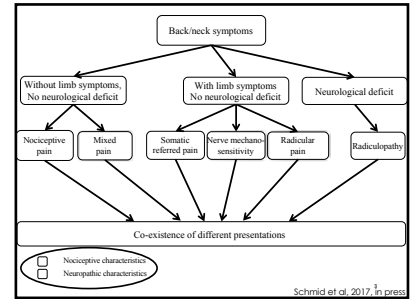
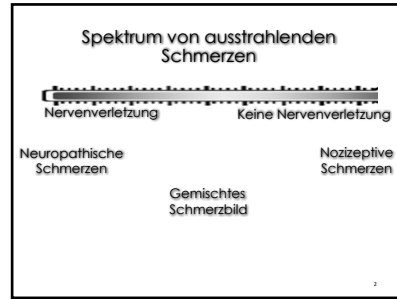


Klassisches Assessment von Entrapment Neuropathien

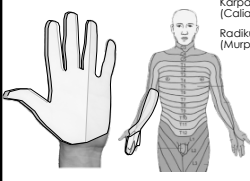
www.neuro-research.ch A/Prof Annina Schmid



UNIVERSITY OF OXFORD



Symptomverteilung



Karpaltunnel Syndrom: ~70% (Caliandro 2006)

Radiculopathie: ~45-66% (Murphy 2009, Henderson 1983)

Qualität von neuropathischen Schmerzen

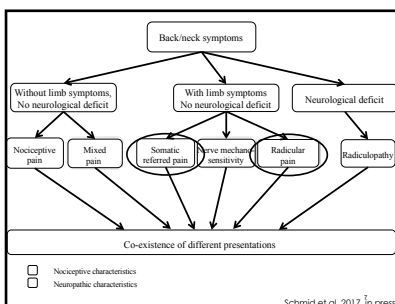


Screening tools (Bennett et al. 2007)

Table 1
Comparison of items within five neuropathic pain screening tools (shaded boxes highlight domains shared by two or more tools)

	LANSS*	DNF*	NPQ	painDETECT	ID Pain
Symptoms					
Pricking, stinging, pins and needles	•	•	•	•	•
Electric shocks or shooting	•	•	•	•	•
Hot or burning	•	•	•	•	•
Numbness	•	•	•	•	•
Pain evoked by light touching	•	•	•	•	•
Paraesthesia (not or tingling pain)	•	•	•	•	•
Pain evoked by mild pressure	•	•	•	•	•
Pain evoked by heat or cold	•	•	•	•	•
Pain evoked by changes in weather	•	•	•	•	•
Pain limited to joints?	•	•	•	•	•
Itching	•	•	•	•	•
Temporal patterns	•	•	•	•	•
Radiation of pain	•	•	•	•	•
Autonomic changes	•	•	•	•	•
Clinical examination					
Brush allodynia	•	•	•	•	•
Raised soft touch threshold	•	•	•	•	•
Raised pin prick threshold	•	•	•	•	•

* Tools that involve clinical examination
* Used to identify non-neuropathic pain




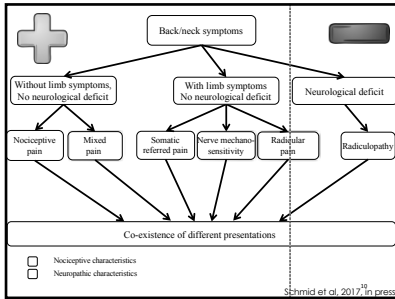
Inspektion-Schonhaltungen



Schmid and Taimpin in press 2017

Inspektion-Atrophien





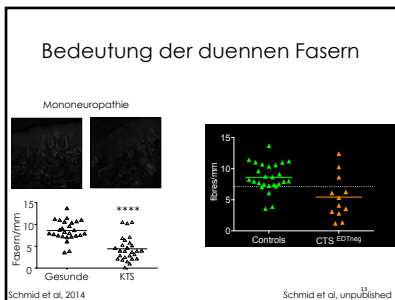
Neurologische Untersuchung

Muskelkraft Reflexe Sensibilität

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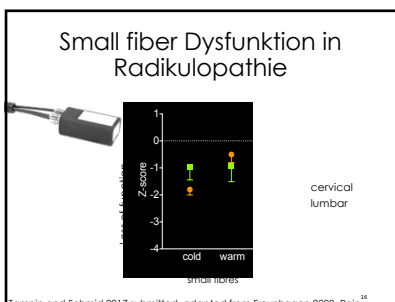
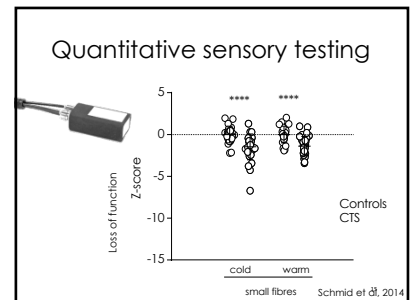
Was testen wir?

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Wie koennen wir die kleinen Fasern in der Klinik testen?

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In der Klinik

	Neurotip	→	warm OR cold
sensitivity	0.49		0.98
specificity	0.88		0.20

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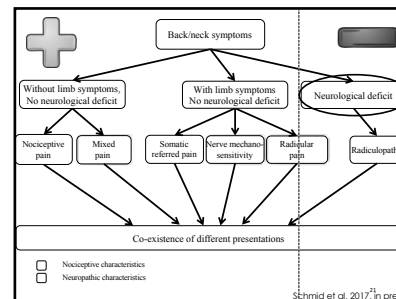


Vibrations Empfinden

Boake et al 2006

Von Frey Haare

Boake et al 2006



Gain versus loss of function

- Taubheit
- ↓ Kraft
- ↓ Reflexe

- Schmerzen
- Paraesthesien
- Jucken
- Hypersensitivitaet
 - Allodynie
 - Hyperalgesie

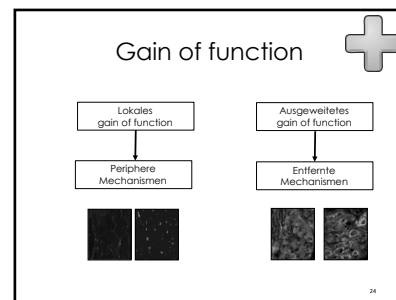
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Gain of function Tests

Thermal

Mechanisch

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Deshalb...

- Extraterritoriales Testen von gain of function

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Curr Pain Headache Rep (2012) 14:199-206
DOI: 10.1007/s11910-012-0290-7

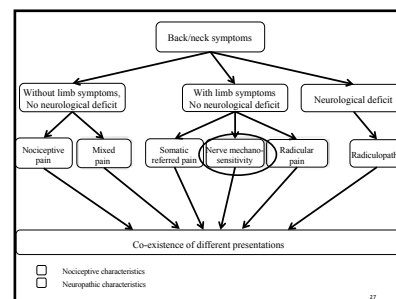
NEUROPATHIC PAIN (R. RAJA, SECTION EDITOR)

Quantitative Sensory Testing of Neuropathic Pain Patients: Potential Mechanistic and Therapeutic Implications

Doreen B. Pfau · Christian Geber · Frank Birkl · Ralf-Dieter Treede

Pfau et al 2012

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Aktive Bewegung

Schmid and Tampin in press

Neurale Mechanosensitivität

Neurodynamische Tests

Nerven Palpation

Butler, 2000, Evey 1977

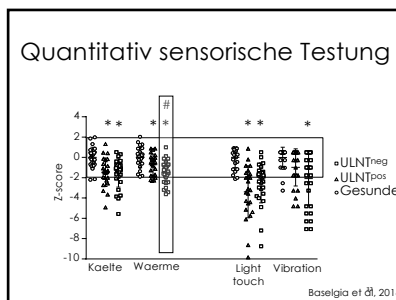
Was wenn neurodynamische Tests negativ sind?

- ~58% Patienten mit lumbaler Radikulopathie (suri 2015)
- 18-72% Patienten mit KTS (Baselgia 2016, Coveney 1997, Vanti 2012, Wainner 2005)

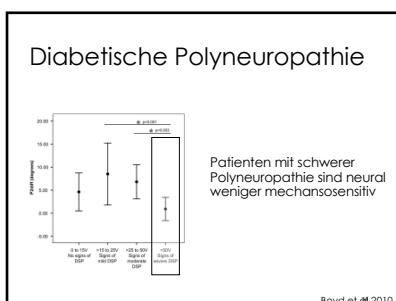
Studien Design

Quantitative sensorische Testung:
Unterschiedliche Nervenfasern Funktion?

Baselgia et al., 2016

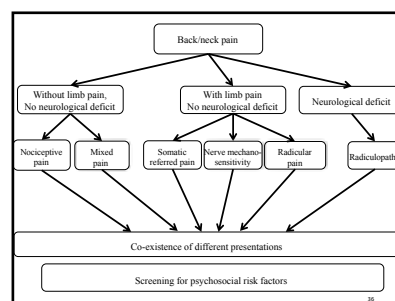


Patienten mit negativen neurodynamischen Testen haben eine stärkere Dysfunktion der kleinen Nervenfasern.



In der Klinik...

- Interpretiere die neurodynamischen Tests nie in Isolation...
- ...sondern immer im Kontext mit dem neurologischen Untersuchung
- Bedeutung der kleinen Fasern!



Questionnaires

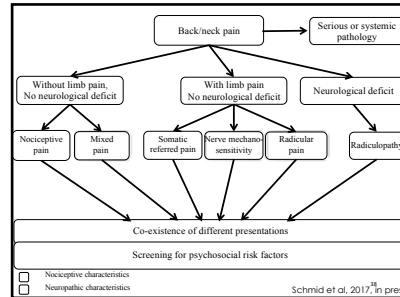
Risk stratification tools

- Orebro (Linton 2011)
- Start back tool (Hill 2015)

Psychological domain

- Pain catastrophising scale
- DAPOS: Depression, anxiety positive outlook scale
- Tampa scale of Kinesiophobia
- etc

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Red flags screening

- Frakturen (osteoporotisch)
- Entzündliche Prozesse
- Infektion
- Maligne Prozesse
- Andere neurologische Probleme

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Myelopathie Test Cluster

- Gang Abnormalität (Ataxie, Spastik, breit)
- Hoffmann's test
- Umgekehrter Brachioradialis Reflex
- Babinski Reflex
- Alter >45 Jahre



- 1/5: Sensitivität 94%, negative LR 0.18 → Gut fuer screening, 'rule out'
- 3/5: post-tests Probabilität >94% → Gut fuer 'rule in'

Cook 2010

Metastatische Rueckenmarks Kompression

EARLY WARNING SIGNS OF MSCC
Greenhalgh S, Turpinney J, Richards L, Seife J (2010)

- R** Referred back pain is multi-segmental or band-like
- E** Escalating pain which is poorly responsive to treatment (incl medication)
- D** Different character or site to previous symptoms
- F** Funny feelings, odd sensations or heavy legs (multi-segmental)
- L** Lying flat increases back pain
- A** Agonising pain causing anguish and despair
- G** Gait disturbance, unsteadiness, especially on stairs (not just a limp)
- S** Sleep grossly disturbed due to pain being worse at night

NI - Established motor / sensory / bladder / bowel disturbances — late signs

Greenhalgh Sue

Metastatische Rueckenmarks Kompression

METASTATIC SPINAL CORD COMPRESSION (MSCC) KEY RED FLAGS

Past medical history of cancer (but note 25% of patients do not have a diagnosed primary)

Early diagnosis is essential as the prognosis is severely impaired once paralysis occurs

A combination of Red Flags increases suspicion (the more red flags the higher the risk and the greater the urgency)

To access the Greater Manchester and Cheshire MSCC guidelines go to: www.christie.nhs.uk (search 'spinal cord compression')

The Christie NHS Foundation Trust

Greenhalgh Sue

Cauda equina

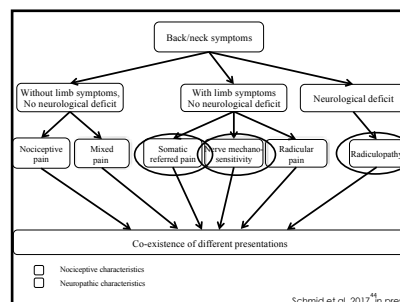
Cauda Equina Syndrome Warning Signs

- Loss of feeling/pins and needles between your inner thighs or genitals
- Numbness in or around your back passage or buttocks
- Abnormal feeling when using toilet paper to wipe yourself
- Changes when you try to stop or control your flow of urine
- Loss of sensation when you pass urine
- Leaking urine or recent need to use pads
- Not knowing when your bladder is either full or empty
- Inability to stop a bowel movement or leaking
- Loss of sensation when you pass a bowel motion
- Change in ability to achieve an erection or ejaculate
- Loss of sensation in genitals during sexual intercourse

Any combination or number of these warning signs could be symptoms of Cauda Equina Syndrome.

Seek emergency medical help within 12 to 24 hours

Greenhalgh Sue



Einfluss auf Behandlung?

Interface

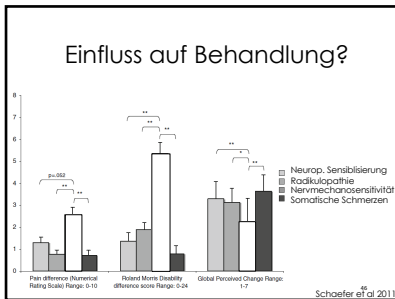


Neurodynamischer Slider



Schoefer et al 2011

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- ### Zusammenfassung
- Fragebogen
 - Neurologischer Untersuch (plus small fibres)
 - Aktive Bewegung inkl Differenzierung neuraler Strukturen
 - Neurale Mechanosensitivitaet
 - Screening yellow flags
 - Screening red flags
 - Differentialdiagnose

Danke!

annina.schmid@neuro-research.ch

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Australian Government
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