

# **Stress-related exhaustion - Biological and cognitive perspective (og nogle andre ting😊)**

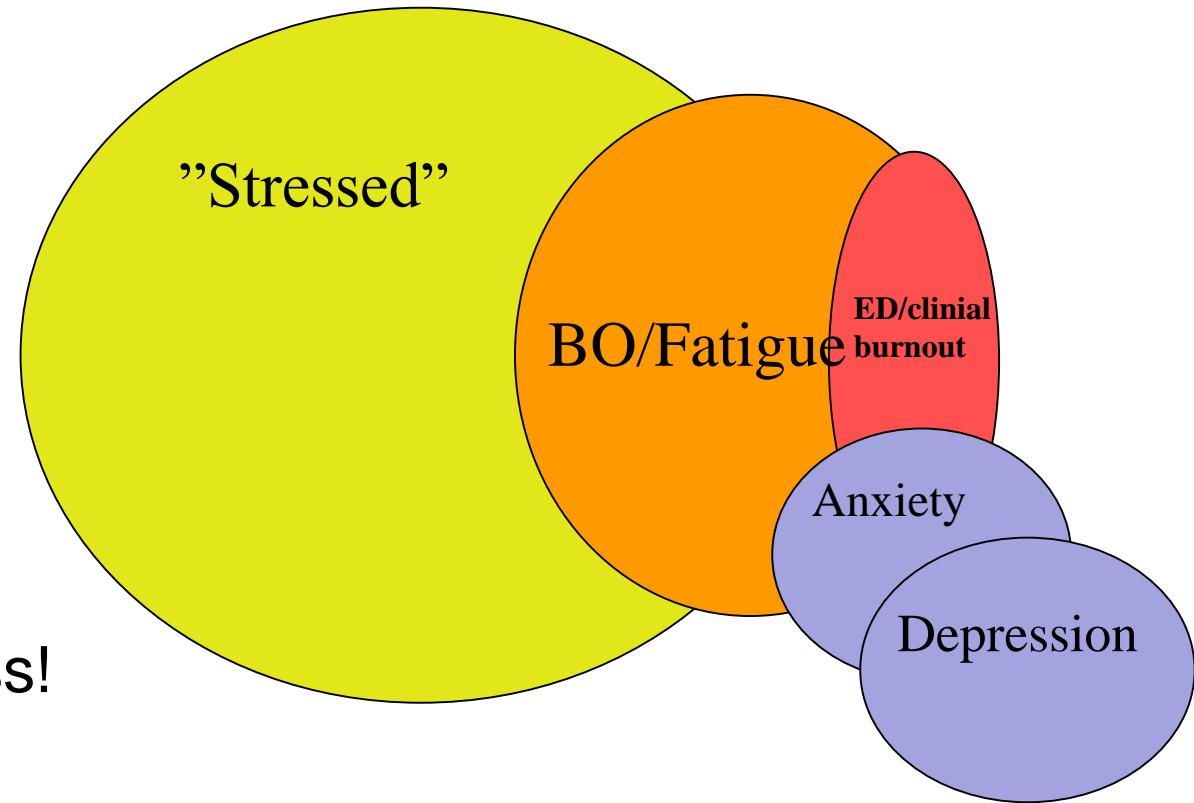
**Professor Ingibjörg H. Jónsdóttir  
Director, Institute of Stress Medicine, Gothenburg**

# The Institute of Stress Medicine, Gothenburg, Sweden

R&D center for stress-related research involving different aspects including; Organization, leadership, work-related stress, prevention clinical studies, treatment, sick-leave, stress biology, brain and the molecule

## Prevention and treatment!

- ✓ The patient group!
- ✓ Disease vs reaction to stress!
- ✓ Health care system vs Wellness!
- ✓ The profession!
- ✓ Evidens (promotion/prevention/treatment)!
- ✓ Evidence related to outcome (symptoms, return to work, work ability)!



# Nine in 10 healthcare workers feel understaffed and under-resourced

-UK-

“What every school system in Australia needs to urgently address are the levels of burnout, stress and additional responsibility being loaded onto principals,” Professor Riley said.



## Arbetsmiljöyheter

Half a million people in the UK suffer from work-related stress, and psychological breakdown can creep up without warning. But what, exactly, is this ‘state of vital exhaustion’, and how can you come back from it?

13/03/2017

### FR - Burn out – report of the national assembly

During the debate on the Social Dialogue and Employment in 2015 legislation in 2015 and 2016, amendments, backed by many MPs, proposed to include burnout into the list of occupational diseases and integrate it into the existing compensation system. This proposal was not accepted; as a result of these debates, the Bureau of the Committee on Social Affairs of the National Assembly decided to set up an information mission. In 37 public hearings, the voices of victim associations, mental health professionals,



# Organizational factors – examples

Role and mandate for managers unclear

Unclear management

Large groups of employees

Unclear goals

Poor communication

Poor understanding between different

Unclear job descriptions

Role ambiguity



# Höga ohälsotal inte ett kvinnoproblem

**KVINNORS ARBETSMILJÖ** Kvinnors höga sjukskrivningstal beror inte på kvinnorna själva utan på att arbetsituationen ser olika ut för män respektive kvinnor. Det framkommer i en ny rapport från Arbetsmiljöverket.

En av regeringens stora utmaningar är ohälsotalen som ökar kraftigt just nu och i synnerhet för kvinnor. Men en ny kunskapssammanställning, som gjorts vid Stockholms universitet och Stressforskningsinstitutet på uppdrag av Arbetsmiljöverket, visar att det inte finns några skillnader mellan kvinnor och män om villkoren är lika.

– Det finns en tendens när det gäller kvinnor att inte fokusera så mycket på arbetet utan på privatlivet. Man säger att kvinnors sjukskrivningar beror på barn och privata omständigheter. Men när kvinnor och män exponeras för samma risker så drabbas de av ohälsa i samma utsträckning, sa Irene Wennemo, statssekreterare på Arbetsmarknadsdepartementet, när hon inledningstalade på ett seminarium om kvinnors och mäns arbetsvillkor arrangerat av Arbetsmiljöverket.

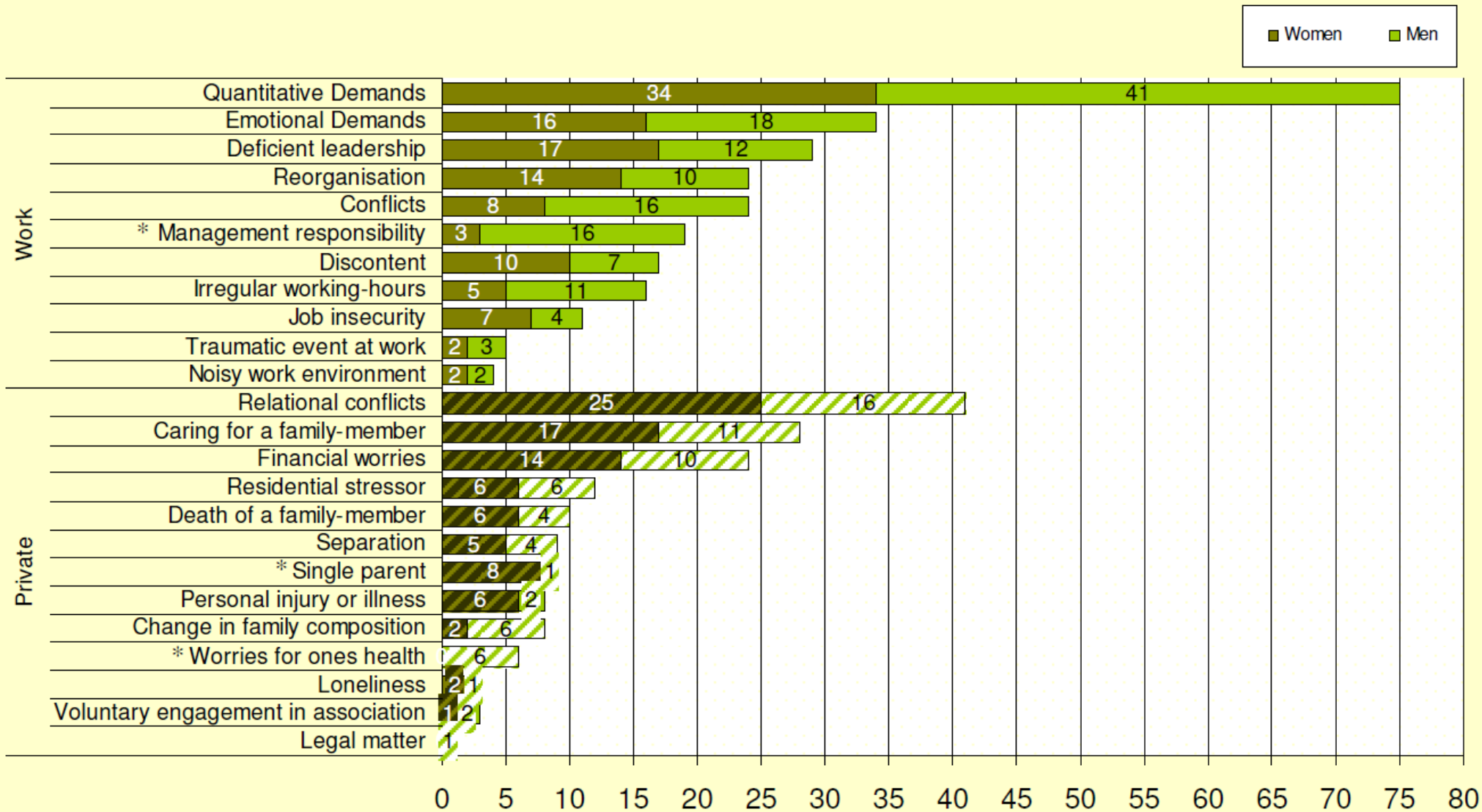
## MER OM ATT MÅ BRA

- Peppa dig ur mitt-i-livet krisen
- Viktigt att trivas på jobbet
- Tips för att må bättre på jobbet
- Naturligt med vårtrötthet

**”Det har visat sig att också män som arbetar under samma villkor; såsom hög arbetsbelastning, brister på resurser, ohälsosamma arbetstider och kränkande särbehandling, drabbas i samma utsträckning som kvinnor”**

*Erna Zelmin-Ekenhem, generaldirektör på Arbetsmiljöverket*





**Figure 1:** Number of individuals reporting each stressor .

The difference of proportions between men and women were analysed by using % confidence interval (marked as \*).



# Clinical burnout/Exhaustion disorder

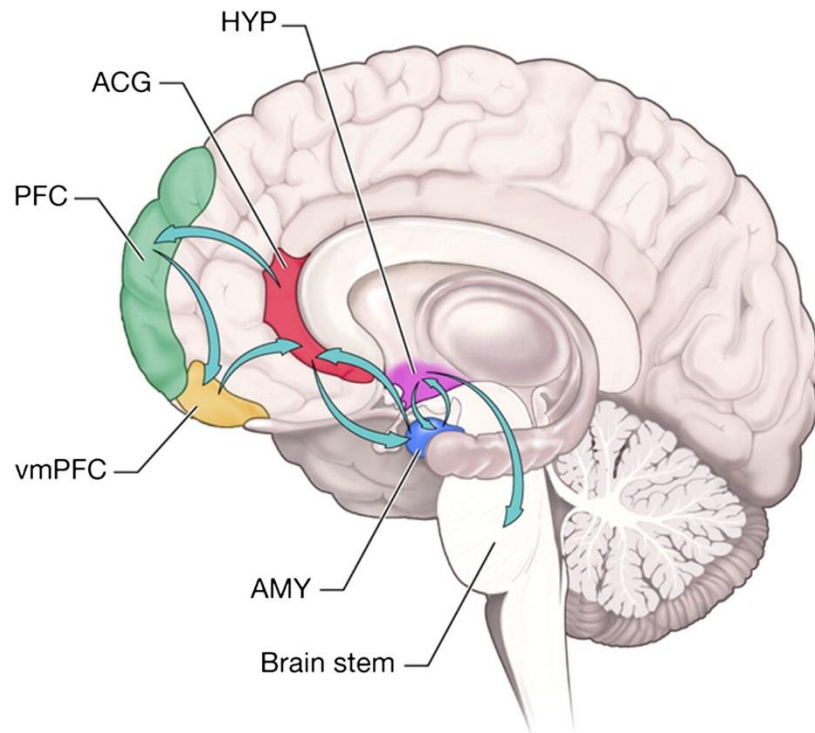
Fatigue

**Cognitive impairments**

Sleep disturbances

Depression

- Cognitive impairments are common in clinical burnout/exhaustion
- **Mainly attention/executive function/working memory**
- Long-term effects
- No clear difference between men and women



Van der Linden et al 2005, Sandström 2005, Öhman et al 2006, Rydmark et al 2007, Österberg et al 2009, Jovanovic et al 2011, Sandström et al 2011, Van dam 2011, Jonsdottir et al 2013, Oosterholt et al 2014, Eskildsen et al 2015, Eskildsen et al 2016, Jonsdottir et al 2017.

# Executive function and attention in patients with stress-related exhaustion: perceived fatigue and effect of distraction

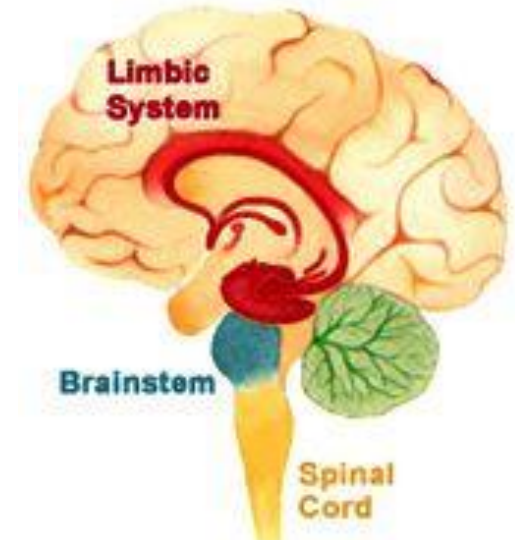
David Krabbe , Susanne Ellbin, Michael Nilsson, Ingibjörg H. Jonsdottir & Hans Samuelsson  
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Chronic stress is linked to 5-HT<sub>1A</sub> receptor changes and functional disintegration of the limbic networks

H. Jovanovic<sup>a</sup>, A. Perski<sup>b</sup>, H. Berglund<sup>c</sup>, I. Savic<sup>a,\*</sup>

Poorer connection between the limbic system and prefrontal cortex

Serotonin receptor binding i limbiska systemet is downregulated (hippocampus, anterior cingulate cortex (ACC), och anterior insular cortex)



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PLOS ONE

## The Influence of Work-Related Chronic Stress on the Regulation of Emotion and on Functional Connectivity in the Brain



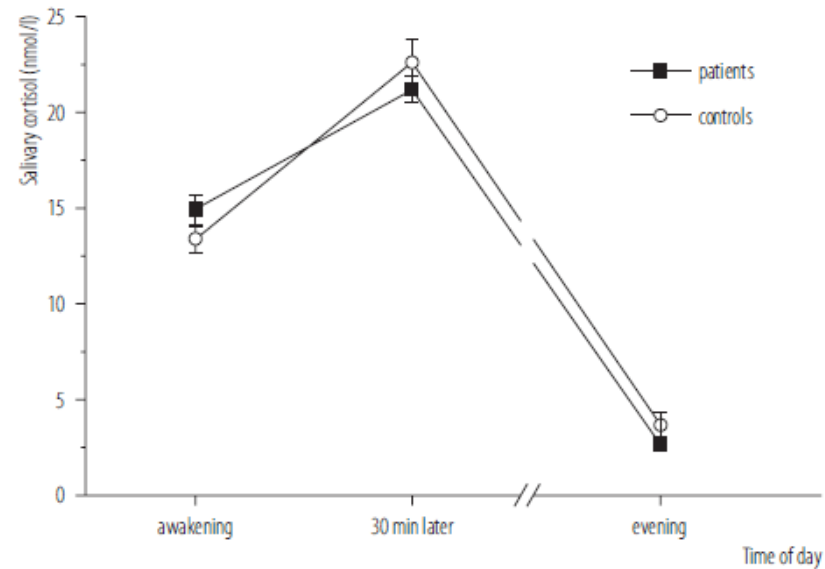
Armita Golkar<sup>1</sup>, Emilia Johansson<sup>1</sup>, Maki Kasahara<sup>1</sup>, Walter Osika<sup>1,2</sup>, Aleksander Perski<sup>3</sup>, Ivanka Savic<sup>4\*</sup>

NeuroImage 55 (2011) 1178–1188

# NO ALTERATIONS IN DIURNAL CORTISOL PROFILES BEFORE AND DURING THE TREATMENT IN PATIENTS WITH STRESS-RELATED EXHAUSTION

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**Fig. 2.** Mean salivary cortisol concentrations (bars represent standard errors) at different times of the day for the patients with stress-related exhaustion (N = 122) and for the healthy

## Plasma metabolomic patterns in patients with exhaustion disorder

Jenny Hadrévi<sup>a</sup>, Ingibjörg H. Jonsdóttir<sup>b,c</sup>, Per-Anders Jansson<sup>d</sup>, Jan W Eriksson<sup>e</sup> and Anna Sjörö<sup>b,f</sup>

Amino acids		Fatty Acids		Sugars and sugar alcohols	
A	B	A	B	A	B
	2-AMINO BUTYRIC ACID	↑	3-HYDROXYBUTYRIC ACID	↓	1,5-ANHYDRO-D-GLUCITOL
	ALANINE		DOCOSAHEXAENOIC ACID	↓	↑ ARABITOL
↓	↑ ASPARAGINE	↑	DODECANOIC ACID		CELLOTRIOSE
	BETA-ALANINE		HEPTADECANOIC ACID	↓	LACTULOSE
↓	↑ CITRULLINE	↑	HEXADECANOIC ACID		MALTOSE
	CREATININE	↑	OCTADECADIENOIC ACID	↓	↑ RIBITOL
↓	↑ CYSTEINE	↑	OCTADECANOIC ACID	↓	↑ scyllo-INOSITOL
	CYSTINE	↑	↑ OCTADECENOIC ACID	↓	↑ XYLITOL
↓	↓ GLUTAMINE				
↓	↓ GLYCINE				
↑	↑ LYSINE				
↓	METHIONINE				
	ORNITHINE				
↓	↑ PHENYLALANINE				
↓	↑ PYROGLUTAMIC ACID				
↓	↓ SERINE				
	↑ THREONINE				
↓	↑ TRYPTOPHAN				
	TYROSINE				
↑	VALINE				

Organic acids		Other	
A	B	A	B
↓	ACONITIC ACID	↓	4-HYDROXYPHENYLACETIC ACID
↓	CITRIC ACID	↓	ADENOSINE-5-MONOPHOSPHATE
↓	↓ GLUCONIC ACID		GLYCOLIC ACID
	INDOLE-3-ACETIC ACID		UREA
	↓ MALIC ACID		1-PALMITOYL-snGLYCERO-3-PHOSPHOCHOLINE
	PIPECOLIC ACID	↑	ALPHA-TOCOPHEROL
	SALICYLIC ACID	↓	GAMMA-TOCOPHEROL
↓	TARTARIC ACID		
↑	URIC ACID		

# Some concluding remarks

- ✓ We need to start focusing on the organizational and psychosocial work environment
- ✓ We need to start working on the gender issue
- ✓ Different groups, different solution, not always the health care system that should be involved
- ✓ Different perspective, different solution!
- ✓ **Clinical burnout/exhaustion patients are really sick**
- ✓ **Mobilization of energy is affected**
- ✓ **We can not rely in clinical objective markers**
- ✓ **Brain function is affected, the question is how long it will take**



[www.vgregion.se/stressmedicin](http://www.vgregion.se/stressmedicin)



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Meddelanden

Aviseringar 3