

AALBORG UNIVERSITY  
DENMARK

# “Noget om smerte”

14.15-15.00 (ham den anden er syg...)

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Specialist i kiropraktisystering, Dipl.MT RSPPT EDIPP  
Kandidatuddannelsen i Muskuloskeletal Fysioterapi

1

## Akutte smerter

...og andre smerter, som vi forstår virkelig godt = inflammation

Hoegh M., Pain Science in Practice (Part 3): Peripheral Sensitization ; J Orthop Sports Phys Ther 2022;52(6):303-306.

2

## Prognose: En episode varer typisk 4-6 dage

- 366 participants recruited from primary care settings (physiotherapy and chiropractic) after being discharged from care.
- **Recovery was defined as a score of 0 or 1** on an 11-point numerical rating scale for 7 consecutive days.
- 70% of episodes recovered before 1 week and **91% recovered before 6 weeks.**
- **40%** of episodes **resulted in care-seeking**

de Campos TF, da Silva TM, Maher CG, Pocovi NC, Hancock MJ. Prognosis of a new episode of low-back pain in a community inception cohort. Eur J Pain. 2023 Jan 24

3

## Hvorfor (tror folk at) får vi ondt i ryggen?

Gran S, Bülow K, Jonsson TD, Degn J, Kongsted A. What do people believe to be the cause of low back pain? A scoping review. Braz J Phys Ther. 2023 Nov-Dec;27(6):100562

1. **“Structural injury or impairment”** blev fundet i 45 (56%) studier
2. **“Lifting and bending”** blev fundet i 26 studier [32%]
3. **“Mental or psychological”** blev fundet i 24 studier [30%]

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4

# Hvad er ikke årsagen til uspecifikke (ryg) smerter?

**Table 2.** Colour-intensity map of combined ergonomic exposures (mean percentage of working time) and changes in neck-shoulder and low-back pain intensity [95% confidence interval (CI)] from baseline to 2-year follow-up in the identified clusters (C) compared with the reference cluster (cluster 9, low physical work demands). N and % are number of participants and percentage of the total number of participants, respectively, for each cluster.

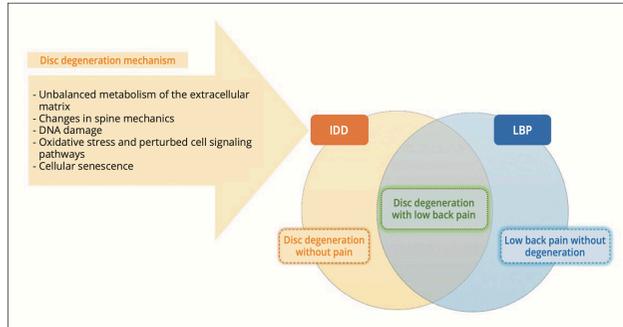
C	N	%	Ergonomic factors (percentage of working time)							Differences of LS means for the change in pain intensity from baseline to 2-year follow-up (95% CI)*	
			Walking, standing	Arms above shoulder	Repetitive arm movement	Back twisted, bent	Lifting, carrying	Pushing, pulling	Kneeling, squatting	Neck-shoulder	Low-back
1	359	1.9	94	67	65	82	82	76	51	0.70 (0.38–1.02)	0.95 (0.59–1.30)
2	423	2.2	90	40	83	82	50	25	16	0.70 (0.37–1.03)	0.59 (0.25–0.92)
3	946	5.0	82	24	15	33	65	30	26	0.50 (0.30–0.71)	0.52 (0.30–0.74)
4	923	4.9	80	24	13	66	21	22	20	0.48 (0.27–0.68)	0.52 (0.31–0.74)
5	527	2.8	93	20	72	20	34	26	12	0.43 (0.16–0.69)	0.26 (-0.01–0.53)
6	698	3.7	26	10	74	16	8	5	4	0.42 (0.21–0.63)	0.17 (-0.05–0.39)
7	4381	23.2	45	10	5	11	12	9	8	0.18 (0.08–0.28)	0.23 (0.13–0.33)
8	3912	20.7	86	12	6	13	14	12	12	0.08 (-0.02–0.19)	0.18 (0.07–0.28)
9	6736	35.6	20	3	2	4	3	1	1	ref	ref

\*Controlled for age, gender, education, year of questionnaire, BMI, smoking, leisure time physical activity, influence at work, and pain intensity at baseline.

Andersen L.L. et al., Scand J Work Environ Health. 2021;47(4):287–295



# Hvad er ikke årsagen til uspecifikke (ryg) smerter?



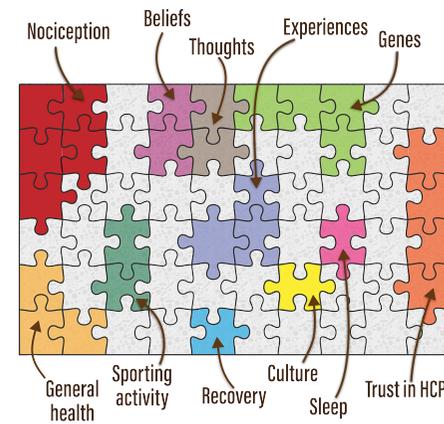
“Although disc degeneration is **more common in individuals with low back pain than in asymptomatic ones, degeneration occurs in a large proportion of asymptomatic individuals. Therefore, degeneration itself is not sufficient to trigger low back pain.**”

Figure 1.—Mechanisms of disc degeneration and association to low back pain. IDD may or may not be associated with LBP. LBP may or may not be associated with IDD. Mechanisms of IDD are not synonymous to mechanisms that trigger nociception and cause LBP.

Chiu AP, Chia C, Arendt-Nielsen L, Curatolo M. Lumbar intervertebral disc degeneration in low back pain. *Minerva Anestesiol.* 2024 Apr;90(4):330–338.



# Uspecifikke smerter



Hoegh, M., et al. (2024). *Journal of Orthopaedic & Sports Physical Therapy*. Advance publication. <https://doi.org/10.2519/jospt.2024.12462>



## Kroniske smerter

- Smerter i én eller flere regioner, som har været vedvarende eller gentagne i mere end 3 måneder



9

## Hvordan udvikler langvarige smerter sig?

8 opfølgninger over 4 år: N = 1.905 mennesker med smerter +6mdr ved baseline

- "fluctuating" (n = 586 [31%]),
- "persistent mild" (n = 449 [24%]),
- "persistent moderate" (n = 414 [22%]),
- "persistent severe" (n = 251 [13%]),
- "gradual improvement" (n = 205 [11%])

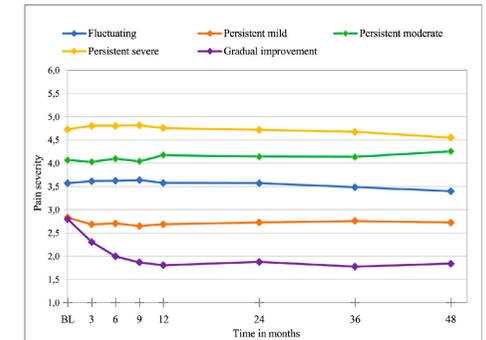


Figure 2. Average pain intensity values for all the 5 trajectory groups identified over all 8 follow-up time points.



10

## Konsekvenser af kroniske smerter

### • Sociale

- Trækker sig fra sociale aktiviteter
- Risiko for social isolation, ensomhed

### • Identitet

- Social identitet udfordres
- Følelse af skyld og bekymring, øget stress og forringet egenhåndtering

### • Relationer

- Smertens usynlige natur kan lede til misforståelser, mistillid og konflikter på bl.a. arbejdspladsen
- Stigmatisering, diskrimination og mobning
- Smerte kan påvirke humøret og lede til konflikt og dysfunktion i familier o.a.

Ashton-James, Claire E.a; Anderson, Steven R.b; Mackey, Sean C.b; Darnall, Beth D.b Beyond pain, distress, and disability: the importance of social outcomes in pain management research and practice, PAIN: March 2022 - Volume 163 - Issue 3 - p e426-e431



11

*"After controlling for covariates, stigma predicted greater disability and depression and lower social support, but not pain intensity... People who were unemployed reported more stigma [...] and stigma from employers is a barrier for people with chronic pain returning to work"*

Bean DJ, Dryland A, Rashid U, Tuck NL. The Determinants and Effects of Chronic Pain Stigma: A Mixed Methods Study and the Development of a Model. J Pain. 2022 Jun 11

**"Validation** of pain means to have received a meaningful and acceptable explanation for pain. Validation of myself means being recognized as worth-while and finding a voice that is heard."

Toye F. et al. Pain Medicine, 22(6), 2021, 1333-1344



12

# Usikkerhed/utryghed og afmagt

## WHAT WILL HAPPEN OVER TIME?

**Losing independence** over time, how to **prevent** LBP episodes over time, not being able to engage with others in the future, and **future** availability of health care.

## CAN, AND WILL, CLINICIANS HELP ME?

Clinicians' behaviour, the cost of appointments, duration of treatments, and their **experiences of not getting better despite seeking care** produced uncertainty regarding the value of seeking care.

## WHAT ARE CLINICIANS TALKING ABOUT?

The questions clinicians ask, **how to explain** their symptoms to them, and **how to make sense of clinicians' inconsistent messages**

## AM I BEING TAKEN SERIOUSLY?

The **invisibility** of the pain and **not being heard or believed** produced uncertainty and negative emotions.

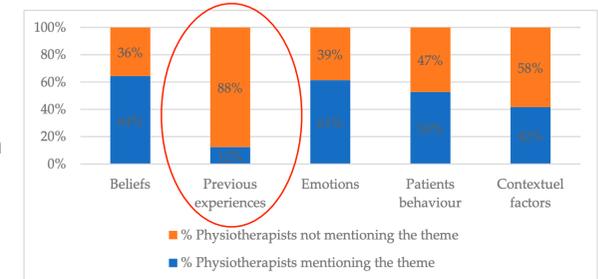
Costa, N. et al., PAIN 164 (2023) 2749–2758



13

# Fysioterapeuter har svært ved at forstå/inkludere faktorer “udenfor” dem selv i deres forståelse...

- Under 50% af 670 fysioterapeuter i Holland angav tidligere erfaringer og kontekst som væsentlige elementer i en (vignette) af kroniske LBP



Vanderstraeten R, et al. How Do Physiotherapists Explain Influencing Factors to Chronic Low Back Pain? A Qualitative Study Using a Fictive Case of Chronic Non-Specific Low Back Pain. Int J Environ Res Public Health. 2023 May 16;20(10):5828

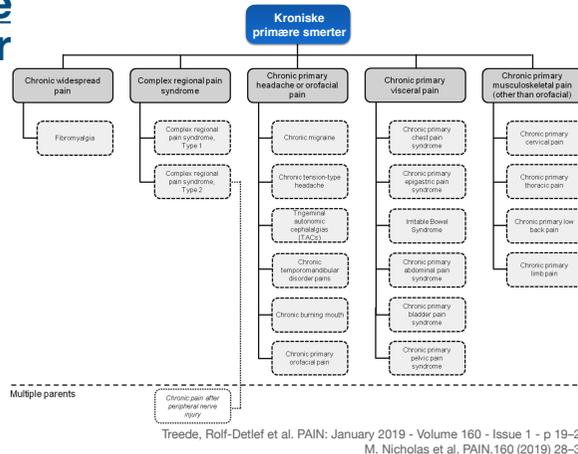


14

# Hvad er kroniske primære smerter

- Smerter i én eller flere regioner + vedvarende eller gentagne i mere end 3 måneder +
- er forbundet med **signifikant emotionel distress eller funktionelle begrænsninger**, der påvirker ADL eller sociale roller, samt
- ikke kan forklares med en anden kronisk tilstand

## Aka “du fejler smerter”



15

# Alle smerter er multifaktorielle

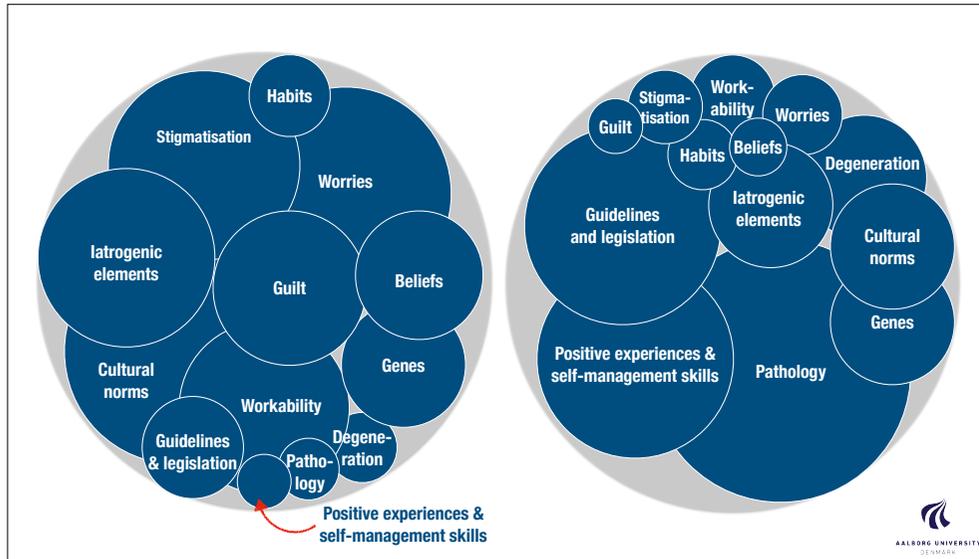


Adapted from: Engel GL. The need for a new medical model: a challenge for biomedicine. Science. 1977 Apr 8;196(4286):129–36

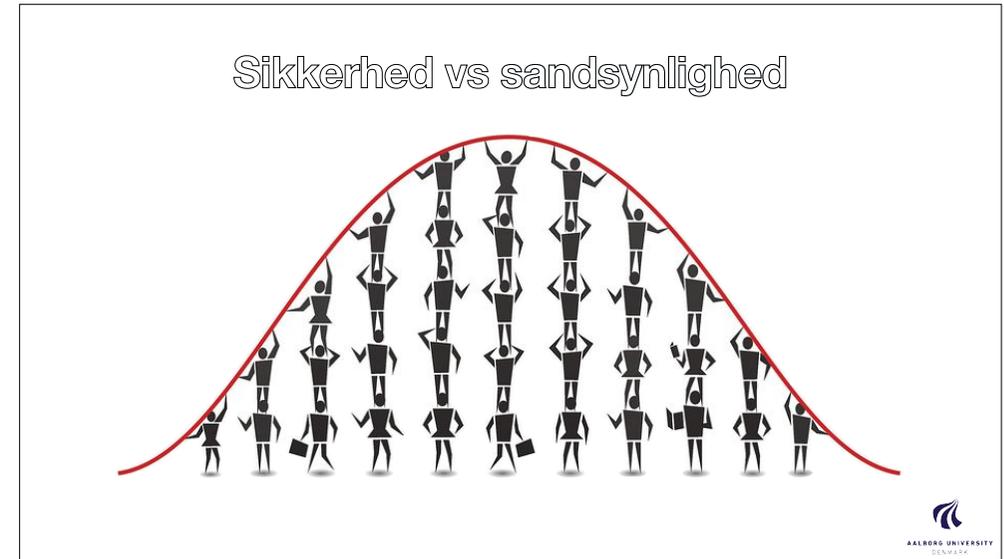


16





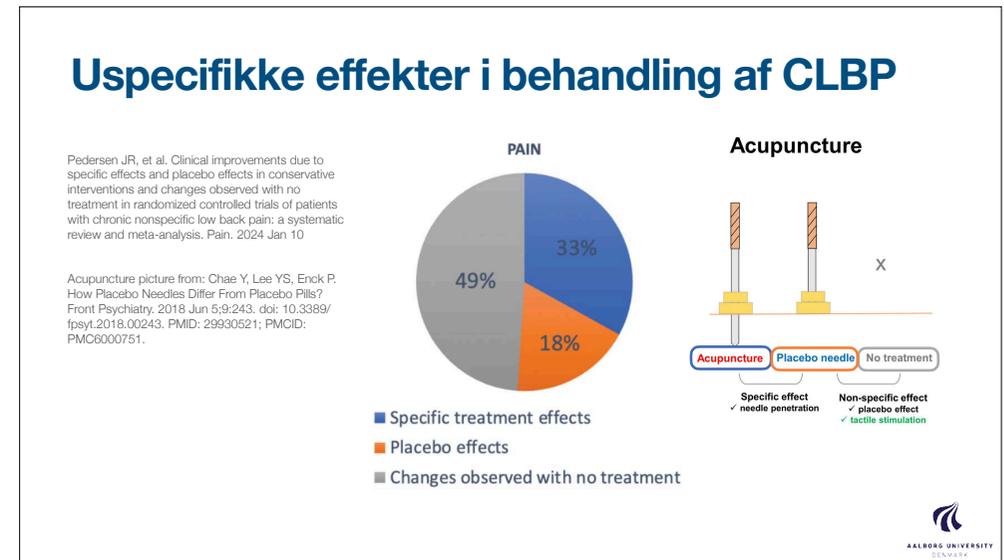
17



18

# Jo, men... min behandling virker altså!

19



20



## Nye jobmuligheder *(læs: hvor kan i styrke jeres lønkrav)* For fysioterapeuter med opdaterede kompetencer til at håndtere smerte

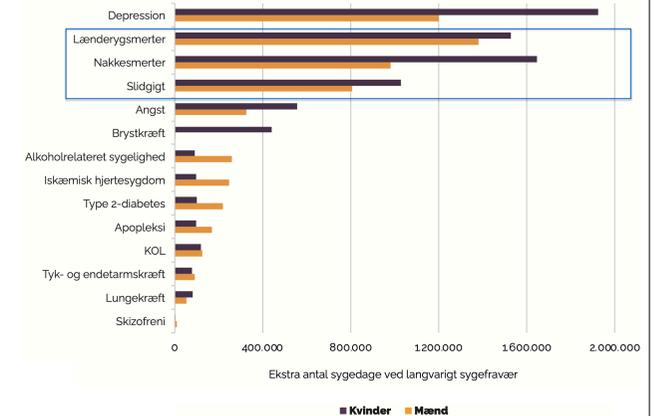
- Screening (fx almen praksis)
- Neuropatiske smerter
- Pakkeforløb
- Telemedicin/hybridforløb (fx tilbagevendende rygsmarter)
- Opioid ud-/nedtrappingsforløb
- Arbejdsfastholdelse



25

## Ekstra lægekonsultationer

Figur 1.1.7 Ekstra antal sygedage ved langvarigt sygefravær blandt mænd og kvinder i alderen 16-64 år i Danmark med udvalgte sygdomme i forhold til en referencepopulation matchet på køn, alder, uddannelse og CCI. Årligt gennemsnit for perioden 2017-2018.

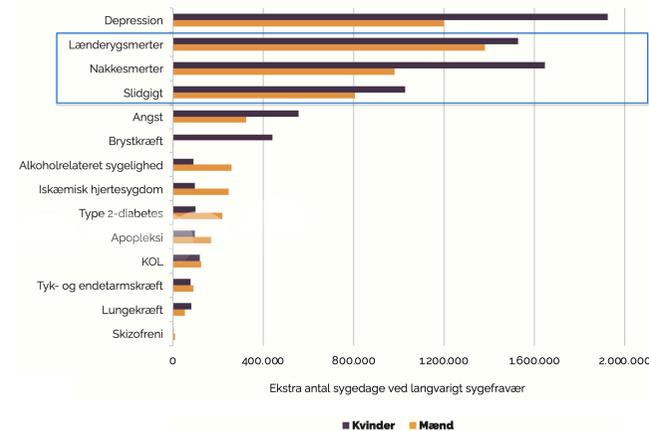


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26

## Ekstra sygedage

Figur 1.1.7 Ekstra antal sygedage ved langvarigt sygefravær blandt mænd og kvinder i alderen 16-64 år i Danmark med udvalgte sygdomme i forhold til en referencepopulation matchet på køn, alder, uddannelse og CCI. Årligt gennemsnit for perioden 2017-2018.



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27

## Førtidspension pga. lænderygsmarter i DK 1982 - 2022: Ingen ændring!!!

**Low-back pain and early retirement among Danish semiskilled construction workers**

by Marianne Damlund, MD, Staffan Garh, PhD, Peter Hasle, MSc, Karen Munk<sup>1</sup>

**Abstract**  
DANIELSEN M, GARTH S, HASLE P, MUNK K. Low-back pain and early retirement among Danish semiskilled construction workers. *Scand J Work Environ Health* 2022; suppl 1, 100-104. According to new retirement Danish trade union members are able to retire before their expected age of retirement. In 2017, 10% of the construction workers reported low-back pain as one of the reasons for retirement, which is comparable to other professions. In 2018, 10% of the construction workers reported low-back pain as one of the reasons for retirement. The proportion of construction workers who reported low-back pain increased from 48% in 2017 to 50% in 2018. The proportion of construction workers who reported low-back pain increased from 48% in 2017 to 50% in 2018. The proportion of construction workers who reported low-back pain increased from 48% in 2017 to 50% in 2018.

**Introduction**  
The occupational strain factors that are considered most responsible for the development of low-back pain are heavy physical work, monotonous work, stopped work patterns, and an investigation of the work environment of semiskilled Danish construction workers, made consecutively with the present investigation, showed that these workers are exposed to all of these risk factors.

**Methods**  
Semiskilled construction work in Denmark consisted of form work, concrete reinforcement, concrete pouring, and a variety of other work functions. It is carried out with a high degree of specialization among the workers (2).

**Results**  
A great problem in occupational health investigations is that persons who have left because of health problems are difficult to detect. In this investigation we were able to study a group of people aged 45-64 years who had voluntarily chosen to leave employment before the normal retirement age of 67 in Denmark due to a special arrangement according to which, since 1 January 1978, it has been possible for organized workers between the ages of 45 and 64 to retire on a special, high pension. This arrangement is voluntary and is not based on any medical criteria. It has therefore been possible for workers to retire because of diseases that do not often result in disability pensions. Low-back pain and other work-related diseases were investigated.

**Conclusion**  
It has been the purpose of this study to investigate low-back pain as the cause of work-related retirement among the semiskilled construction workers. This study forms a part of a larger investigation on the technology, work environment, and health problems in semiskilled construction work (2, 3, 4).

**Material and methods**  
The Copenhagen Trade Union of Semi-

- 2.9 mio sygedage (13%)
- 4.154 people on early retirement (38%)

**2022 Sygdomsbyrden i Danmark – sygdomme**



28

## Omkostninger til førtidspension om året i Danmark

Tabel 5.1 Ekstra produktionstab grundet langvarigt sygefravær, førtidspension og tidlig død opdelt efter køn og aldersgrupper i 2021.

	Ekstra omkostninger i produktionstab (mio. 2021-kr.)			
	Langvarigt sygefravær	Førtidspension	Tidlig død	I alt
<b>I alt</b>	7.798,3	23.568,5	2.336,3	33.703,1
<b>Mænd</b>				
16-29 år	55,1	-72,6	-	-17,5
30-49 år	2.030,0	2.276,7	256,7	4.563,4
50-66 år	1.809,8	3.275,5	1.470,5	6.555,8
I alt pr. 1.000 mænd	11,2	16,4	5,0	32,6
I alt for mænd	3.901,0	5.717,7	1.737,3	11.356,0
<b>Kvinder</b>				
16-29 år	133,9	1.287,9	-	1.421,8
30-49 år	2.037,3	10.792,7	131,5	12.961,5
50-66 år	1.707,0	5.488,2	470,1	7.665,3
I alt pr. 1.000 kvinder	9,3	42,3	1,4	53,0
I alt for kvinder	3.907,4	17.844,2	601,2	22.352,8

Datakilde: DREAM-register, Arbejdsklassifikationsmodulet (AKM) og tabeller fra Statistikbanken for køns- og aldersspecifikke erhvervsfrekvenser for 2021 (RAS200), overlevelsestavler (HISB9) og gennemsnitlige lønindkomster for 2021 (LON50).  
 Note: Ekstra omkostninger i produktionstab er opgjort blandt personer med lænderygsmerte sammenlignet med personer uden lænderygsmerte, der har samme køn, alder, uddannelse og sygelighed fraset reumatiske sygdomme.

Produktionstab ved lænderygsmerte i Danmark  
 Elektronisk udgave: 978-87-7899-676-3



29

## Arbejde er det vildeste multi-tool!

Financial stability

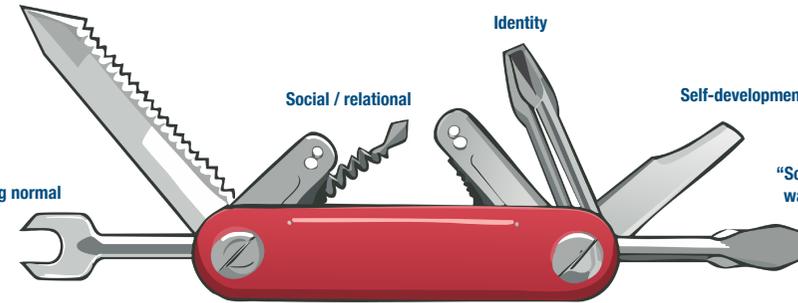
Feeling normal

Social / relational

Identity

Self-development

"Something to wake up to"



Reneman MF, Coenen P, Kuijjer PPFM, van Dieën JH, Holtermann A, Igwesi-Chidobe CN, Parker R, Reezigt R, Stockendahl MJ, Hoegh M. Tensions of Low-Back Pain and Lifting; Bridging Clinical Low-Back Pain and Occupational Lifting Guidelines. J Occup Rehabil. 2024 Sep;34(3):473-480



30

## Arbejde er terapi

Terapi (alene) får ikke folk i arbejde:  
 Arbejde får folk i arbejde!

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31

## Fasthold arbejdet!

Research Paper

PAIN®

PAIN 164 (2023) 2104-2111

### Prognostic factors for high societal costs: a register-based study on 561,665 patients with shoulder disorders

Lotte Sørensen<sup>a,\*</sup>, Johanna Maria van Dongen<sup>b</sup>, Maurits van Tulder<sup>c</sup>, Lisa Gregersen Oestergaard<sup>a,d,9</sup>

#### Abstract

Shoulder disorders are common and associated with high societal costs, especially for a small group of patients. Prognostic factors can help identify high-cost patients, which is crucial to optimize early identification and develop tailored interventions. We aimed to identify prognostic factors for high societal costs, to examine whether the prognostic factors were similar for high healthcare costs and high costs of sick leave, and to investigate the model's robustness across 4 diagnostic categories. Using national Danish registers, potential prognostic factors (age, sex, educational level, long-term sick leave, admission, visits to general practitioner and physiotherapist, comorbidity, diabetes, low back pain, and neck pain) were included in a logistic regression model with high societal costs, defined by the top 10th percentile, as the main outcome. The model's prognostic accuracy was assessed using the Nagelkerke  $R^2$  and its discriminative ability using area under the receiver operating curve (AUC). Data on 80% of the patients ( $n = 449,302$ ) were used to develop the model and 20% ( $n = 112,363$ ) to validate the model. **By far the strongest prognostic factor for high societal costs and high costs of sick leave was sick leave at the time of diagnosis (OR: 20.2, 95% CI: 19.5-20.9).** Prognostic factors for high healthcare costs were high age, comorbidity, and hospital admission the year before diagnosis. The model was robust across diagnostic categories and sensitivity analyses. In the validation sample, the primary model's discriminative ability was good (AUC = 0.80) and the model explained 28% of the variation in the outcome (Nagelkerke  $R^2$ ).

**Keywords:** Shoulder disorders, Prognostic factors, High-cost patients, Societal costs, Healthcare costs, Costs of sick leave



32

Der skal være mere fokus på at lønnet arbejde er en væsentlig social determinant for folkesundheden overfor arbejdsgivere, sundhedsfaglige, politikere og befolkningen generelt

Burdorf, A., Fernandes, RCP, Robroek, SJ. *Health and inclusive labour force participation*, Lancet 2023; 402 : 1382-92



33

## Tanker om smerte vs tidlig pensionering

1824 The Journal of Pain Pain Control Beliefs in Workers with Persistent Pain  
Table 2. Levels of Pain Control, Pain Influence, Pain Intensity, and Associated Risk of Disability Pension

PAIN		MODEL 1		MODEL 2	
		HR	95% CI	HR	95% CI
Control	High	1		1	
	Moderate	1.18	(.96-1.46)	1.30	(1.03-1.64)
	Low	2.03	(1.46-2.82)	2.09	(1.45-3.01)
Influence	High	1		1	
	Moderate	1.24	(.98-1.56)	1.43	(1.11-1.87)
	Low	1.75	(1.33-2.32)	2.10	(1.53-2.89)
Intensity	Low-back	1.16	(1.10-1.21)	1.18	(1.12-1.24)
	Neck/shoulder	1.11	(1.06-1.16)	1.12	(1.06-1.18)

NOTE. Model 1: Adjusted for age and education.  
Model 2: Adjusted for age, education, BMI, smoking, leisure-time physical activity, physical work demands, and psychosocial work factors.  
For the predictors "pain control" and "pain influence," both models were controlled for pain intensity.

Vinstrup J, Bláfoss R, López-Bueno R, Calatayud J, Villadsen E, Clausen T, Doménech-García V, Andersen LL. Pain Control Beliefs Predict Premature Withdrawal From the Labor Market in Workers With Persistent Pain: Prospective Cohort Study With 11-Year Register Follow-up. J Pain. 2023 Oct;24(10):1820-1829



34

## Lighed i arbejde?

"...working conditions modify the association between having a chronic disease and being able to work"

- **"better support at work, and lower psychological job demands were associated with a reduction in receiving disability benefits by 82%, 49%, and 11%, respectively"**

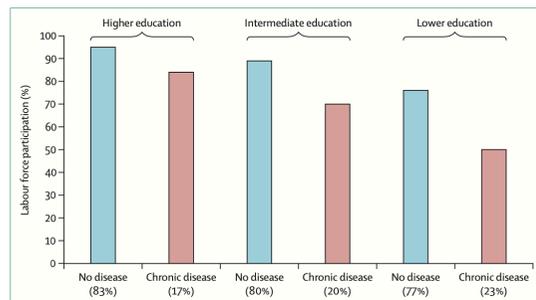


Figure 1: Increasing gap in labour force participation between men with a chronic disease and men without a chronic disease across educational levels. Similar patterns were observed among women.<sup>34,35</sup>

Burdorf, A., Fernandes, RCP, Robroek, SJ. *Health and inclusive labour force participation*, Lancet 2023; 402 : 1382-92



35

## Traditionelle barrierer for tilbagevenden til arbejde

- **Usikkerhed** omkring smerterne eller helbredet (nu eller i fremtiden)
- **Uvished** omkring hvordan man kan gøre det eller hvordan det føles at "være klar" til det
- **Uafklaret** omkring mulighederne for yderligere behandling eller afslutning på igangværende behandling
- **Ude af kontrol** når det kommer til smerterne (afmagt)
- **Usynligheden** og stigmatiseringerne omkring kroniske smerter gør det svært at fortælle om til andre

Patel, S, Greasley K and Watson PJ. Eur J Pain: 11 (2007) 831-840



36

## Hvad synes patienterne?

### Ting, der støtter dem tilbage til/med at fastholde arbejde?

- ✓ Når arbejdsplads og sundhedsvæsen **sætter "arbejde" på dagsordenen** som noget muligt, positivt og realistisk
- ✓ Når **arbejde integreres i genoptræningen** fra begyndelsen
- ✓ Når der gives **konkrete råd/vejledning**, som er baseret på patientens egne mål og når der følges op på disse
- ✓ Når der laves en **plan for fastholdelse** efter patienten er fuldt tilbage (fx tilbagefaldsplan)
- ✓ Når der er **fleksibilitet** til at tilpasse rammer, regler og ressourcer til patienten (ikke omvendt)

Hagendijk, M.E., Zipfel, N., Melles, M. et al. Patients' Needs Regarding Work-Focused Healthcare: A Qualitative Evidence Synthesis. J Occup Rehabil (2024).



37

## Indsatsområder

### Er der noget her, som fysioterapeuter ikke kunne være en del af?

1. For mennesker med invaliderende sygdom **bør arbejde være en essentiel del af behandlingen**
2. Der skal være **mere støtte** til mennesker med kronisk sygdom **ift. at vende tilbage under/efter sygdom**, og til at fastholde arbejde
3. **Arbejdsmarkedet skal tilpasse sig** for at kunne fastholde den stigende andel af ældre med kronisk sygdom

Burdorf, A., Fernandes, RCP, Robroek, SJ. Health and inclusive labour force participation, Lancet 2023; 402 : 1382-92



38

# Tak for muligheden og jeres tid!



Find links to interviews etc on linkt.ee  
[https://linkt.ee/mhdk\\_drmortenhoegh](https://linkt.ee/mhdk_drmortenhoegh)

 [msh@hst.aau.dk](mailto:msh@hst.aau.dk)



39