

Testing mindfulness in a military aviation context



HFM 302 – Symposium Evidence Based Leader Interventions for Health and Well Being

Anders.meland@flymed.uio.no

Ph.D / Norwegian Defence Forces / Medical Services – Institute of Aviation Medicine



Flymedisinsk institutt
Institute of Aviation Medicine



Photo: Privat



Photo: Privat



Photo: Forsvaret



Photo: NTB scanpix

[Home](#)
[Global Cup](#)
[Per Capita Cup](#)
[Sports](#)
[Football](#)
[Athletics](#)
[Basketball](#)
[Golf](#)
[Tennis](#)
[Cycling](#)
[Rugby Union](#)
[Swimming](#)
[Volleyball](#)
[Boxing](#)
[Skiing](#)
[All Sports](#)
[Tournaments](#)
[All](#)
[Recent](#)
[Olympics](#)
[Countries](#)

Norway



Norway Leads Global Cup, Per Capita Cup after March

The first quarter of the 2019 sporting year is over and, like last year, the spotlights are all on Norway.



Norway Wins March Global Cup Ranking

March 2019 was the year's first bumper sporting month, with 7,999 GSN points awarded.



Norway the world's sportiest nation in 2018

For the second year in succession, Norway was crowned as the world's sportiest nation, winning the 2018...



Norway firmly on top of Per Capita Cup after June

At the end of June, and despite not scoring any GSN points in the month, Norway held on to its very comforta...



Norway Triumphs in Snow & Ice Sports Ranking

It was pretty much a foregone conclusion, after Norway's historic victory at the Py...



Norway's Domination of World Sport Continues

Norway won the month of March in the **Global Cup**, the ranking of the world's best sporting nations...

Global Cup

[2019](#) [2018](#) [2017](#) [2016](#) [2015](#)
[More](#)

Top Positions	Points	%	Chg
1 Norway	1378	10.6%	3
2 Germany	992	7.7%	1
3 Russia	987	7.6%	2
4 France	849	6.6%	2
5 Italy	768	5.9%	5
6 Austria	693	5.4%	1
7 United States	665	5.1%	-6
8 Japan	616	4.8%	-6
9 Netherlands	582	4.5%	-1
10 Sweden	561	4.3%	3

Per Capita Cup

[2019](#) [2018](#) [2017](#) [2016](#) [2015](#)
[More](#)

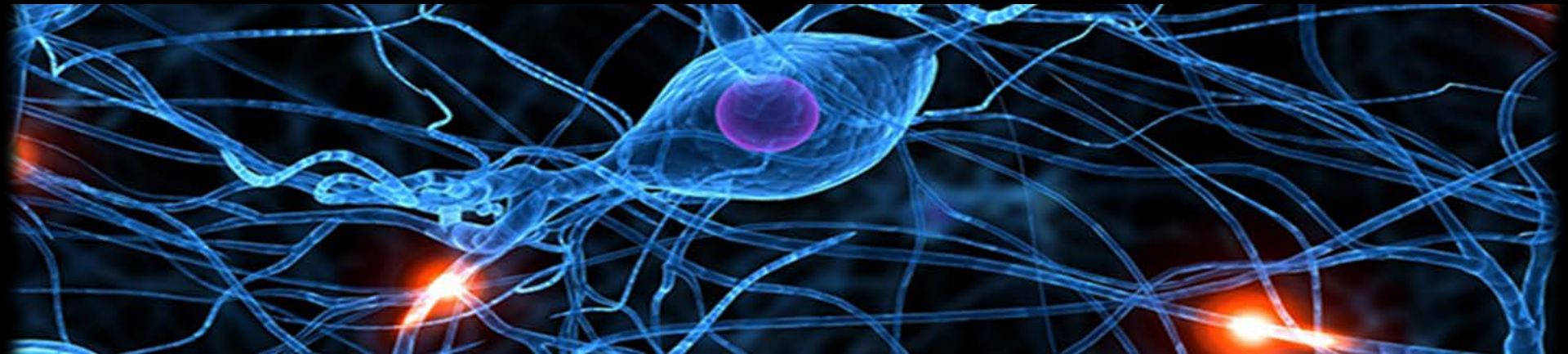
Top Positions	People Per Point	Chg
1 Norway	3831	
2 Austria	12690	
3 Switzerland	16232	
4 Slovenia	16527	
5 Sweden	17970	-1
6 Slovakia	20200	





A method that may engage, awareness, attention control and coping with pressure at a fundamental level in high performance cohorts is **mindfulness**

(Jha et al., 2010)



Mindfulness

“Paying attention on purpose, in the present moment, non-judgementally”

(Kabat-Zinn, 2003)

“A sharpened state of awareness...”

(Mayer, Salovey, & Caruso, 2000)

...shown to reduce the negative consequences of stressors, without compromising attention- and action control

(Tang et al., 2015; Amishi Jha et al., 2011; 2015;2016; Meland et al., 2015)



Mindfulness (five facets)



(Baer et al., 2006)

Mindfulness-training:

All activities with the aim of improving the level of mindfulness

(Kabat-Zinn 2003)

Mindfulness-training



INSTRUCTIONS

Returning to here and now...

Observing...

Being with what is...

Letting go...

Mindfulness-training

Plenary



Individual

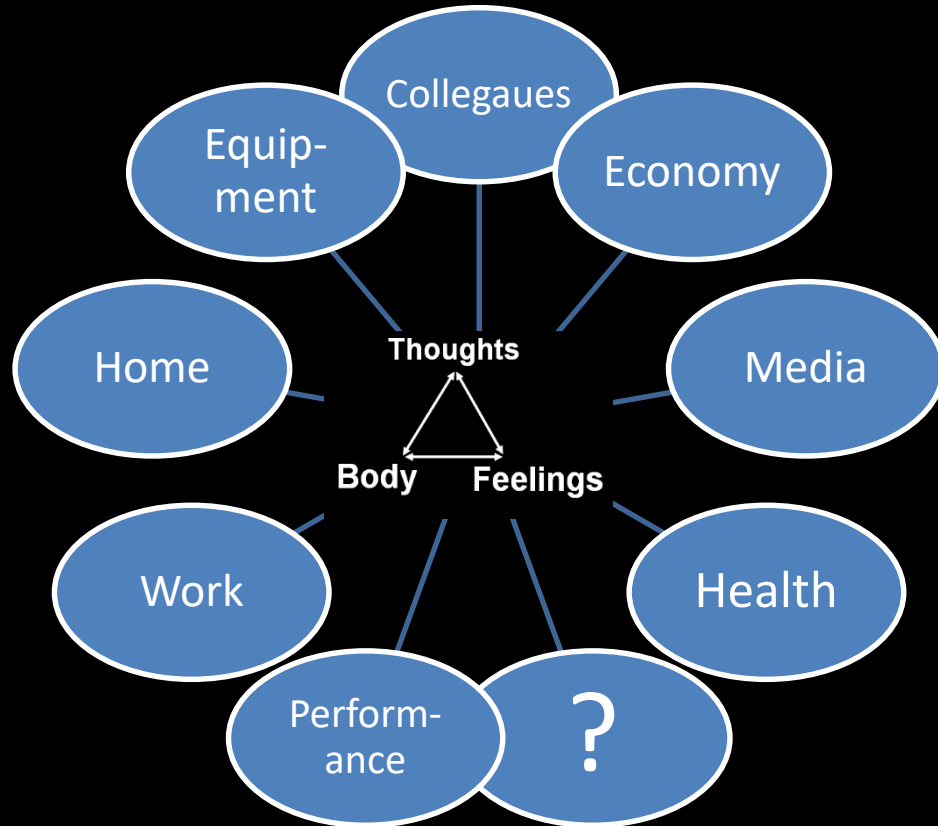


Spouse



Lead by example!

How does it work?



Reallocate attention

Exposure to what is

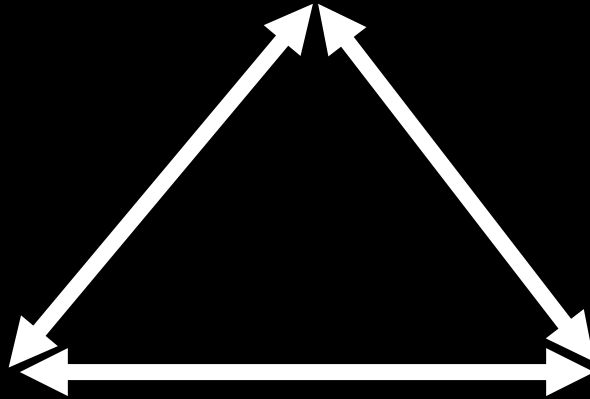


Executive control

*Reduced activation from
stressors*

Self- and meta-awareness

Thoughts



Body

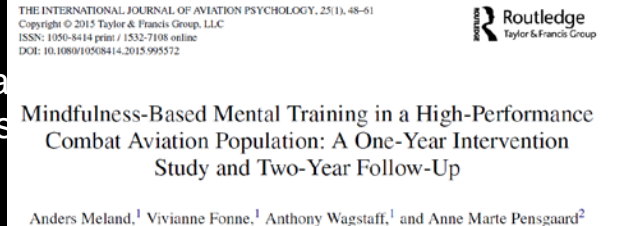
Feelings

Four studies



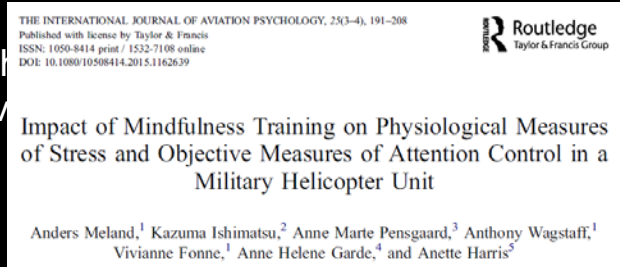
Study 1 (n = 21)

A one-year intervention study with two-year follow-up in a high-performance combat aviation population (subjective measures)



Study 2 (n = 40)

A four month intervention study with a Bell-412 helicopter unit (subjective measures)



Study 3 (n = 50)

A four month intervention study in a Bell-412 helicopter unit (subjective measures)



Study 4 (n = 150)

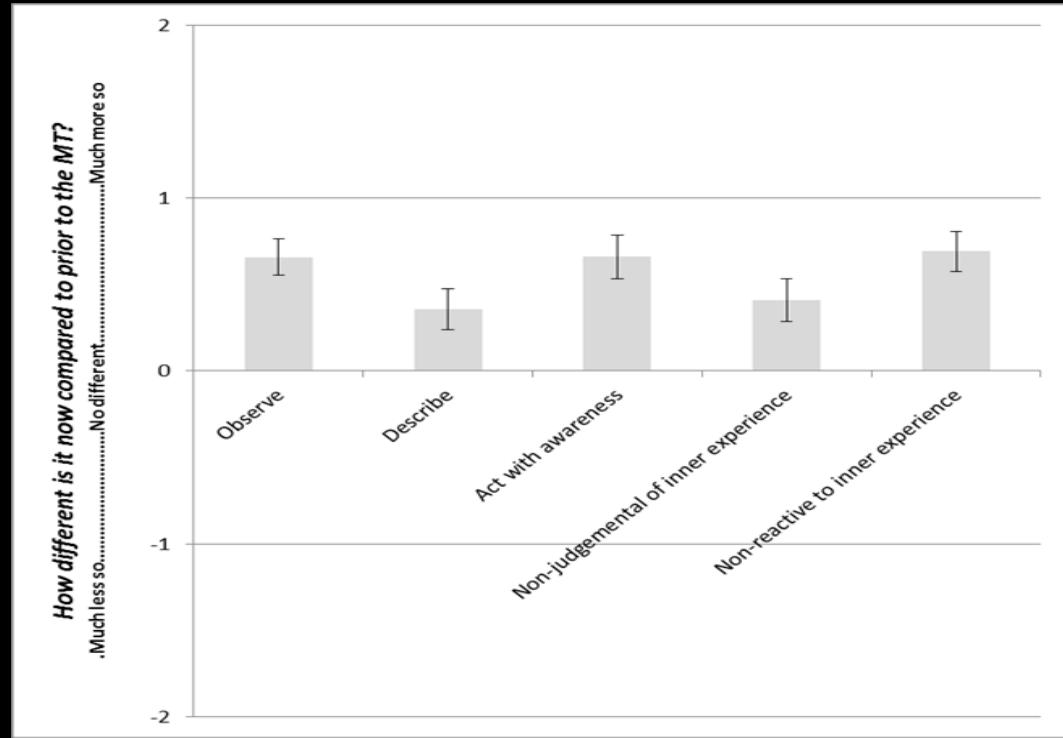
A one-year intervention study on an Air-base operating P3-Orion surveillance planes (subjective measures)

Study 1 – Fighter aircraft



Results

Levels remained throughout the two years follow-up period



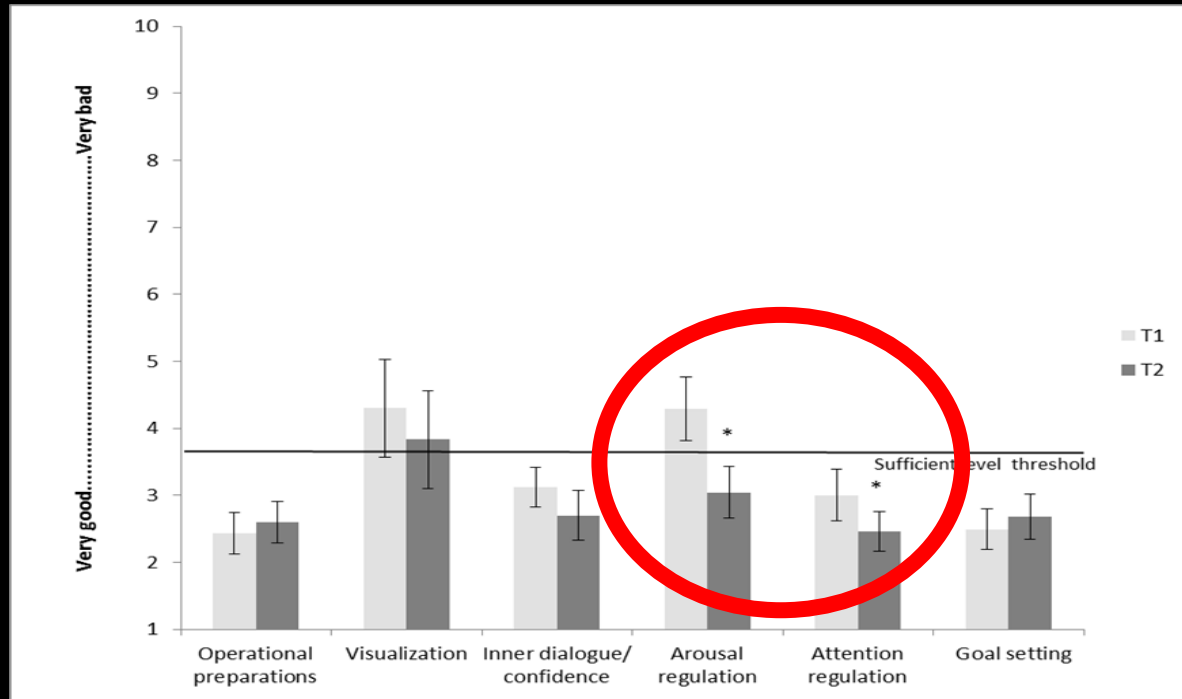
Mean change scores on the retrospective FFMQ from T1 to T2, with error bars showing standard error ($n = 17$).

Study 1 – Fighter aircraft



Results

NB! Lower scores are better

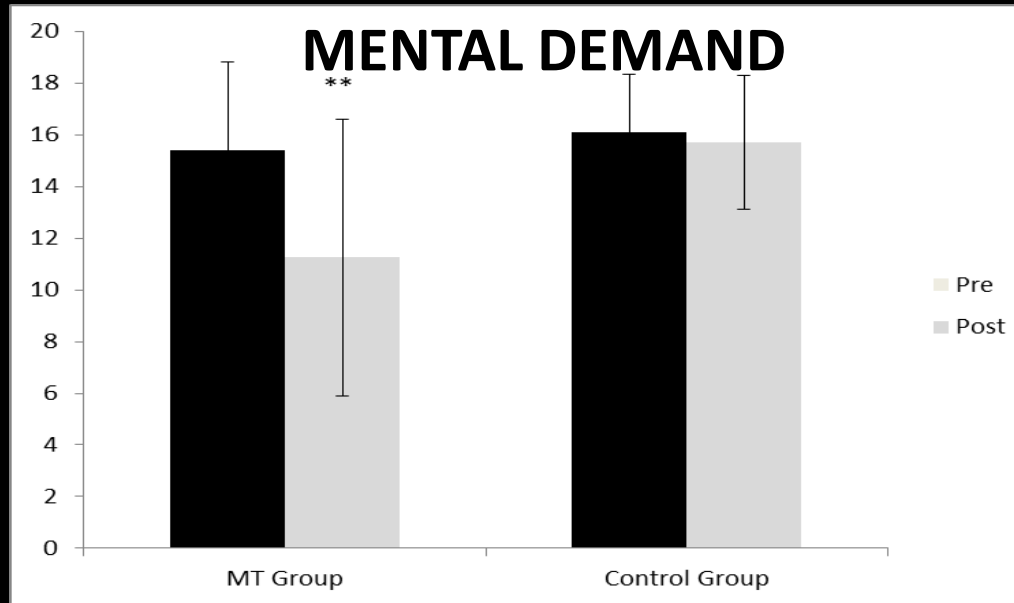


Mean scores on mental skills at T1 and T2, with error bars showing standard error (n=12).

Study 2 - Helicopter



Results

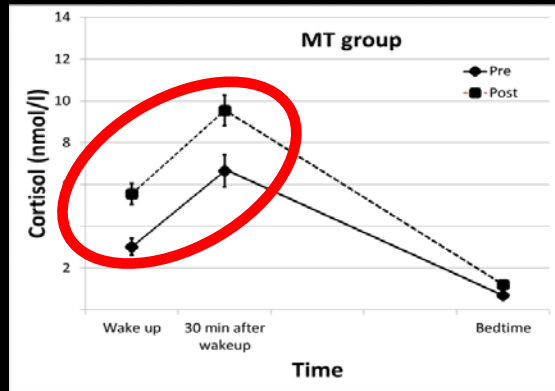


- Mixed between-within subjects analyses of variance

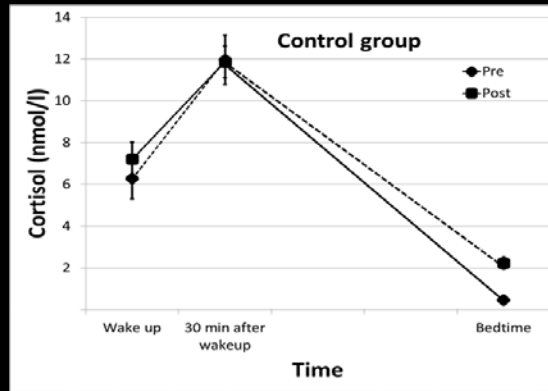
Study 2 - Helicopter



Results



(n = 50)



(n = 50)



Mixed between-within subjects analyses of variance

«Calm»

«Energetic»

«Content»

«Better mood»

«Less irritated»

«Less impulsive»

«Better decisions»



Photo: Norwegian Armed Forces

«Cohesion»

«Accepting»

«attentive others»

«emphatic»

«direct»

«thouger»

«assertive»

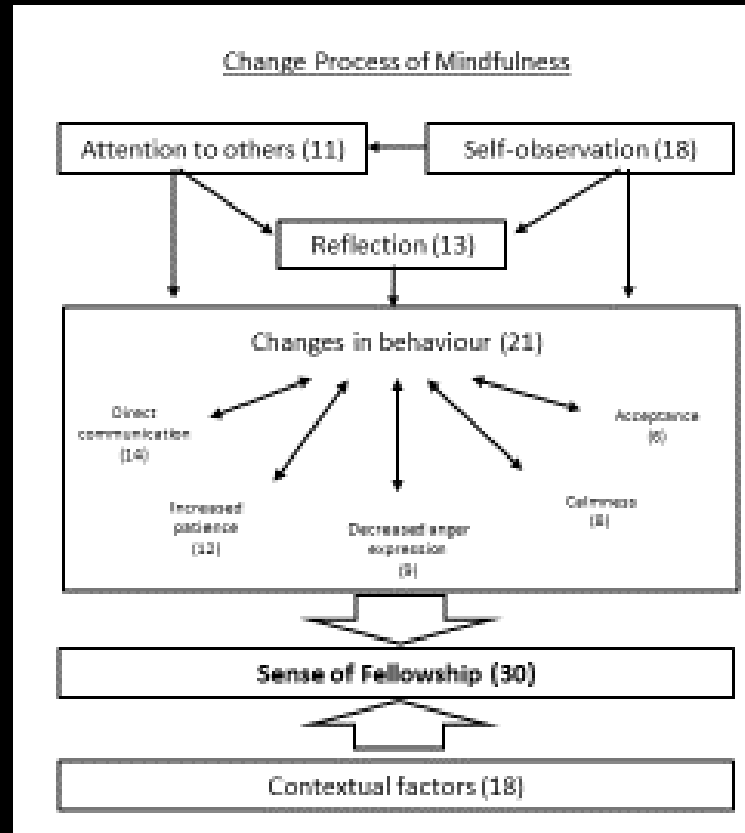
«honest»

Study 3 – Helicopter

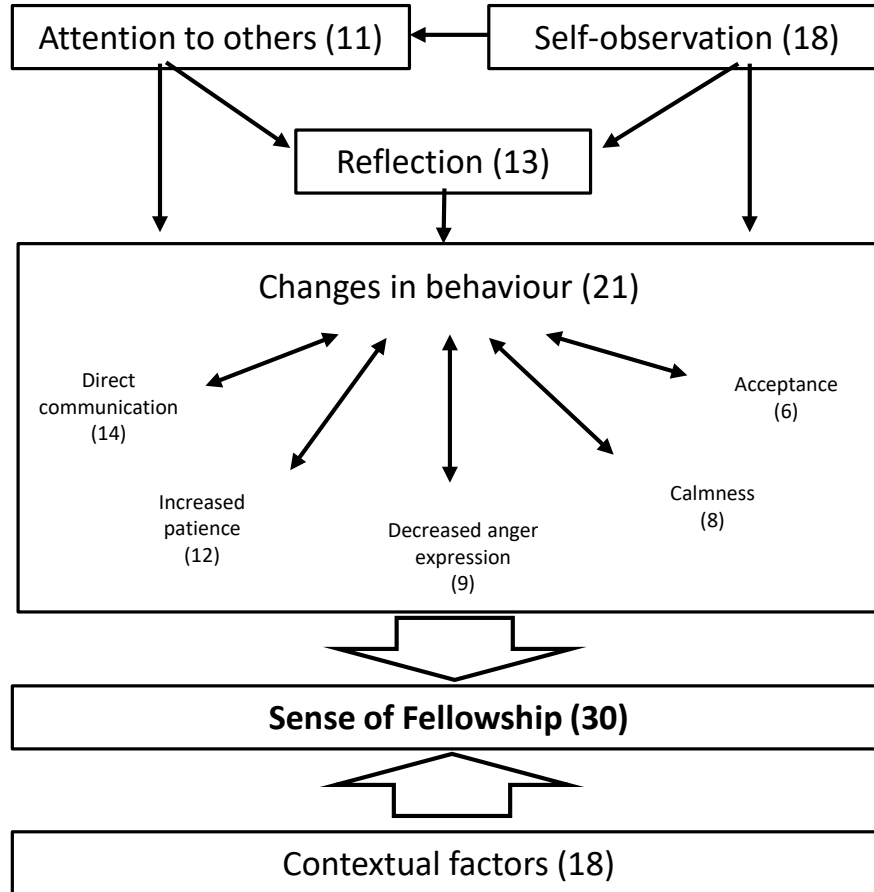


Results

Based on 30 in-depth interviews with evidence of interpersonal effects



Change Process of Mindfulness



Study 4 – P3 Orion



«Get going»

«Daily training»

«Normal ops»

«Repetition»

Introduction

Plenary
lecture

Plenary
lecture

Plenary
lecture

Plenary
lecture

Phase 1

Phase 2

Phase 3

Phase 4

April

June

September

January

April

Results



Increased «quality» in everything I do...



Photo: Dagens Næringsliv

Potential «downsides»

ing soundtracks ...
... don't work...

Who ...
Who's respon...
Not my responsibility...
To busy...
Non-optimal training facilities...
Did not receive the introductory lecture...

Uncomfortable...
Restless...
Bored...
Irritated...
Impatient...
I am uncertain about the effects?
I keep falling asleep during training...

Lead by example!

- Time and motivation to do the training
- Could «get worse» before improvement
- Understanding, timing and leadership

Conclusion

Mindfulness training can be successfully implemented in military aviation contexts with observable benefits on health and well-being

Future research

- Populations from other NATO nations
- Multinational groups
 - Studies with active controls
- Dose-respons studies
- Evaluate
 - The «group-effect»
 - Digital interventions



THOUGHTS

BODY

FEELINGS





NORWEGIAN ARMED FORCES

Medical Services - Institute of
Aviation Medicine



Special thanks to:

Employees and leaders at all squadrons for participating and facilitating the studies



Department of Coaching and Psychology
NORWEGIAN SCHOOL OF SPORT SCIENCES



ROYAL NORWEGIAN AIR FORCE
Flight Safety Department



Graduate School of Health Care Sciences,
Jikei Institute



National Research Centre
for the Working Environment