



Finnish Institute of  
Occupational Health

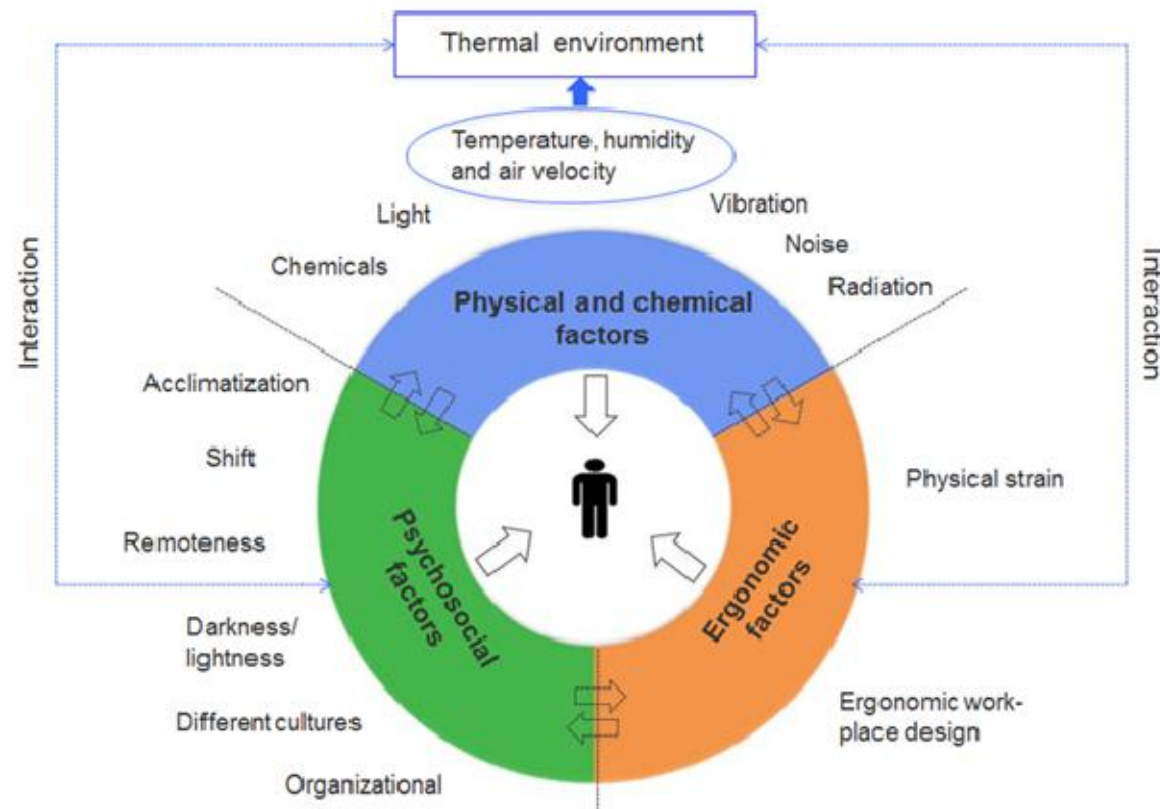
# *Arctic Network on Occupational Health and Safety*

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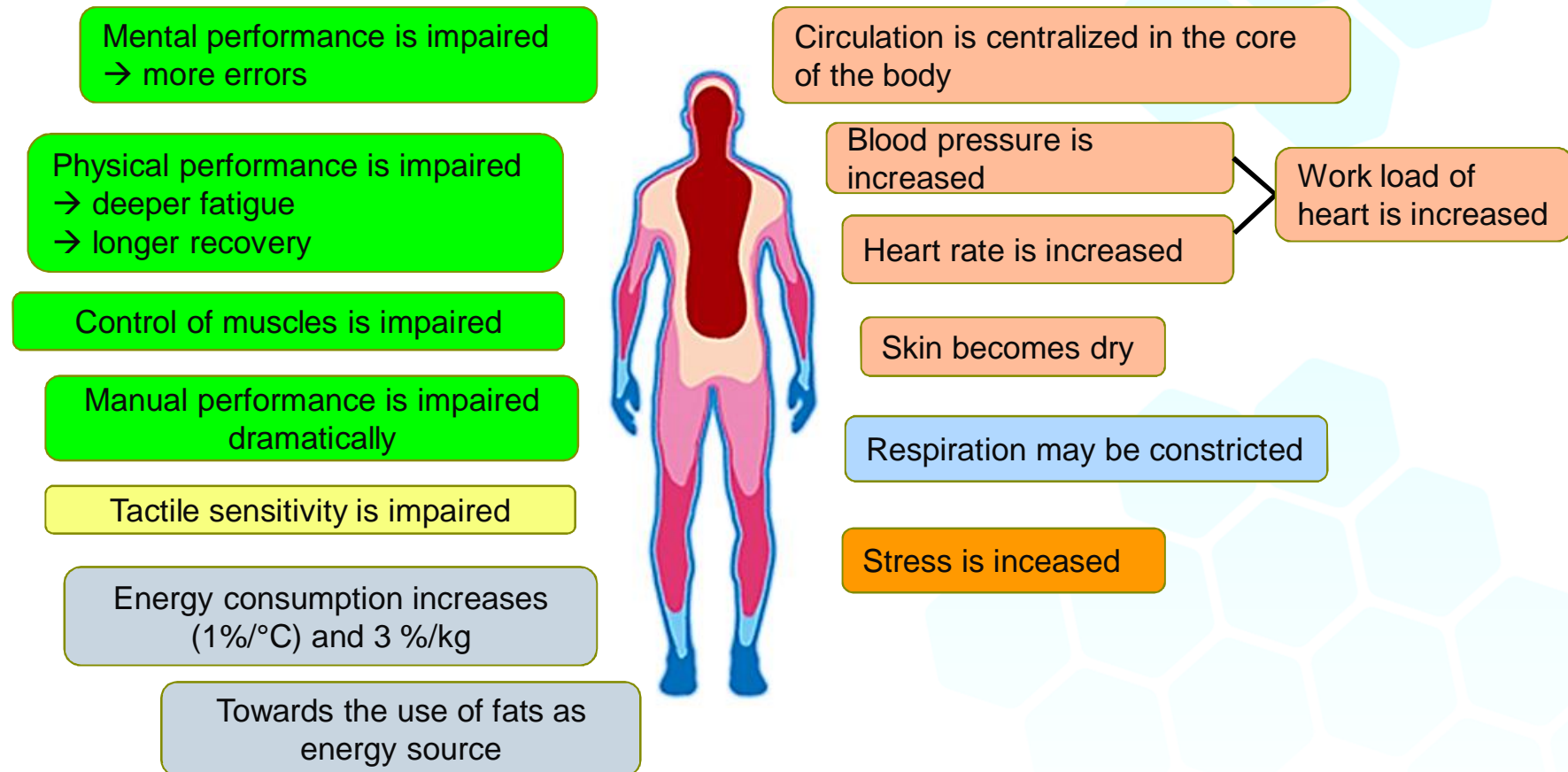
Email [hannu.rintamaki@ttl.fi](mailto:hannu.rintamaki@ttl.fi)

# Factors of the industrial environment and their interaction in the Arctic

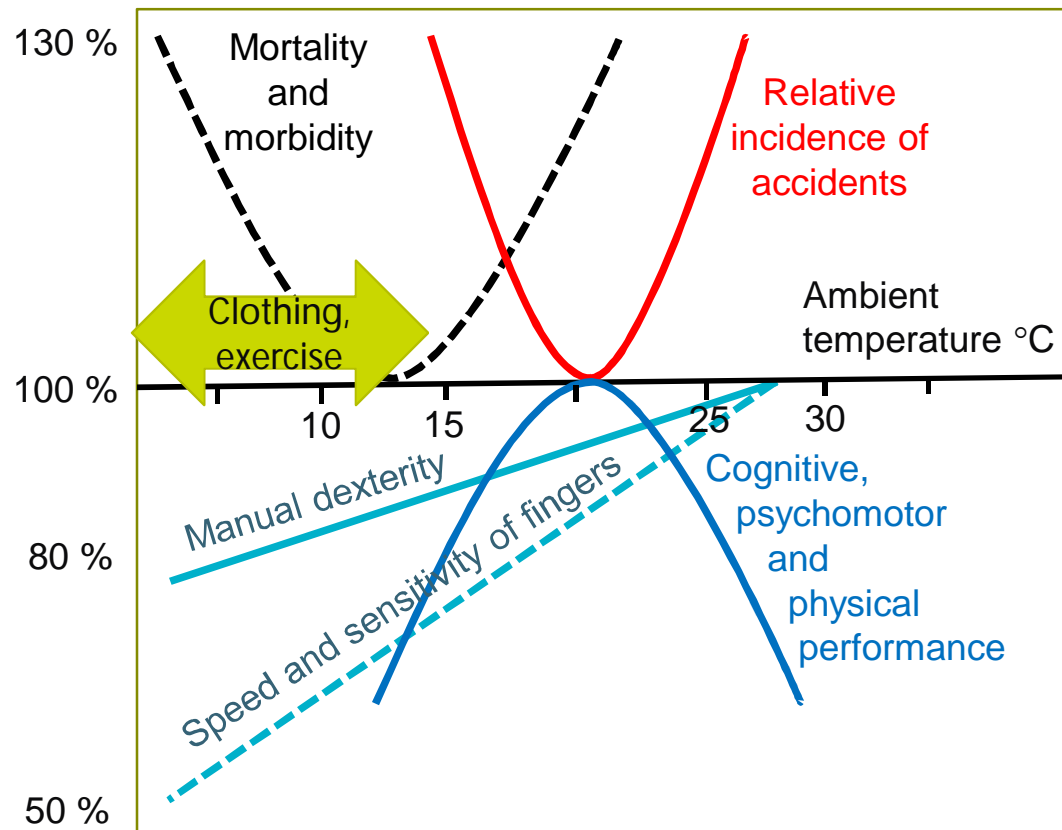


*Draft ISO/DIS 35101: Petroleum and natural gas industries  
— Arctic operations — Working environment*

# Cooling modifies human body and mind



# Effects of temperature on humans



Modified from Wyon 1986

# Negative effects of cooling

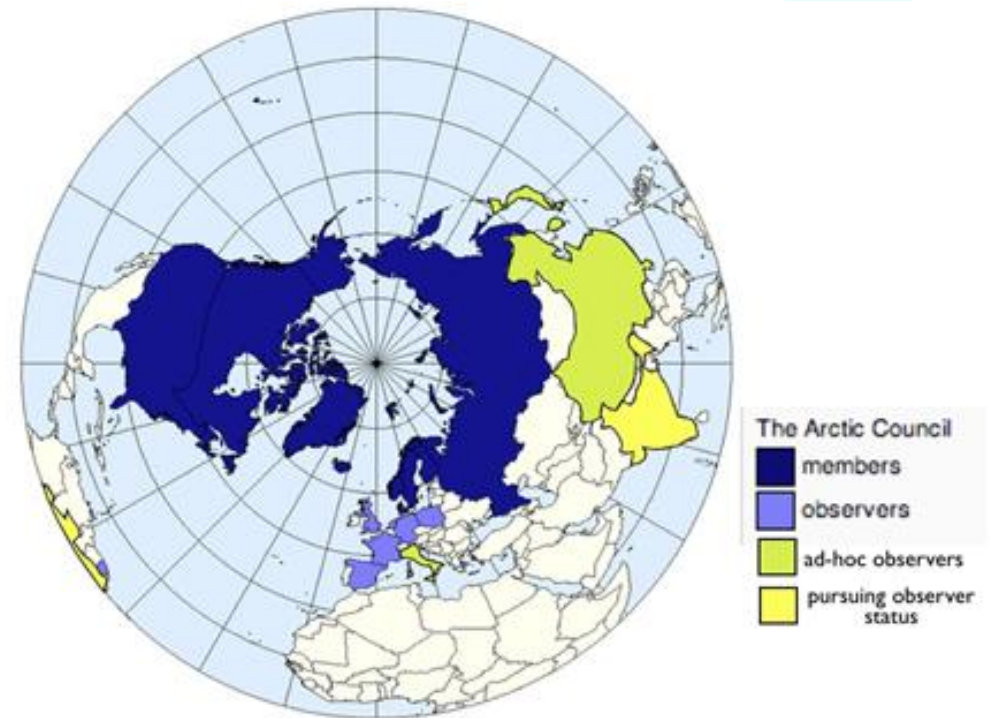
- Discomfort
- Performance degradation
- Pain (skin temperature below 15 °C )
- Numbness (skin temperature below 7 °C)
- Frostbite (skin temperature below 0 °C)
- Hypothermia (core temperature below 35 °C)
  
- The hazards caused by long term work in the cold: musculoskeletal disorders
- Cooling worsens the symptoms of many diseases  
← → diseases decrease cold tolerance

# Some ambient temperature thresholds

- 33°C Thermoneutral water  
*At rest*
- 27°C Thermonautral air  
*At rest, without clothing*
- 24°C Safest temperature for Mediterranean population
- 21°C Optimal temperature for light work  
*Indoor clothing*
- 14°C Safest temperature for Finnish population
- 11°C Optimal temperature for extremely heavy exercise  
*Light clothing*
- 10°C Arbitrary upper limit of cold work**
- 10°C Cold induced hazards start to increase**
- 22°C Number of frostbite increase sharply**

# Background of ANOHS

- Coordinated: Ministry of Social Affairs and Health
- Funded: Ministry of Foreign Affairs (IBA funding) & Ministry of Social Affairs and Health & FIOH
- Executed: FIOH and Ministry of Social Affairs and Health
- Time table of the preparatory phase: August 2016-August 2017



# General aims of ANOHS

- To promote occupational health and safety in Arctic working places by increasing the well-being at work (and its consequences)
- To facilitate and support collaboration between research institutes and also with companies
  - in a sustainable manner



# Steps of ANOHS preparatory phase

1. Compilation of English summary, which will be sent to the potential members after initial discussions.
2. Preparatory discussions with potential members.
3. Electronic newsletter 1: Needs and background of the network and information about the workshop.
4. Workshop for the preparing of the network.  
Thematic WS; on site/video/both?
5. Fine-tuning/revision and approval of the network plan.
6. Electronic newsletter 2: Network plan and its context. Release to the public.
7. New applications to the funds.
8. Electronic newsletter 3: Status and future of the network.

# Membership discussions by now

Network is mostly based on existing collaboration. Members will be agreed during the preparatory phase.

- Finland: FIOH, University of Oulu
- Russia: NArFU, State University of Petrozavodsk
- Sweden: University of Umeå
- Norway: UiT The Arctic University of Norway (Tromsø), Sintef (Trondheim)
- USA: NIOSH
- Canada: IRSST, Laurentian University (Sudbury)
- EU OSHA

# Arctic OHS Newsletter

ARCTIC OCCUPATIONAL HEALTH AND  
SAFETY NEWSLETTER 1/2017



<http://www.emaileri.fi/g/1/201466/0/0/1015/479/4>

## Welcome to the Arctic OSH Newsletter!

This is the first issue of the Arctic OHS Newsletter. You received this message because you are in the mailing list of one or more of the following networks: ANOHS, NDHPS EG OSH or BSN OSH. Arctic OHS Newsletter is issued about three times a year and contains information on research results, conferences, co-operation opportunities, and other useful news from Arctic research institutes that study and develop occupational health and safety in the Arctic area. In this first issue, we will focus on introducing each of these networks.

We are happy to receive any news tips. Please feel free to contact us and tell us what you feel is currently topical in the fields of occupational health and safety, and what kind of co-operation you would be interested in and willing to be involved in, either now or in the future. We will also publish presentations of institutes that belong to the networks, along with good practices.

If you know a colleague who would be interested in receiving these messages, please let us know!

# We are now in LinkedIn, too



## Arctic Occupational Health and Safety Group

12 members

Manage



Start a conversation with your group

Enter a conversation title...

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**Hannu Rintamäki**

Research Professor at Finnish Institute of Occupational Health & Profes...

OWNER

... 2w

### Welcome to the Arctic OHS Group!

The Arctic Occupational Health and Safety Group is created to increase the awareness on human factors in the Arctic working life, compare the findings and experiences as well as the needs for research and development and to promote joint research.

Our aim is to support the economic life in the Arctic by promoting, in a sustainable manner, occupational health, safety, wellbeing and joint research in the industries working in the Arctic.

We invite research institutes and companies interested in the development of OHS in the Arctic to join the group!

### ABOUT THIS GROUP

The Arctic Occupational Health and Safety Group aims to increase the awareness on human factors in the Arctic working life and to compare the findings, experiences and needs for research and development. The Group initiates and facilitates discussions between research institutes and companies focused on the development of occupational health and safety in the Arctic. The general objective of the Group is to support the economic life in the Arctic area by promoting, in a sustainable manner, occupational health, safety, wellbeing and joint research in the industries working in the Arctic. **Show less**

MEI



Bring your connections into the community.  
Invite those you think will enjoy this group.

Next



bers

Northern  
Research  
Institutes

Working in the Arctic

**METSTA**



**UArctic**



TEVASTA ry



ISO TC159/SC5/WG1  
ISO/TC67/SC8/WG1  
CEN TC 162 WG 4

Thermal Factors



# Occupational Health and Safety in the North



**ANOHS** Arctic Network on  
Occupational  
Health and Safety

**BSN** Baltic Sea Network on  
**OCCUPATIONAL  
HEALTH AND SAFETY**



**WHO**

Northern Dimension Partnership  
In Public Health and Social Well-being  
NDPHS

Expert Group on Occupational Safety and Health  
OSH EG

# Finland's chairmanship program for the Arctic Council 2017-2019 (Draft)

- "Occupational health and safety and well-being at work require special attention in demanding Arctic working environments, which are affected by universal changes in working life and climate change.
- Prevention of risks, related to physical and mental work-related stress is central to the health of the Arctic residents.
- Finland will establish a practically-oriented network of research institutes consisting of members from the Arctic states. The network will increase awareness on Arctic working life, map common research interests and utilize information gathered by the member states in order to find solutions to challenges of working life the Arctic."

# Dissemination of information

- Article in the next ICOH Newsletter:  
Well-being and sustainable development in the Arctic



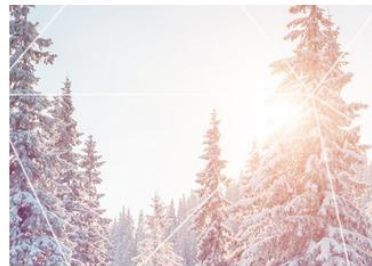
<http://www.arcticfinland.fi/EN>

Home **Policy** Economy Research Suomeksi



#### Finland's Arctic Policy

The objectives of Finland's Arctic policy are defined in the Government Programme. In addition to the Government Programme the principles and objectives of Finland's Arctic policies are described in Finland's Strategy for the Arctic Region published in 2013 and updated in October 2016.



#### Arctic Research in Finland

Finland has extensive expertise in Arctic research. The expertise is based in the high-quality education system where our position as an Arctic country is taken into account in teaching in all levels of education. In Finland Arctic research is carried out and education provided by several universities and



#### Finland's Arctic economy and business

The strong expertise of Finland in Arctic questions is based on first-hand knowledge of the circumstances in the region. The best-known examples of Finland's expertise include Arctic marine technology and related business opportunities, solutions and services. Finland wants to promote growth and competitiveness for

# Fortcoming events

- Ice Management & Oil Recovery: Technical Review Seminar, Porvoo, Finland, March 7 – 8, 2017. Incl. Work in the Cold
- Head First: Tromsø, April 3-4, 2017
- ICOH 2018, Dublin, Ireland: Occupation health and wellbeing, linking research to practice, 29th April – 4th May 2018. Session on Arctic work
- UArctic 2018, Oulu, Finland Session on Arctic work





# Human Factors in Arctic Work

16th – 18th of May, 2017  
Lapland Hotel Riekonlinna, Saariselkä, Finland



## Main topics

- Effects of cold on humans
- Protection against the cold
- Performance in the cold
- Shift work
- Offshore work
- Mining work
- Work in the heights

## Contact person

### Course Leader

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# Arctic OHS networking summary

## Arctic Network on Occupational Health and Safety

- Collaboration with members, existing networks and industry

## Arctic OHS Newsletter

- Avenue for networking, synchronization of ideas and dissemination of information. Subscribe & tell colleagues  
#1: <http://www.emaileri.fi/g/l/201466/0/0/1015/479/4>

## Arctic Occupational Health and Safety Group

- Join and discuss in LinkedIn