Vision Zero for occupational safety, health and wellbeing

Human Factors in Control
Organizational safety and safety culture .
current challenges and future directions
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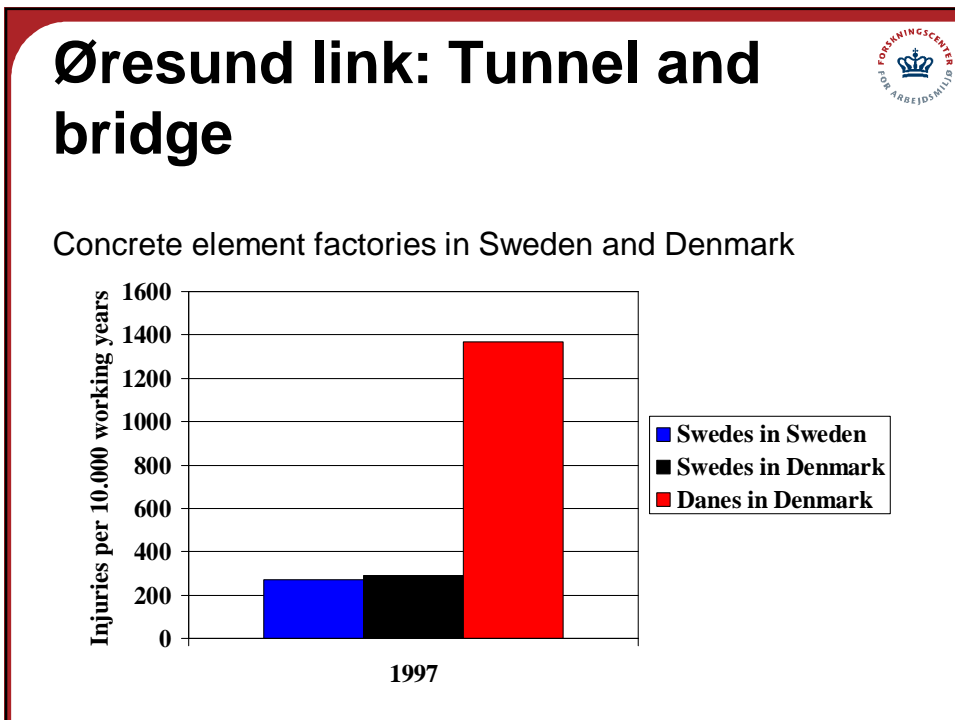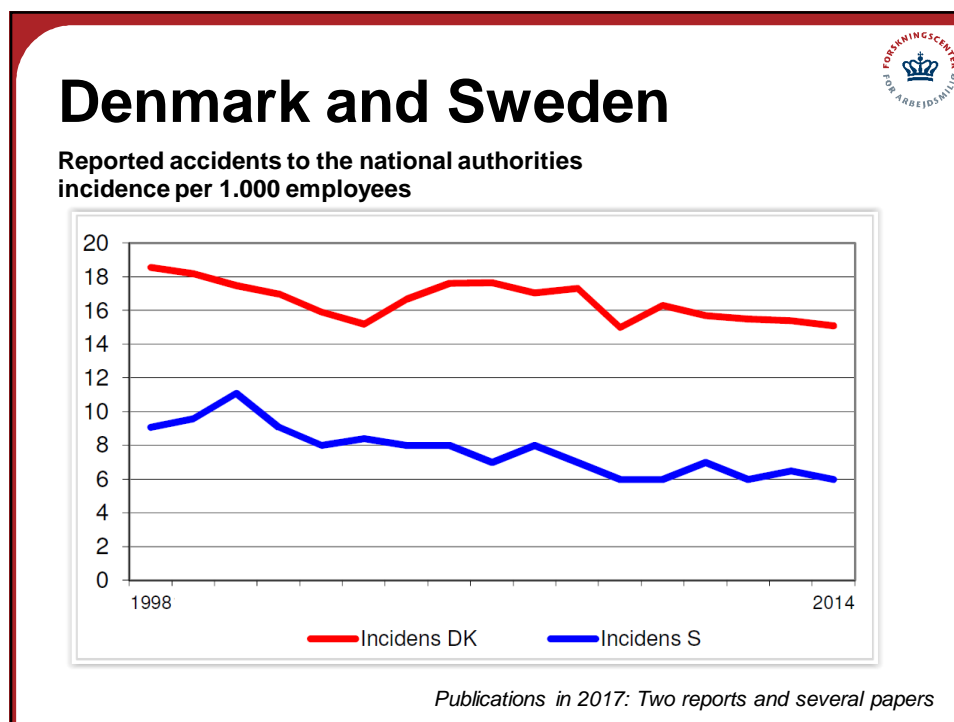# 3 ÏhotÐyet often misunderstood safety topics and tools

1. Safety cultures . modifiable factors?

2. Vision Zero . process or goal? Are we focusing on the right things?

3. What works in accident prevention?

õ and their relevance for Human Factors ☺

All recent research publications in 2017!!

Øresund link
tunnel and bridge from
Denmark to Sweden

Øresund link: Tunnel and bridge

Concrete element factories in Sweden and Denmark

Denmark and Sweden

**Reported accidents to the national authorities
incidence per 1.000 employees**

Incidens DK   Incidens S

Publications in 2017: Two reports and several papers

What factors contribute to lower occupational injury rates in Sweden than in Denmark?

Possible Macro . Meso - Micro level factors
˝ Safety legislation
˝ Education system
˝ National Authority Inspection practices
˝ Insurance company practices

˝ Safety climate
˝ Organisation, Leadership, Group and Individual factors
˝ Safety level from safety rounds at work sites and in schools
˝ Etcõ

Publications in 2017: Two reports and several papers

What factors contribute to lower occupational injury rates in Sweden than in Denmark?

Results

Macro level factors
˝ Company size
˝ Proportion of skilled workers, e.g. in the construction industry
˝ Greater preventive potential in the insurance system, as well as the way work legislation are implemented

Meso level factors
˝ Leadership style
˝ Planning and involvement
˝ Employment conditions
˝ Vocational schools' influence on students and internship companies

Micro level factors
˝ Future orientation
˝ Co-operation
˝ Collegiality

Are they modifiable? Transferable?

*Publications in 2017: Two reports and several papers*

What factors contribute to lower occupational injury rates in Sweden than in Denmark?

˝ The way legislation is implemented
˝ Formal and informal structures support more proactive collaboration (   )
˝ Power, participation and influence (not just involvement)
˝ Support long term relations . more collaborative and participative leadership
˝ Better understanding of the long-term consequences for OSH

Are they modifiable? Transferable?

Publications in 2017: Two reports and several papers

OSH culture maturity

OSH culture maturity model
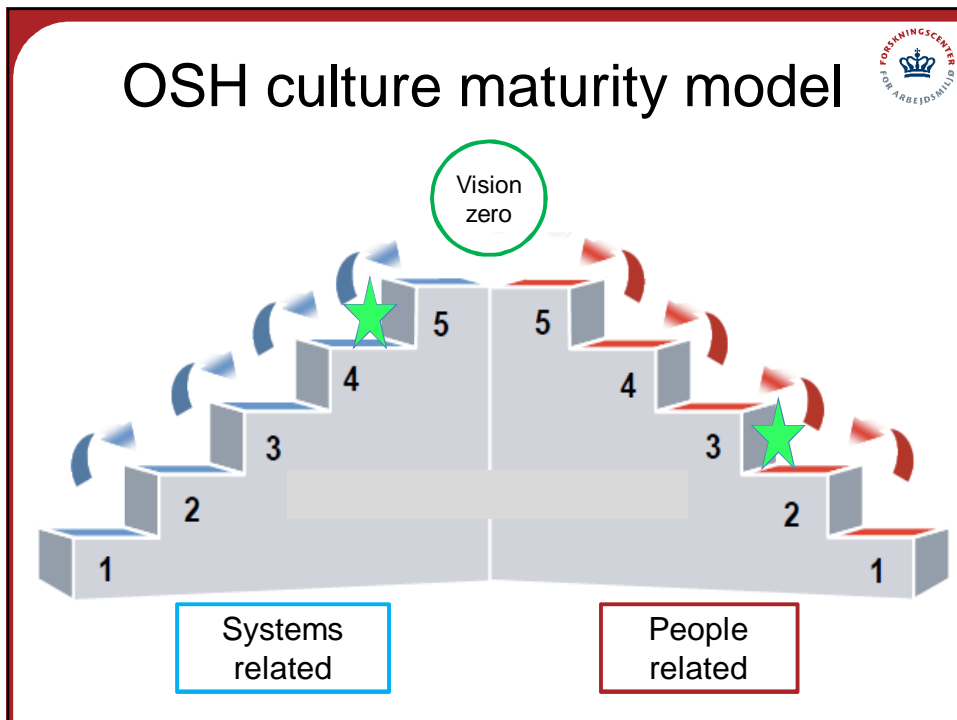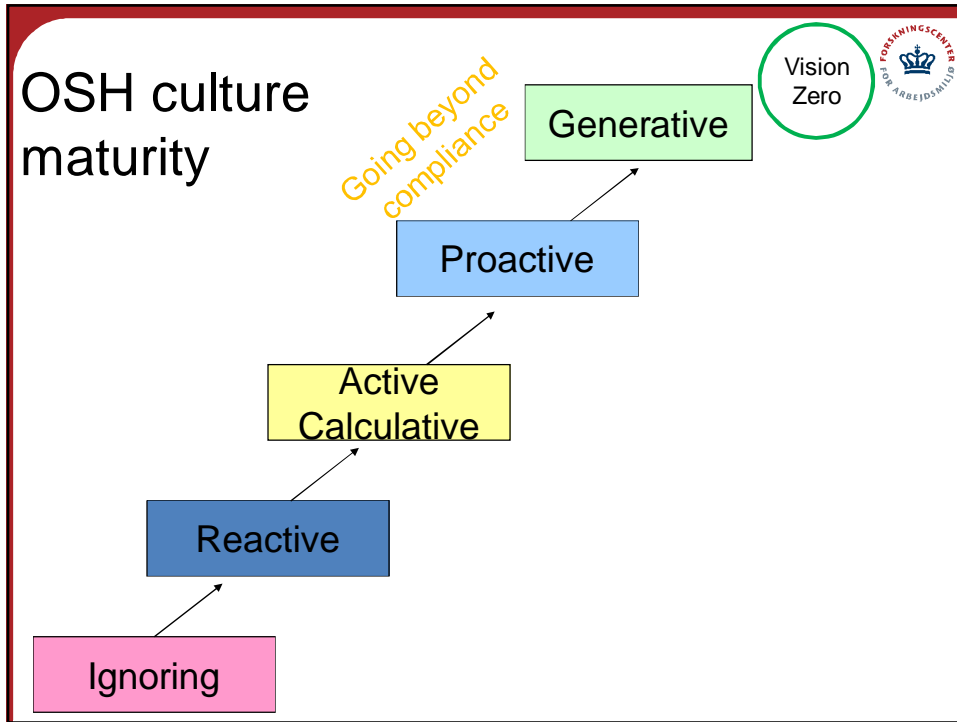
EU study Ë Vision Zero companies

˝ 7 EU countries, 27 companies

˝ Interviews, questionnaires and national workshops
˝ 8819 questionnaire respondents
˝ 66 % workers, 31 % leaders/managers/supervisors

˝ 13 manufacturing companies (51 % respondents)
˝ 7 construction companies (28 %)
˝ 7 other companies (21 %)

Publications: Zwetsloot, Kines et al. 2017a,b,c

Vision Zero for OSH

Commitment strategy
˝ From enterprise owners, leaders and workers

˝ Through policies, planning, procedures and practice

˝ **All OSH problems are preventable**
  (accidents, injuries, psychosocial, disease, etc.)

˝ ***A process .*** *not a goal*

Traditional OSH approach vs. Vision Zero

OSH **control** strategy	OSH **commitment** strategy
OSH is **goal** driven	OSH is a **journey**, a process
Preventing accidents & disease	**Creating** safe & healthy work
OSH **programs**	OSH is an integrated part of **business**
OSH risk **management**	Business **leadership**
OSH owned by **few**	OSH owned by **all**
Benchmark on **injuries** & **illness**	Benchmark on **good practice** and **leading indicators**
OSH is a **cost**	OSH is an **investment**
Workers are part of the **problem**	Workers contribute to **solutions**
Incidents are **failures**	Incidents are **opportunities** for learning
OSH management **systems**	OSH **culture** and **learning**

Vision Zero for health, safety and wellbeing

˝ Creating safety, health and wellbeing at work

˝ Long-term <u>investment</u> and <u>commitment</u>

˝ Work <u>and life</u> ☺

Vision Zero: Good practice 1

˝ OSH commitment . a part of **hiring** process for **all** leaders and employees

˝ Involve **stakeholders**, business partners, subcontractors, suppliers, etc.

˝ **Relevant** communication strategy at all organisational levels

˝ **Multi-faceted** and **integrated** OSH initiatives that allow **decentralized** initiatives

Vision Zero: Good practice 2

˝ Ensure **relevant**, **qualified** and **structured** introduction, instruction, supervision and follow-up

˝ Vision Zero companies - **leader-networks** (e.g. Finland 300+ companies, Germany 90+, Netherlands, etc.

˝ **Action** and **learning** from ±observations¢and ±near-miss¢ incidents

˝ Reactive and **proactive** measures (KPI)

Vision Zero

Sydney Dekker 2017

˝ %o stop looking for a complete deletion of negative events in our pursuit of zero, and instead focus on an <u>enhancement of the positive capacities that make things go right</u>+(e.g. resilience engineering)

˝ %f we want to move toward zero losses (and particularly zero fatalities and life-changing injuries), then we should not be obsessed with the ±oles q(or minor injuries) that show up in safety management systems. Instead, <u>we should study success</u>. We need to form a deep understanding of how things actually go right, and then <u>enhance the system q capacity to make even more things go right</u>+

Reactive to proactive KPI Lagging to leading indicators

A. OSH education and training (leaders and workers)

B. Ensure relevant, qualified and structured introduction, supervision, follow-up and learning

C. OSH leadership . daily priority, communication

D. OSH culture and climate (empowerment, reporting)

E. OSH incident (near miss) analysis, action, follow-up, evaluation and learning

F. <u>OSH observations</u> (working conditions and behaviour)

G. Etcõ .

Safety index
Observations of safety conditions and behaviour
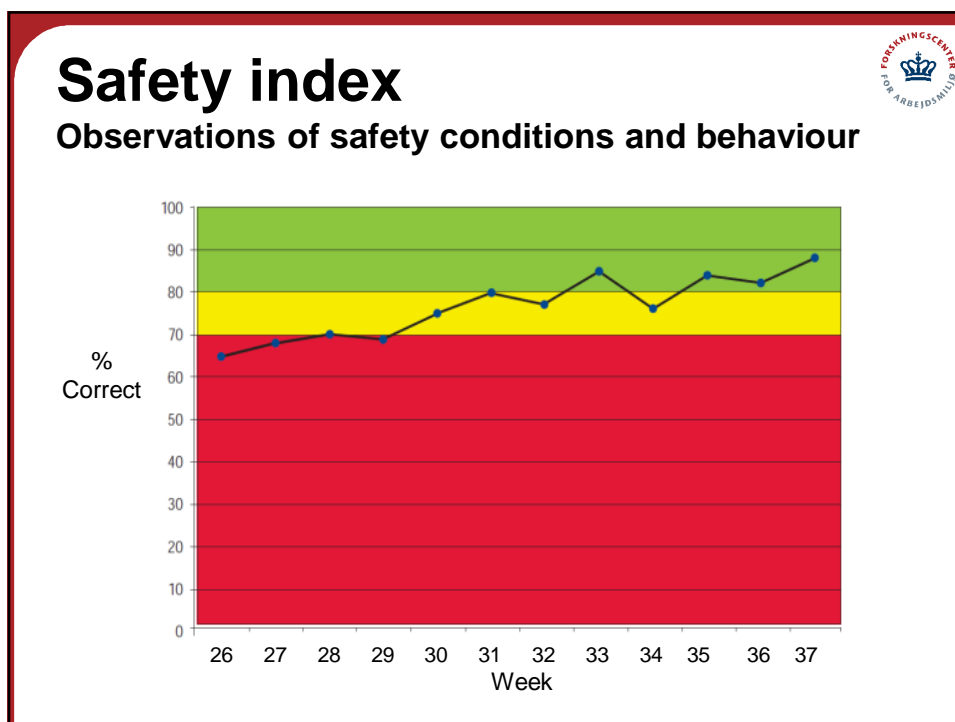
±Safety Observerqapp

Available for Ipad now on app store
For smartphones and tablets . IOS and Android (available June 2017)

Toolbox-training for leaders

Improving knowledge and skills with **8 OSH topics and tools**

1. Roles and responsibilities
2. Communication (questioning techniques and feedback)
3. Body language (nonverbal)
4. Cross-cultural communication
5. Conflict management
6. Leadership and cooperation
7. Planning systems (an adapted lean construction model)
8. Prevention of injury and work related disease, as well as improving OSH on construction sites

Jeschke, Kines et al. Safety Science, 2017

Energi Norges kurs i nullvisjonen og sikker planlegging 2017

˝ 8 hour course

˝ Confederation of Norwegian Enterprises - Working Environment Fund
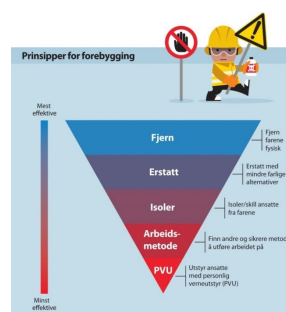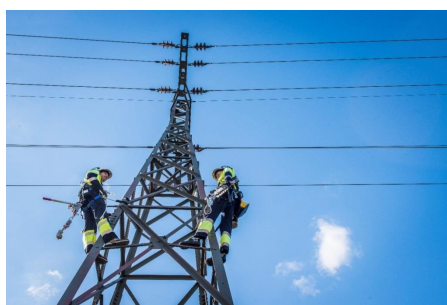
Accident prevention - what works?

″ Systematic review 40,000+ published articles, ~300 studies included

Safety initiatives targeted towards changing:
″ Knowledge and attitudes ☹ *(do not work by themselves)*
″ Human physiology ☹
″ Human behaviour (e.g. safety training) ☹
″ Organization ☹
″ Safety norms, climate or culture ☺ ☹
″ Use of technical assistive devices ☺
″ Tools and machines (physical) ☺

″ Integrated initiatives!!! (combinations) ☺ ☺ ☺

Dyreborg, õ Kines et al, 2015

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All recent research publications in 2017!!

Some recent referencesÅ

Jeschke, Kines, Rasmussen, Andersen, Dyreborg, Ajslev, Kabel, Jensen & Andersen (2017). Process evaluation of a Toolbox-training program for construction foremen in Denmark. Safety Science, 94, 152-160. OPEN ACCESS . free download

Zwetsloot, Kines, Wybo, Ruotsala, Drupsteen & Bezemer (2017). Zero Accident Vision based strategies in organisations: Innovative perspectives. Safety Science, 91, 260-268

Zwetsloot, Kines, Ruotsala, Drupsteen, Merivirta, Bezemer (2017). The importance of commitment, communication, culture and learning for the implementation of the zero accident vision in companies. Safety Science, 96, 22-32. OPEN ACCESS . free download

Zwetsloot, Leka, Kines. (On-line April 2017). Vision Zero: from accident prevention to the promotion of health, safety and wellbeing at work. Policy and Practice in Health and Safety. Free download to first 50 respondents

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DK-SE reports and papersÅ

Nielsen, K.J.; Törner, M.; Dyreborg, J.; Grill, M.; Grytnes, R.; Hansen, C.D.; Kines, P.; Pousette, A. (2017). Arbejdsulykker i Danmark og Sverige. Identificering af virkemidler og strategier, der kan overføres fra Sverige til Danmark. Dansk Ramazzini Center, Arbejdsmedicinsk Klinik, Hospitalsenheden Vest, Universitetsklinik, Herning.

Törner, M et al. (2017). Skillnader i arbetsolycksfrekvens mellan dansk och svensk byggindustri . en jämförande studie för att förstå bakomliggande faktorer (SveDan). Slutraport til AFA-försäkring.

Nielsen (2017). A comparison of inspection practices within the construction industry between the Danish and Swedish work environment authorities. Construction Management & Economics, 35(3),154-169.

Grill, Pousette, Nielsen, Grytnes, Törner (2017). Supervisors and teachersqinfluence on expectations on empowering leadership among students in vocational education and training. Empirical research in Vocational Education and Training, 9, article 2.

More articles in-pressõ .

Thank you for your attention

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