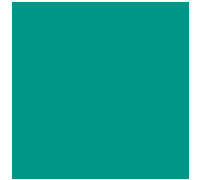
- Klinische Instabilität eher ein subjektives Empfinden, KEIN biomechanisches Konzept
- Jene die sich instabil fühlen, profitieren am meisten von Stabilisationsübungen (Macedo, Maher et al. 2014)

Unspezifische Rückenschmerzen - Subgruppen

UNSPECIFISCHE
LBP 90-95%

Vermeider vs.
Durchhalter

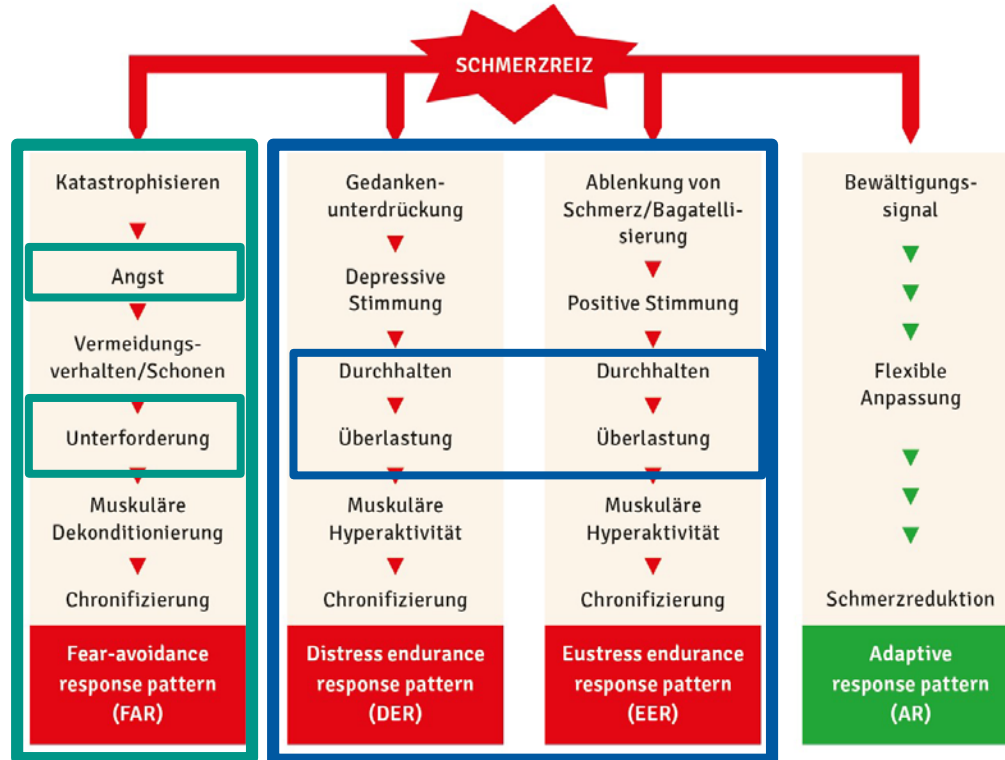
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Subgruppe: «Vermeider» – «Durchhalter»

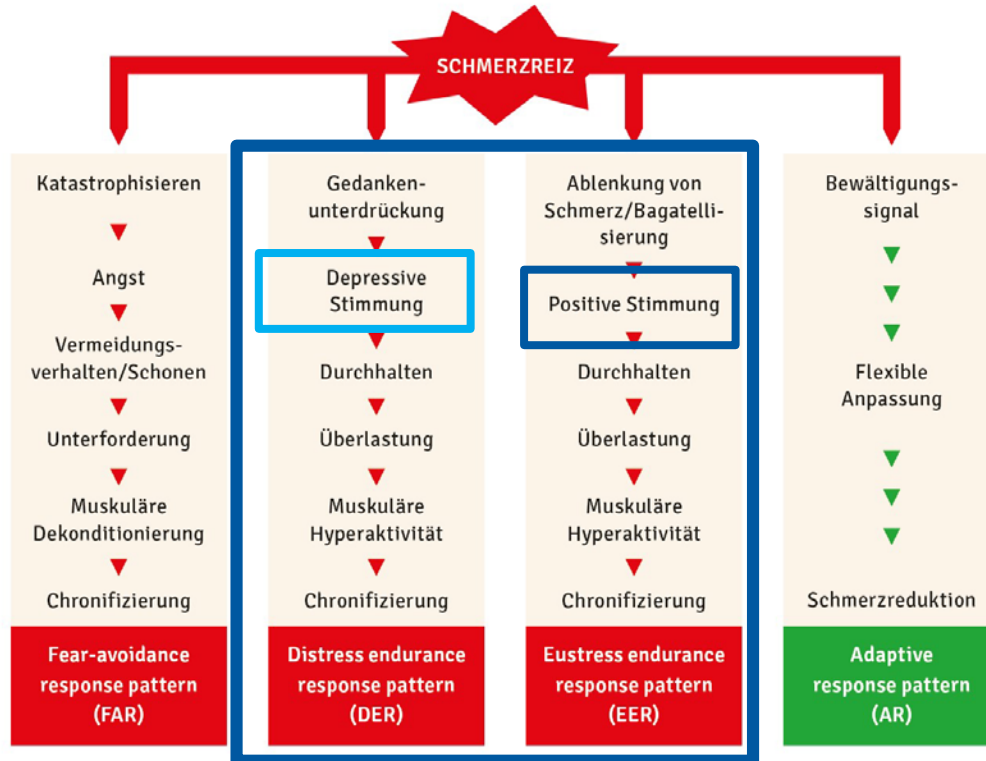
- Individueller Umgang mit Schmerz spielt eine entscheidende Rolle für Schmerzfreiheit vs. Chronifizierung → Maladaptive Antworten auf Schmerz:
 - **VERMEIDUNG** → Fear-Avoidance Modell
(Lethem, Slade et al. 1983) (Vlaeyen and Linton 2000)
 - **DURCHHALTEN** → Ignorieren, exzessive Aktivität
(Rosenstiel and Keefe 1983) (Jensen, Turner et al. 1995)
- Avoidance –Endurance Modell
(Hasenbring 2000) (Hasenbring, Hallner et al. 2009) (Hasenbring and Verbunt 2010)

Avoidance-Endurance Unterteilung



(Hasenbring and Verbunt 2010)

Avoidance-Endurance Unterteilung



(Hasenbring and Verbunt 2010)

Subgruppe: «Vermeider» – «Durchhalter»

Disability
and
Rehabilitation

An international, multidisciplinary journal

<http://informahealthcare.com/dre>
ISSN 0963-8288 print/ISSN 1464-5165 online

Disabil Rehabil, 2014; 36(9): 749-755
© 2014 Informa UK Ltd. DOI: 10.3109/09638288.2013.814723

informa
healthcare

RESEARCH PAPER

Physical activity and low back pain: the role of subgroups based on the avoidance-endurance model

Heike Plaas¹, Sigrid Sudhaus¹, Roland Willburger², and Monika I. Hasenbring¹



PAIN® 153 (2012) 211-217

PAIN®

www.elsevier.com/locate/pain

Pain-related avoidance versus endurance in primary care patients with subacute back pain: Psychological characteristics and outcome at a 6-month follow-up

Monika I. Hasenbring^{a,*}, Dirk Hallner^a, Bernhard Klasen^b, Irmgard Streitlein-Böhme^c, Roland Willburger^d, Herbert Rusche^c

→ Avoidance-Endurance Modell und Unterscheidung liegt auch bei Rückenschmerzpatienten vor

Subgruppe: «Vermeider» – «Durchhalter»

HAUPTAUSSAGEN

(Plaas, Sudhaus et al. 2014) (Hasenbring, Hallner et al. 2012)

- Zusammenhang Rückenschmerzpatienten und körperliche Aktivität

	+ ↑	- ↓
Vermeider (FAR)	Schmerzintensität, Kinesiophobie, Angst/Depression, Liegezeiten	Aktivität
Überforderer (DER) «Distress»	körperliche Aktivität (objektiv) Schmerzintensität, Angst/Depression	Subjektiv empfundenes Aktivitätsniveau
Überforderer (EER) «Eustress»	körperliche Aktivität Schmerzintensität	Disability/Einschränkung

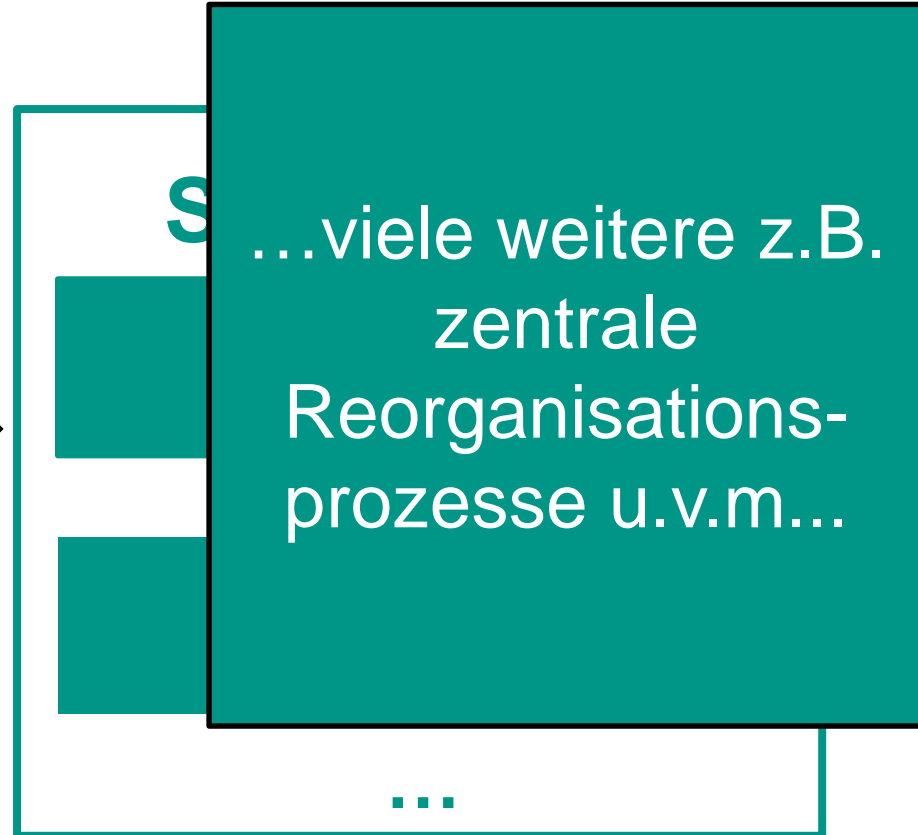
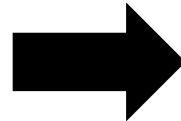
Subgruppe: «Vermeider» – «Durchhalter»

TAKE HOME MESSAGE:

- Avoidance-Endurance Modell bei Rückenschmerzpatienten bestätigt → unterschiedlicher Umgang mit Schmerzen hat einen Einfluss auf objektive aber auch subjektiv empfundene körperliche Aktivität
- Subgruppierung würde Sinn machen für besseres Coaching und bessere Führung des Patienten

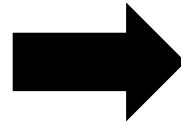
Unspezifische Rückenschmerzen - Subgruppen

**UNSPECIFISCHE
LBP 90-95%**

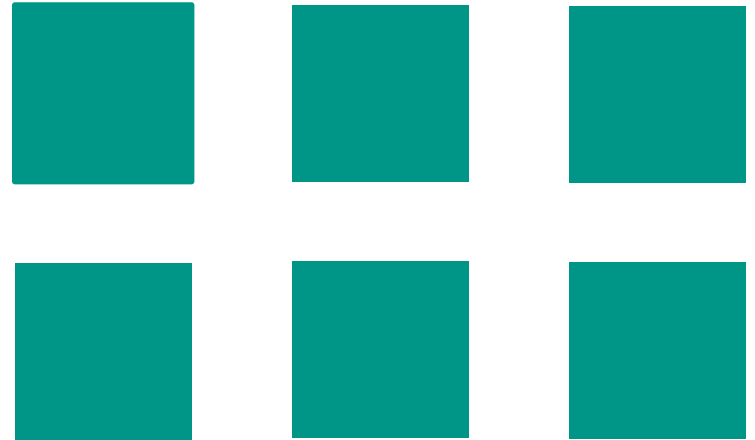


Unspezifische Rückenschmerzen - Subgruppen

**UNSPECIFISCHE
LBP 90-95%**

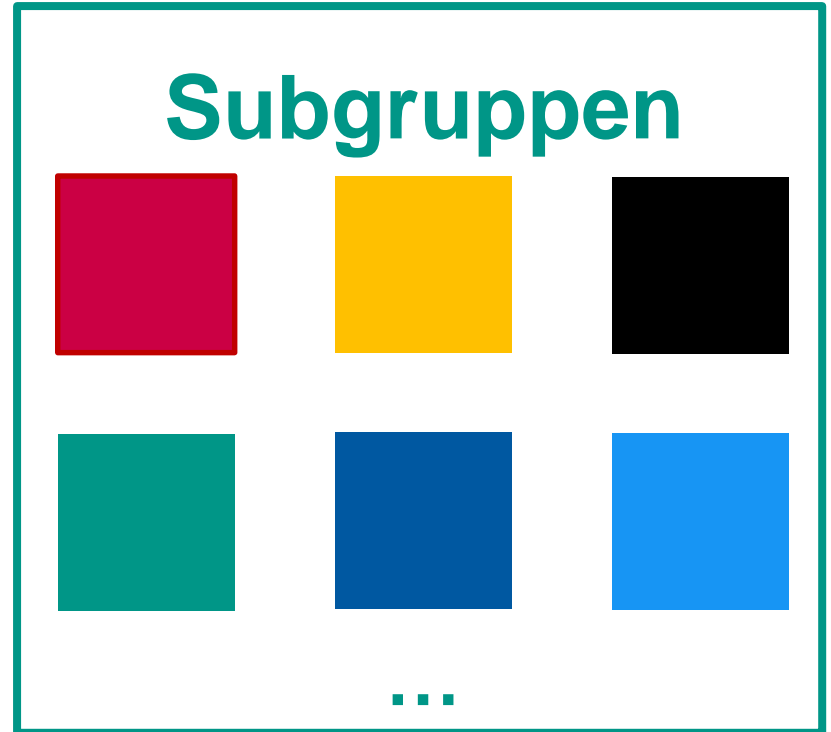
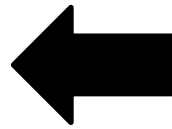
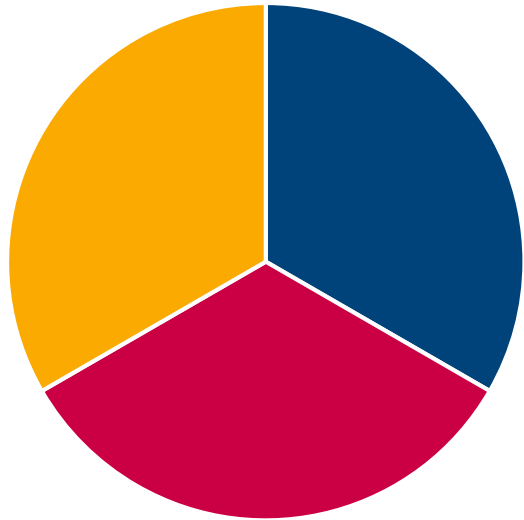


Subgruppen

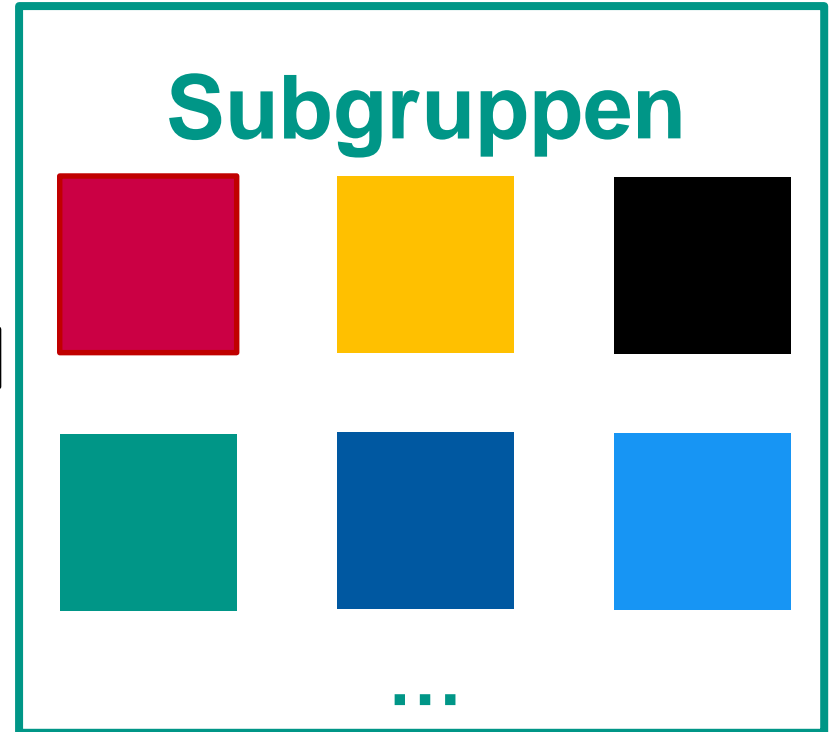
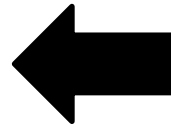
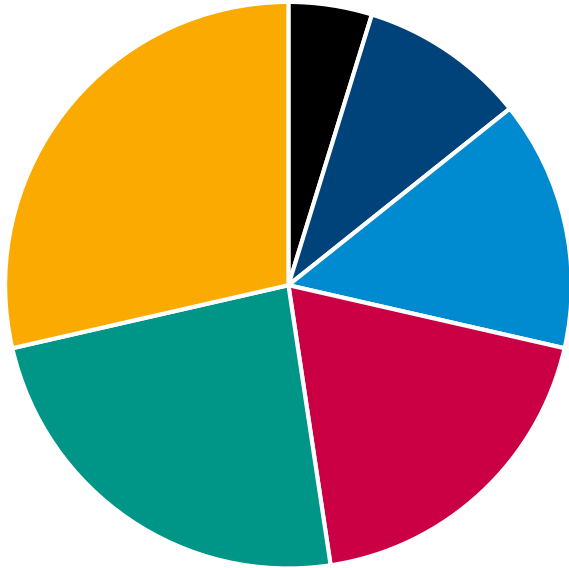


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Unspezifische Rückenschmerzen - Subgruppen



Unspezifische Rückenschmerzen - Subgruppen



Unspezifische Rückenschmerzen



Take Home Message - Unspezifische Rückenschmerzen

JA

- Weil unspezifisch nicht unerklärlich bedeutet
- Allerdings nicht als homogene Gruppe zu betrachten
- Subgruppierung hilfreich für angepasste, individuelle und auch effizientere Therapie

Vielen Dank für die Aufmerksamkeit!

