Det Nationale Forskningscenter for Arbejdsmiljø

Velkommen til webinar om sundt arbejdsliv

Program

- **10.05-10.25:** Sundhedsfremmende småøvelser v. professor Lars L. Andersen
- **10.25-10.45:** Sundhedsmiljø: Sund gennem kerneopgaven v. projektkoordinator Ninna M. Wilstrup og videnskabelig assistent Marie Honoré Jacobsen
- **10.45-11.00:** Panelsamtale med spørgsmål fra seerne
- **11.00:** Tak for i dag

Småøvelser på arbejdspladsen

Professor Lars L. Andersen
NFA

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Arthritis & Rheumatism (Arthritis Care & Research)
Vol. 59, No. 1, January 15, 2008, pp 84–91
DOI 10.1002/art.23256
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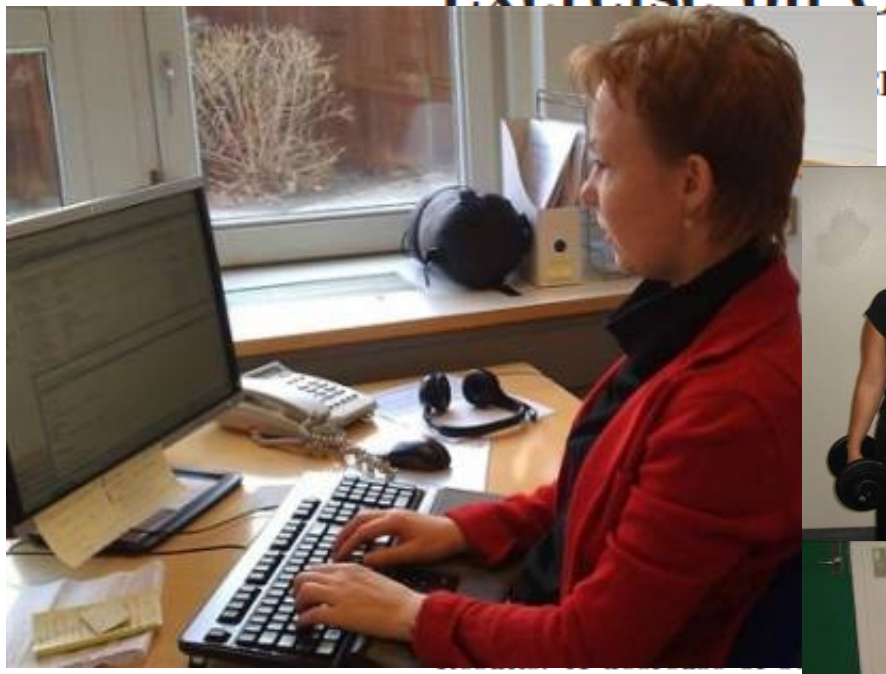
ORIGINAL ARTICLE

Effect of Two Contrasting Types of Physical Exercise on Chronic Neck Muscle Pain

HAEL KJÆR,[2] KAREN SØGAARD,[1] LONE HANSEN,[1]



specific strength training
fitness training.
Conclusion. Specific stre
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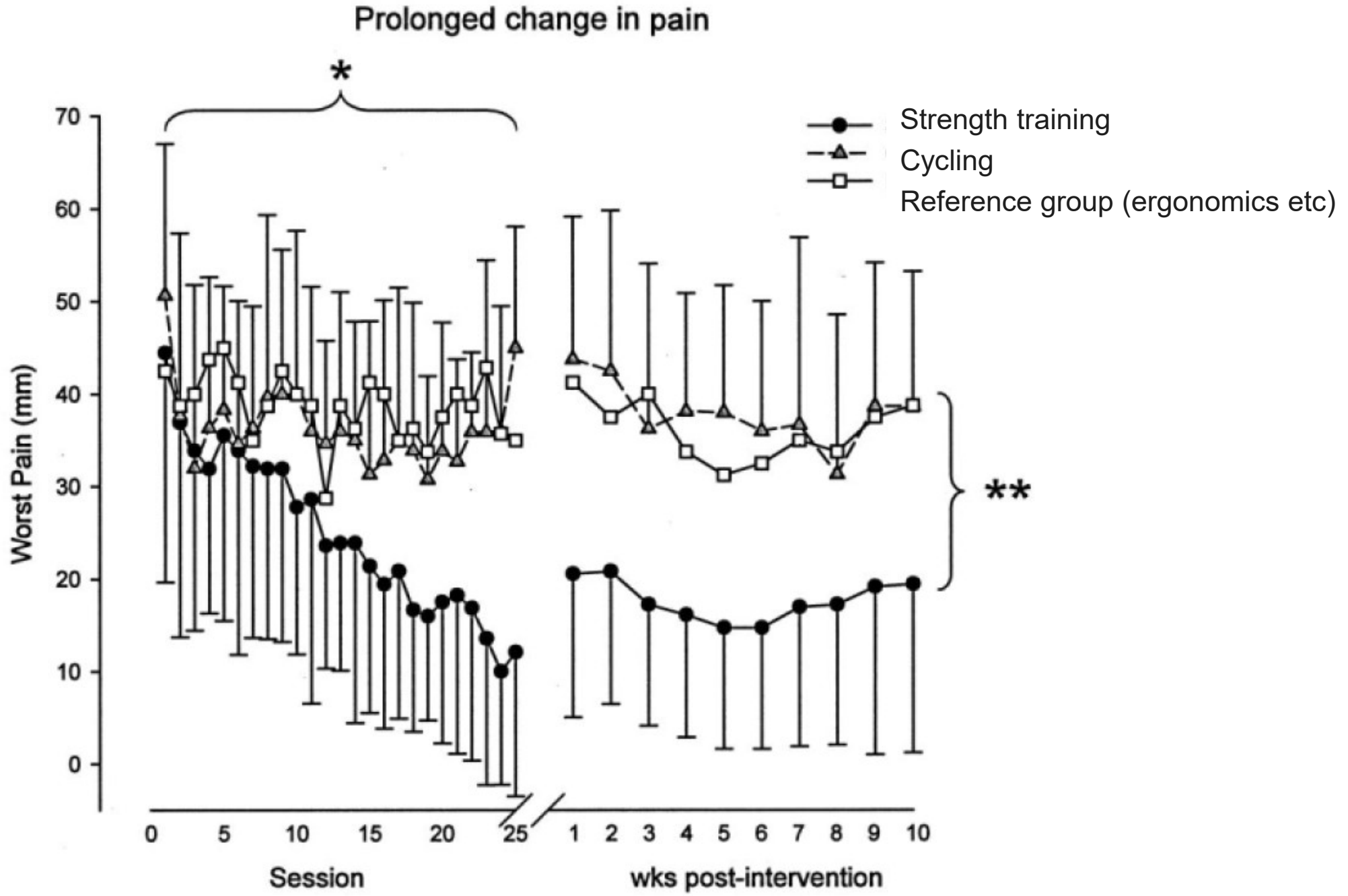
Prolonged change in pain
*
Strength training
Cycling
Reference group (ergonomics etc)
Worst Pain (mm)
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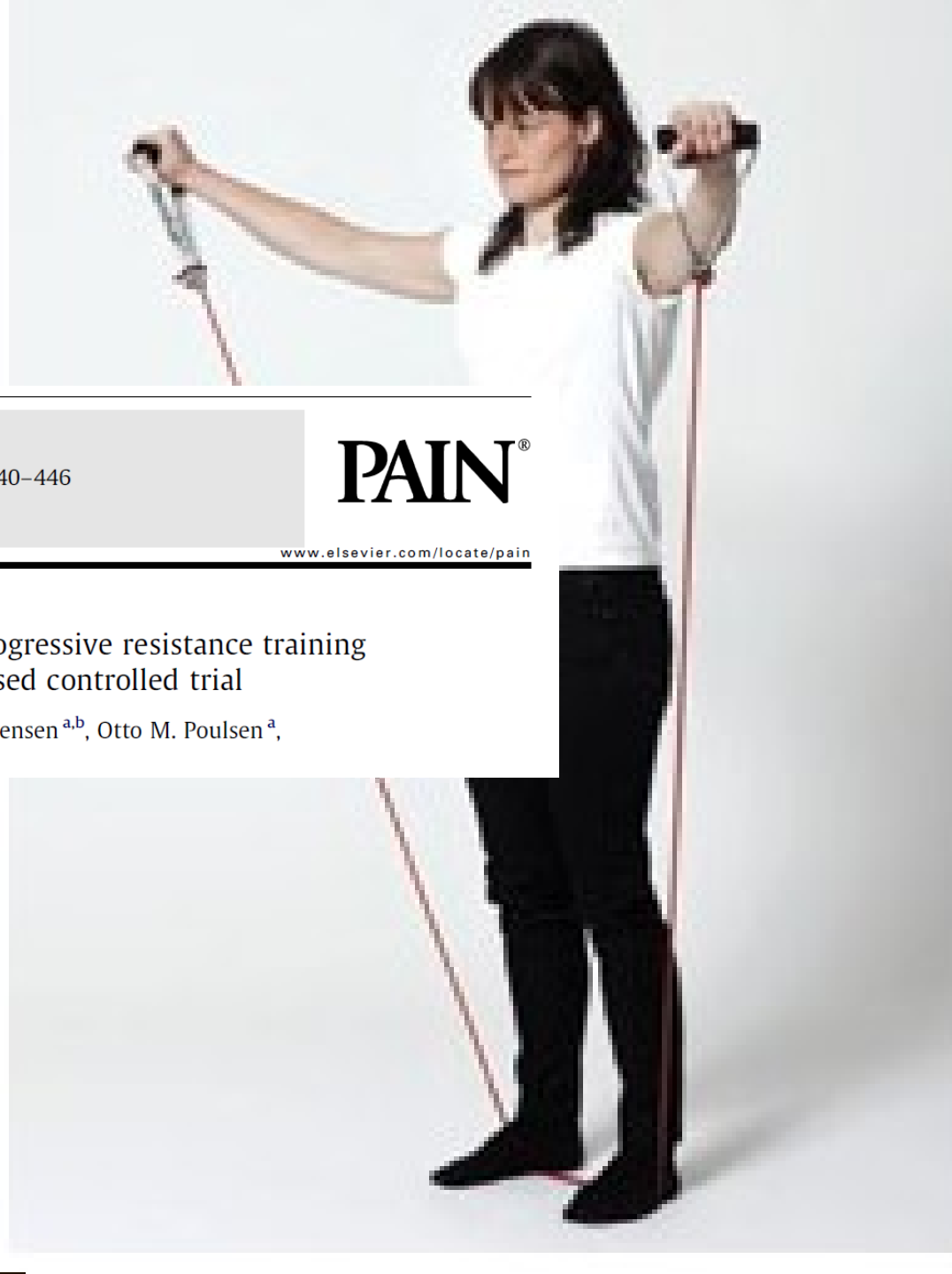
Session
wks post-intervention



PAIN® 152 (2011) 440–446

PAIN®

www.elsevier.com/locate/pain

Effectiveness of small daily amounts of progressive resistance training for frequent neck/shoulder pain: Randomised controlled trial

Lars L. Andersen [a,*], Charlotte A. Saervoll [a], Ole S. Mortensen [a,b], Otto M. Poulsen [a], Harald Hannerz [a], Mette K. Zebis [a]

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Effectiveness of small daily amounts of progressive resistance training for frequent neck/shoulder pain: Randomised controlled trial

Lars L. Andersen [a,*], Charlotte A. Saervoll [a], Ole S. Mortensen [a,b], Otto M. Poulsen [a], Harald Hannerz [a], Mette K. Zebis [a]

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Keywords:
Neck pain
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Strength tra
Randomized
Rehabilitatio

ABSTRACT

Regular physical exercise is a cornerstone in rehabilitation programs, but adherence to comprehensive exercise remains low. This study determined the effectiveness of small daily amounts of progressive

1. Introd

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doi:10.1016/

Original article

Scand J Work Environ Health – online first. doi:10.5271/sjweh.3419

Workplace strength training prevents deterioration of work ability among workers with chronic pain and work disability: a randomized controlled trial

by Emil Sundstrup, MSc,[1,2] Markus D Jakobsen, MSc,[1,2] Mikkel Brandt, MSc,[1] Kenneth Jay, MSc,[1,2] Roger Persson, PhD,[3] Per Aagaard, PhD,[2] Lars L Andersen, PhD [1]

Sundstrup E, Jakobsen MD, Brandt MB, Jay K, Persson R, Aagaard P, Andersen LL. Workplace strength training prevents deterioration of work ability among workers with chronic pain and work disability: a randomized controlled trial. *Scand J Work Environ Health* – online first. doi:10.5271/sjweh.3419

Objective Imbalance between work demands and individual resources can lead to musculoskeletal disorders and reduced work ability. The aim of this study was to evaluate the effect of two contrasting interventions on work ability among slaughterhouse workers with chronic pain and work disability.

Methods Sixty-six slaughterhouse workers with upper-limb chronic pain and work disability were randomly allocated to 10 weeks of either strength training for the shoulder, arm, and hand muscles (3 times per week, 10 minutes per session) or ergonomic training (usual care control group) from September to December 2012. The outcome measure was the change from baseline to 10-week follow-up in the work ability index (WAI).

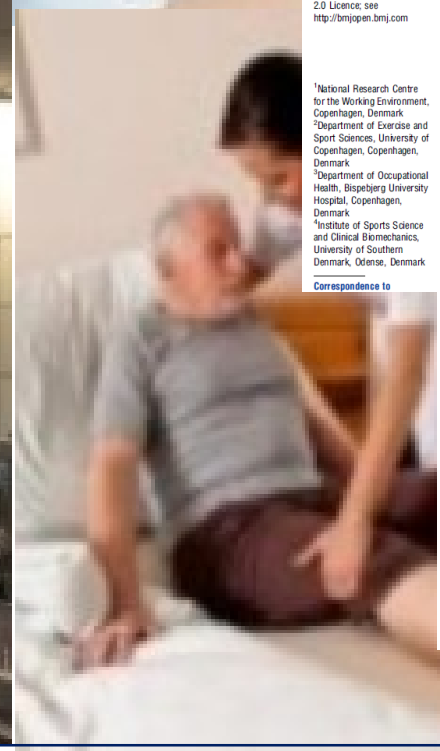
Results A priori hypothesis testing showed a group×time interaction for WAI (P<0.05). Compared with the ergonomic training group, WAI increased 2.3 [95% confidence interval (95% CI) 0.9–3.7] in the strength training group corresponding to a moderate effect size (Cohen's d 0.52). Within-group changes indicated that between-group differences were mainly caused by a reduction in WAI in the ergonomic group. Of the 7 items of WAI, item 2 (work ability in relation to the demands of the job) and item 7 (mental resources) increased following strength training compared with ergonomic training (P<0.05).

Conclusions Implementation of strength training at the workplace prevents deterioration of work ability among manual workers with chronic pain and disability exposed to forceful and repetitive job tasks. Thus, strength training performed at the workplace may in fact be regarded as a complex biopsychosocial intervention modality that reaches further than the specific physiological benefits of training per se.

Key terms biopsychosocial; carpal tunnel syndrome; elbow pain; ergonomic training; ergonomics; hand pain; lateral epicondylitis; musculoskeletal disorder; resistance training; shoulder pain; WAI; work ability index.

Musculoskeletal disorders represent the most common work-related health problem among the working population (1–3). Besides the direct effect on employee health, work-related musculoskeletal disorders are often accompanied by an escalating imbalance between work demands and individual resources consequently affecting work participation and overall working life (4).

The concept of work ability reflects the relation between the capacity of the worker and work demands, and takes into consideration work demands, health status, and physical and mental resources (5, 6). As a multidimensional instrument, the work ability index (WAI) has been associated with musculoskeletal pain, chronic disease, productivity, sickness absence, early retirement and all-cause mortality (7–11). Additionally, workers exposed to highly repetitive and forceful exertion, lack of sufficient recovery, and awkward postures (12, 13) have an elevated risk of both impaired work ability and musculoskeletal disorders (14–16). To prevent premature exit from the labor market, effective occupational interventions to prevent deterioration of work ability among employees with high physical work demands are warranted.



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BMJ open accessible medical research

Effect of specific resistance training on forearm pain and work disability in industrial technicians: cluster randomised controlled trial

Lars L Andersen,[1] Markus D Jakobsen,[1] Mogens T Pedersen,[2] Ole S Mortensen,[3] Gisela Sjøgaard,[4] Mette K Zebis[1,4]

To cite: Andersen LL, Jakobsen MD, Pedersen MT, *et al*. Effect of specific resistance training on forearm pain and work disability in industrial technicians: cluster randomised controlled trial. *BMJ Open* 2012;2:e000412. doi:10.1136/bmjopen-2011-000412

► Prepublication history for this paper is available online. To view these files please visit the journal online (http://dx.doi.org/10.1136/bmjopen-2011-000412).

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[3]Department of Occupational Health, Bispebjerg University Hospital, Copenhagen, Denmark
[4]Institute of Sports Science and Clinical Biomechanics, University of Southern Denmark, Odense, Denmark

Correspondence to

ABSTRACT

Objectives: To determine the effect of specific resistance training on forearm pain and work disability in industrial technicians.

Design and setting: Two-armed cluster randomised controlled trial of 20 weeks performed at two industrial production units in Copenhagen, Denmark.

Participants: Working-age industrial technicians both

ARTICLE SUMMARY

Article focus

- Forearm pain is associated with work disability and healthcare costs.
- Specific resistance training effectively reduces neck and shoulder pain, but its effect on forearm pain is only scarcely investigated.

Original article

Scand J Work Environ Health. 2015;41(2):153–163. doi:10.5271/sjweh.3479

Effect of workplace- versus home-based physical exercise on musculoskeletal pain among healthcare workers: a cluster randomized controlled trial

by Markus D Jakobsen, MSc,[1,2] Emil Sundstrup, MSc,[1,2] Mikkel Brandt, MSc,[1,3] Kenneth Jay, MSc,[1,2,4] Per Aagaard, PhD,[2] Lars L Andersen, PhD [1]

Jakobsen MD, Sundstrup E, Brandt M, Jay K, Aagaard P, Andersen LL. Effect of workplace- versus home-based physical exercise on musculoskeletal pain among healthcare workers: a cluster randomized controlled trial. *Scand J Work Environ Health*. 2015;41(2):153–163. doi:10.5271/sjweh.3479

Objective Numerous studies has shown that regular physical exercise can reduce musculoskeletal pain, but the optimal setting to achieve high adherence and effectiveness remains unknown. This study investigated the effect of workplace versus home-based physical exercise on musculoskeletal pain among healthcare workers.

Methods The randomized controlled trial (RCT) comprised 200 female healthcare workers from 18 departments at 3 hospitals. Participants were randomly allocated at the cluster level to ten weeks of: (i) workplace physical exercise (WORK) performed during working hours for 5×10 minutes per week and up to 5 group-based coaching sessions on motivation for regular physical exercise, or (ii) home-based physical exercise (HOME) performed during leisure time for 5×10 minutes per week. Both groups received ergonomic counseling on patient handling and use of lifting aides. Average pain intensity (0–10 scale) in the low back and neck/shoulder was the primary outcome.

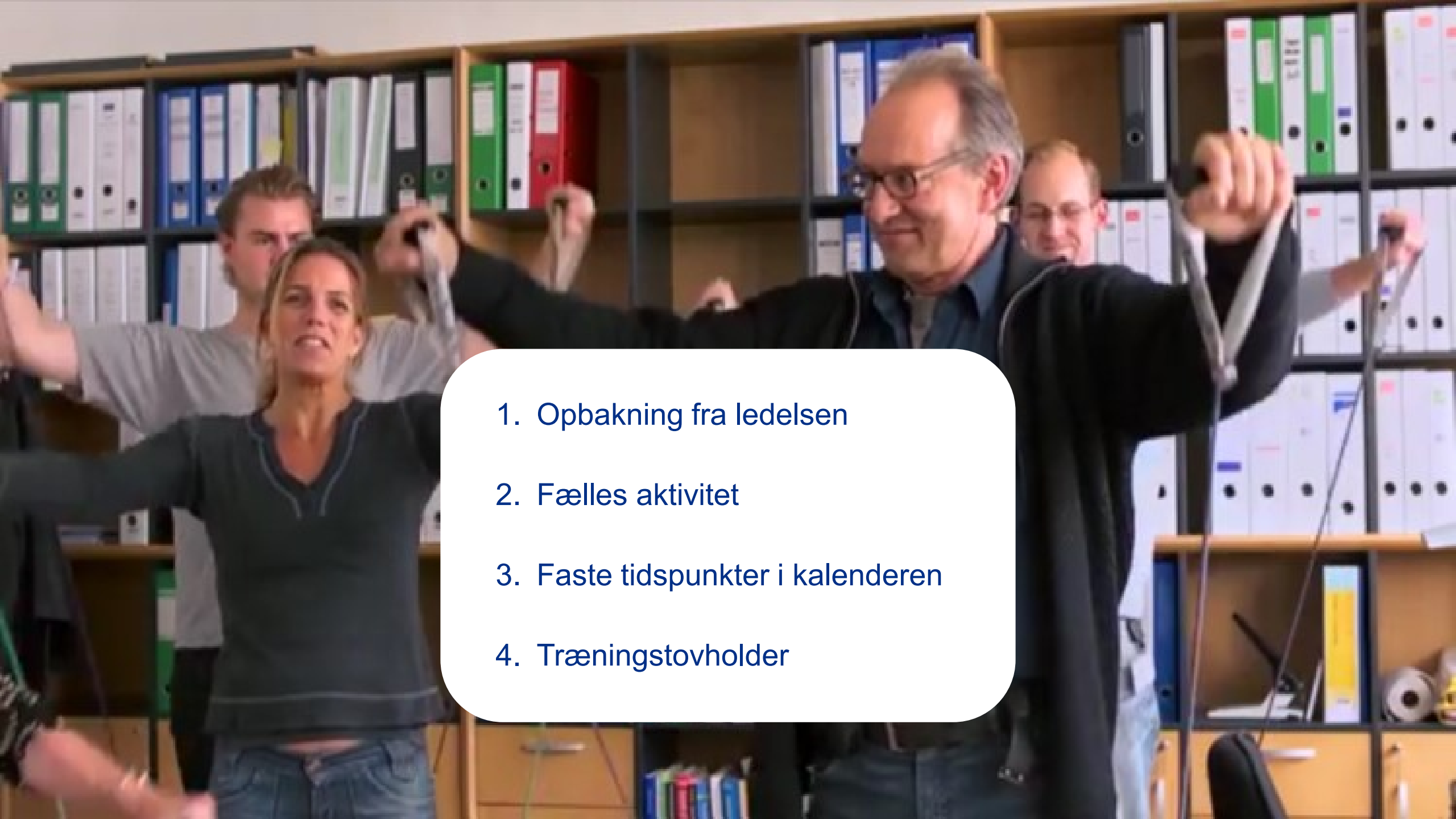
Results Per week, 2.2 (SD 1.1) and 1.0 (SD 1.2) training sessions were performed in WORK and HOME groups, respectively. Pain intensity, back muscle strength and use of analgesics improved more following WORK than HOME (P<0.05). Between-group differences at follow-up (WORK versus HOME) was -0.7 points for pain intensity [95% confidence interval (95% CI) -1.0– -0.3], 5.5 Nm for back muscle strength (95% CI 2.0–9.0), and -0.4 days per week for use of analgesics (95% CI -0.7– -0.2). The effect size for between-group differences in pain intensity was small (Cohen's d=0.31).

Conclusions Workplace physical exercise is more effective than home-based exercise in reducing musculoskeletal pain, increasing muscle strength and reducing the use of analgesics among healthcare workers.

Key terms back pain; healthcare; musculoskeletal disorder; MSD; neck pain; occupational health; shoulder pain; strength training.

Musculoskeletal disorders (MSD) can have individual consequences in terms of impaired physical function and quality of life, as well as socioeconomic consequences in terms of reduced work ability, increased sickness absence, and premature exit from the labor market (1, 2). A high prevalence of MSD (3) and long-term sickness absence (4) have been reported in occupations with physically demanding work. Healthcare workers frequently perform patient handling, which involves known risk factors for MSD such as awkward postures and high biomechanical loading of the back (5). Accordingly, among a population of 8000 Danish healthcare workers, 28% and 23% reported chronic pain in the neck/shoulders and lower back, respectively (6). The emerging global shortage in the healthcare workforce (7) highlights the importance of sustaining good musculoskeletal health among healthcare workers.

Although implementation of assistive devices and adequate training, supervision and manual handling techniques have increased the preventive efforts in the Danish healthcare sector, the incidence of MSD remain high (8). Thus, single strategy ergonomic interventions



1. Opbakning fra ledelsen
2. Fælles aktivitet
3. Faste tidspunkter i kalenderen
4. Træningstovholder

- *Andersen LL et al 2021*

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OPEN

Potential of micro-exercise to prevent long-term sickness absence in the general working population: prospective cohort study with register follow-up

Lars L. Andersen[1,2]✉, Sebastian V. Skovlund[1,3], Jonas Vinstrup[1], Niels Geisle[1], Stig I. Sørensen[1,4], Sannie V. Thorsen[1] & Emil Sundstrup[1]

This study assesses the potential of workplace-based micro-exercise (brief and simple exercise bouts) to prevent long-term sickness absence (LTSA) at the population level. In the Work Environment and Health in Denmark Study (2012–2018), we followed 70,130 workers from the general working population, without prior LTSA, for two years in the Danish Register for Evaluation of Marginalisation. We used Cox regression with model-assisted weights and controlled for various confounders. From 2012 to 2018, the percentage of workers in Denmark using workplace-based micro-exercise during and outside of working hours increased from 7.1 to 10.9% and from 0.8 to 1.4%, respectively. The incidence of long-term sickness absence (at least 30 days) was 8.4% during follow-up. The fully adjusted model showed reduced risk of long-term sickness absence from using micro-exercise during working hours, (HR 0.86, 95% CI 0.77–0.96), but not when used outside of working hours. If used by all workers, micro-exercise during working hours could potentially prevent 12.8% of incident long-term sickness absence cases (population attributable fraction). In conclusion, micro-exercise performed during working hours holds certain potential to prevent incident long-term sickness absence in the general working population. Large-scale implementation of workplace-based micro-exercise may represent an unexploited opportunity for public health promotion.

Sickness absence from work remains a major public health challenge with economic consequences for societies, employers and workers in terms of sickness benefit payments, lost productivity, lost earnings, and potential loss of paid employment[1,2]. Long-term sickness absence (LTSA) is especially problematic, accounting for up to 3/4 of total absence costs although constituting only a third of all lost working days[3]. In occupational research and practice, efforts to protect the health of workers have typically focused on reducing risk factors in the work environment, e.g. ergonomic and psychosocial risk factors[4]. By contrast, public health recommendations have largely focused on improving lifestyle, e.g. increasing physical activity and reducing sedentary behaviour[5]. However, during the last two decades, neither of these diverging efforts have succeeded in reducing sickness absence at the population level[2,6]. During recent years, occupational practice has integrated methods traditionally rooted in the public health domain, e.g. health promotion at the workplace in an attempt to prevent musculoskeletal disorders and sickness absence. While this may not be without challenges and remains far from widespread, randomized controlled trials (RCTs) assessing the effect of health promotion at the workplace have provided promising results in terms of workers' somatic and mental health[7–9]. For example, some workplace interventions have used *micro-exercise*, i.e. simple and brief strengthening exercises designed to strengthen the primary muscles used during work[10,11]. Following this, micro-exercise can therefore be performed with elastic resistance bands together with colleagues at the local workstation; typically for 10 min three times a week without the need

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5 programmer af 2 minutter med elastik

Skuldre, ryg og nakke

Nakke, håndled og skuldre

Øvre ryg og skuldre

Arme, nakke og lænd

Ben og lår

Kontakt

Professor Lars L. Andersen

LLA@NFA.DK

Det Nationale Forskningscenter for Arbejdsmiljø

Sundhedsmiljø: Sundere ved fyraften, end da du mødte ind

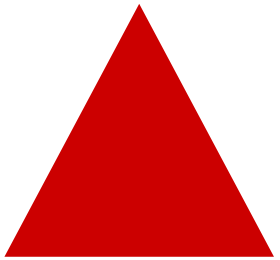
Ninna M. Wilstrup, Det Nationale Forskningscenter for Arbejdsmiljø (NFA)

Sundhedsmiljø

Dagsorden


Hvad er Sundhedsmiljø?
Hvordan kan man arbejde med Sundhedsmiljø?
Hvad er nøgleprincipperne for Sundhedsmiljø?

Sundhedsmiljø



Det Nationale Forskningscenter for Arbejdsmiljø

Vision

Sundere medarbejdere ved fyratten, end når de mødte ind på arbejdet

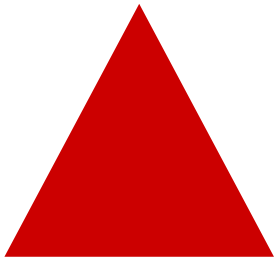
WHO's definition af 'sundhed'

En tilstand af fysisk, mental og socialt velvære

Ikke kun fravær af sygdom, men evne til at mestre udfordringer og skabe trivsel i dagligdagen

Hvad kendertegner Sundhedsmiljø?

Sundhedsmiljø

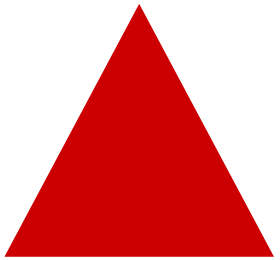


Det Nationale Forskningscenter for Arbejdsmiljø

Definition

En strukturel og helhedsorienteret tilgang, der styrker sundhed gennem arbejdets organisering

Sundhedsmiljø



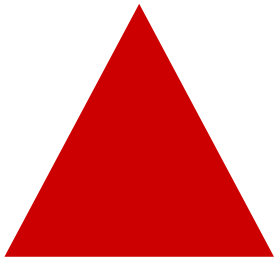
Det Nationale Forskningscenter for Arbejdsmiljø

Definition

En strukturel og helhedsorienteret tilgang, der styrker sundhed gennem arbejdets organisering

- … at tiltagene skal tænkes ind i de eksisterende rammer, vilkår og indhold i arbejdet.

Sundhedsmiljø



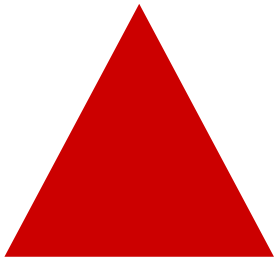
Det Nationale Forskningscenter for Arbejdsmiljø

Definition

En strukturel og helhedsorienteret tilgang, der styrker sundhed gennem arbejdets organisering

- …at sundhed tænkes bredt, så både fysiske, mentale og sociale aspekter indgår.

Sundhedsmiljø



Det Nationale Forskningscenter for Arbejdsmiljø

Definition

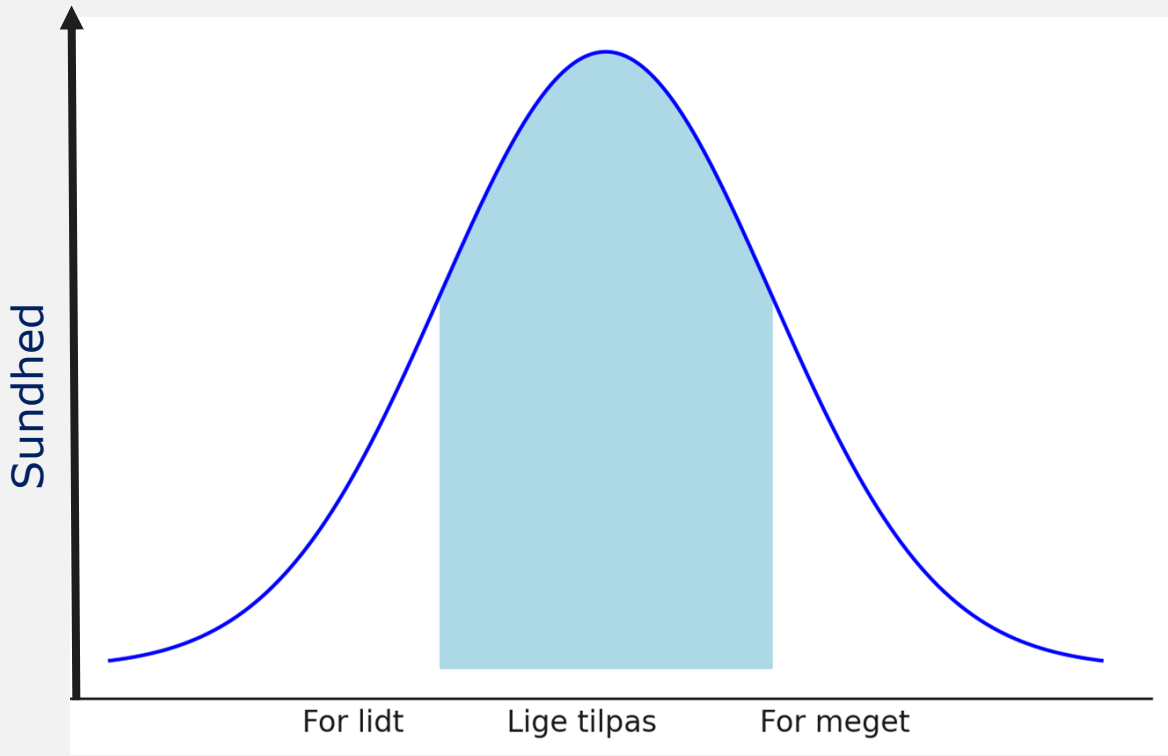
En strukturel og helhedsorienteret tilgang, der styrker sundhed gennem arbejdets organisering

- …så det ikke tager tid væk fra arbejdet og kerneopgaven.

Fokus på at organisere arbejdet ”lige tilpas”

Ikke kun godt – ikke kun dårligt,
men ”*lige tilpas*”

- **Udfordrende** arbejdsopgaver (ift. andel simple opgaver)
- **Team-arbejde** (ift. andel solo-arbejde)
- **Hurtigt** arbejde (ift. andel stille og roligt arbejde)
- **Siddende** arbejdsopgaver (ift. andel aktive arbejdsopgaver)
- Og mange flere…



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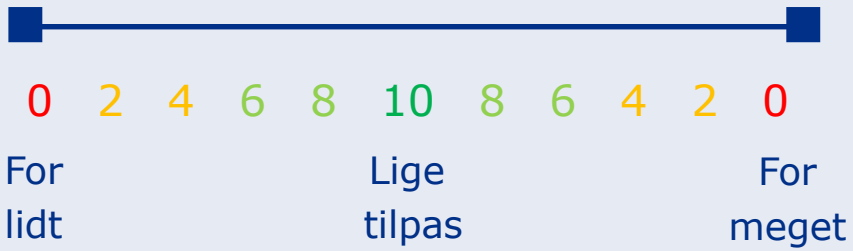
Sundhedsmiljø

Hvordan sætter man fokus på ”lige tilpas”?

Ud fra arbejdsdagen i går, hvilken score vil man give …

- Udfordrende opgaver
- Fordybelsestid
- Siddende arbejde
- Hurtigt arbejde

- *Andet relevant for dig …*



- Udfordrende opgaver 7
- ✚
- Siddende arbejde 6
- ✚
- Fordybelsestid 8
- 〓
- 7

Hvor tæt kommer du på 10?

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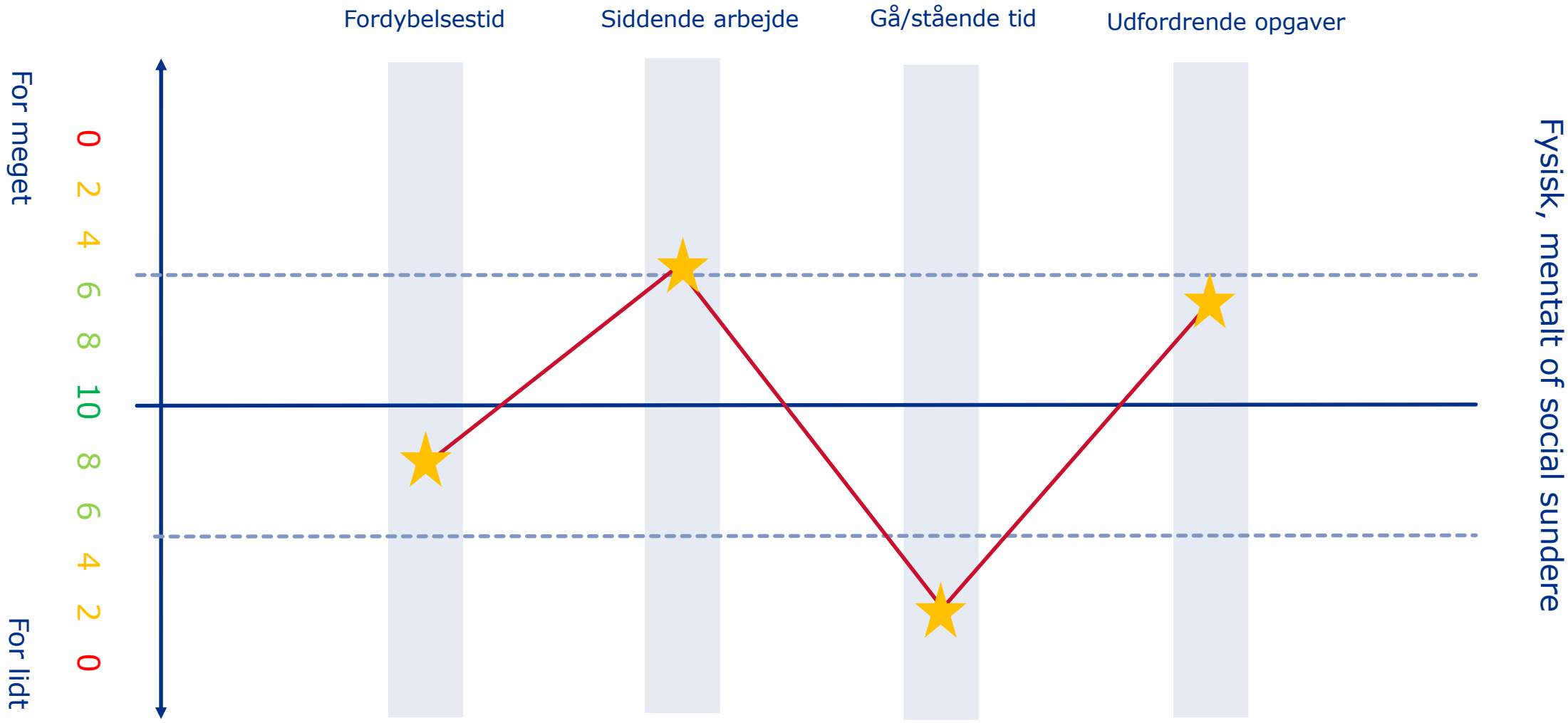
Sundhedsmiljø

Dialogværktøj til kortlægning af ”lige tilpas”



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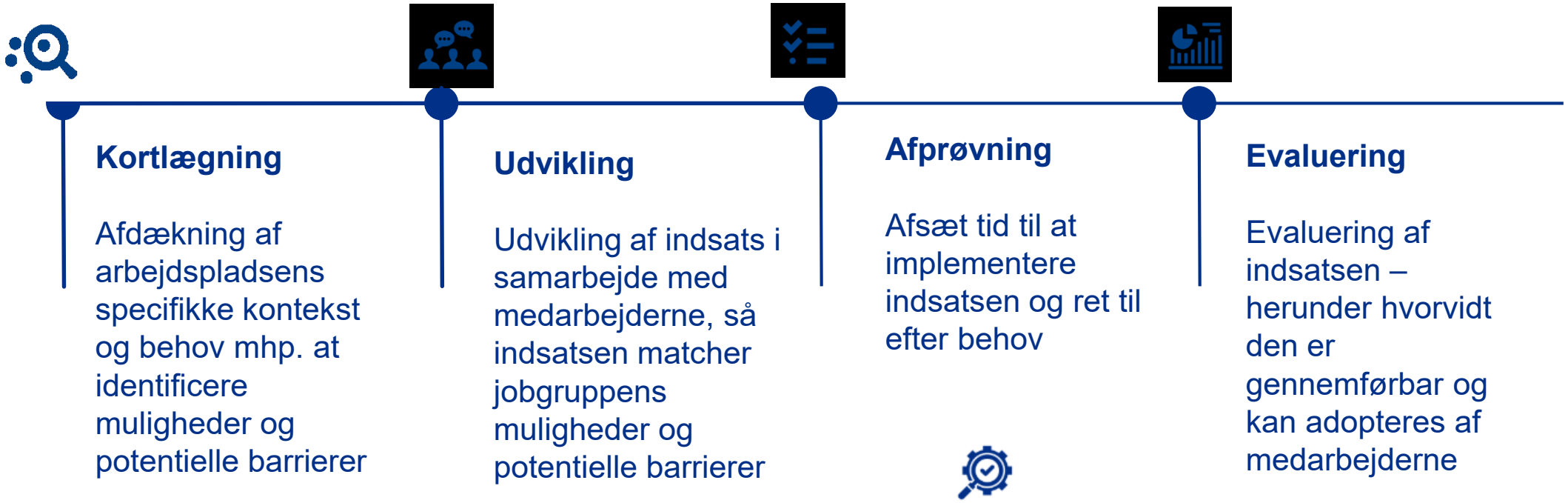
Sundhedsmiljø

Hvad er så nøgleprincipperne for Sundhedsmiljø?


Stræb efter en **passende balance** for fysiske, mentale og sociale påvirkninger i arbejdet, og anvend dem, når de styrker sundheden
Sigt mod at **styrke sundheden gennem arbejdets organisering,** uden at det tager tid væk fra arbejdet
Planlæg og tilrettelæg arbejdet, så det naturligt **understøtter en sund praksis**, i stedet for at være afhængig af den enkelte medarbejders motivation og ressourcer
Planlæg og udfør arbejdsopgaverne, så de **styrker fysisk, mental og social sundhed**, frem for kun at fjerne risikofaktorer

Processen for et Sundhedsmiljøprojekt



Kortlægning

Afdækning af arbejdspladsens specifikke kontekst og behov mhp. at identificere muligheder og potentielle barrierer

Udvikling

Udvikling af indsats i samarbejde med medarbejderne, så indsatsen matcher jobgruppens muligheder og potentielle barrierer

Afprøvning

Afsæt tid til at implementere indsatsen og ret til efter behov

Evaluering

Evaluering af indsatsen – herunder hvorvidt den er gennemførbar og kan adopteres af medarbejderne

Før I går i gang

1. Få en **fælles forståelse** på hele arbejdspladsen
2. **Inddrag** medarbejderne og find ambassadører
3. Gør det tydeligt, **hvordan** og **hvorfor** indsatsen kan betale sig
4. Sørg for, at ledelsen **bakker op**
5. **Følg op** regelmæssigt og ret ind efter behov

Hvilke vaner og arbejdsmåder kan vi omstrukturere, så de styrker sundheden?

Læs mere her:

www.sundhedsmiljo.dk

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Sundhedsmiljø

Tak for i dag

- Vil du vide mere? Tilmeld dig NFA's **nyhedsbrev** og følg os på **sociale medier.**