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PhD student

Supervisors:

Alf Brubakk,

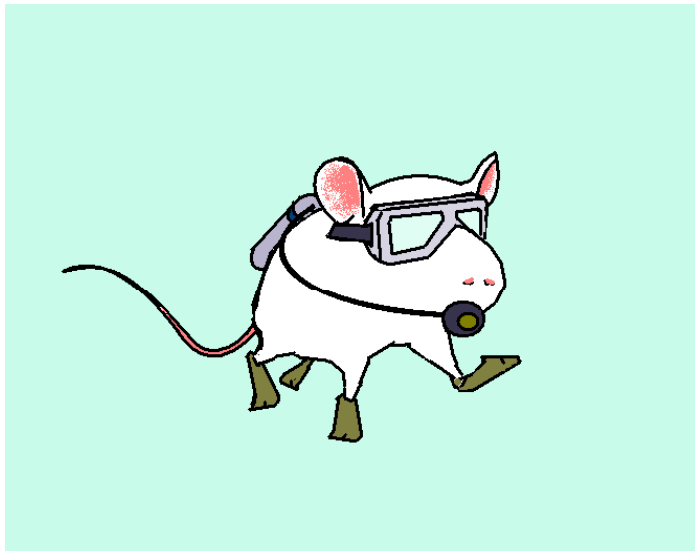
Andreas Møllerløyken,

Arvid Hope og

Ulrik Wisløff.



CNS injury caused by decompression.



Aim:

- To study possible injury on central nervous system after decompression



Neurological long-term effects of diving

- International disagreement about the size of the effects and consequence for the quality of life

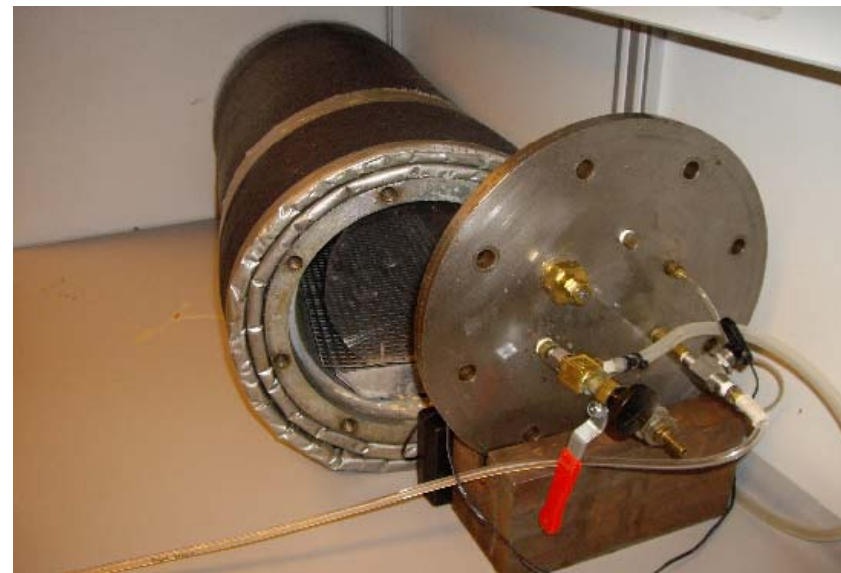
Characteristics:

- Difficulties with memory and attention
 - Concentration difficulties
 - Headache
 - Irritability
-
- Results from MRI in brain and spinal cord are contradictory

From FSAN -UVB "Dykkerlegens kontor"

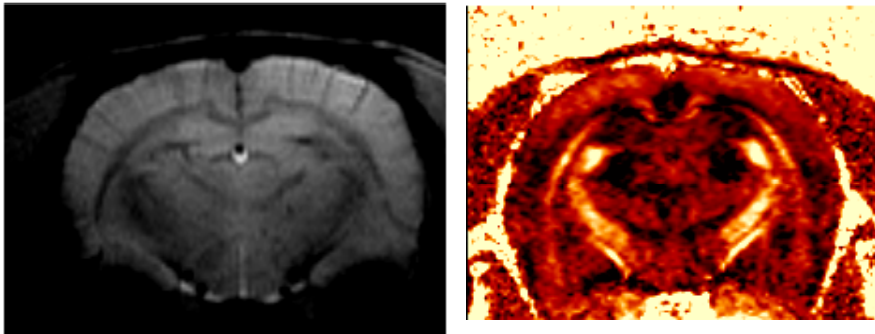
Methods:

- Decompression of rats
- Bubble measurements by ultrasound
- Measurements of endothelial function
- Immunohistochemistry
- MRI
- Serum analyzes/ biomarkers

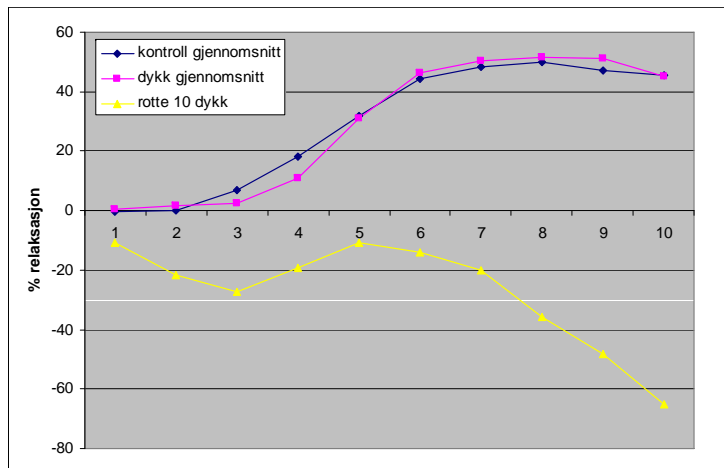


Results:

- No evident damage caused by diving in rats



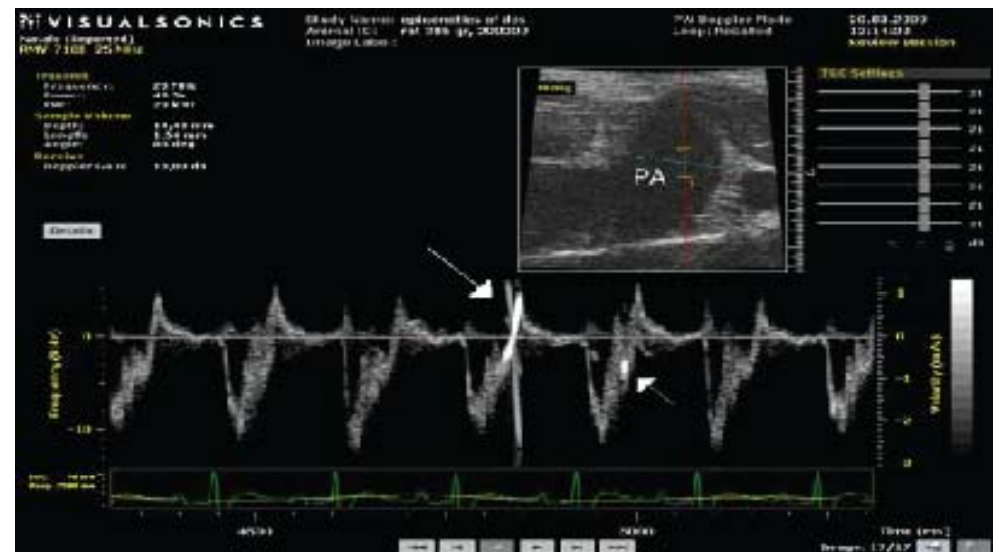
T2* weighted picture DTI-picture



Endothelial function measurements



Bubbles in pulmonary artery



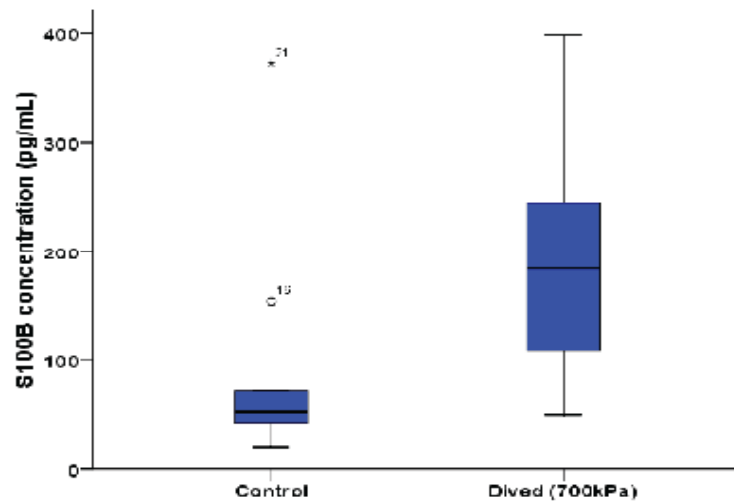
S100B



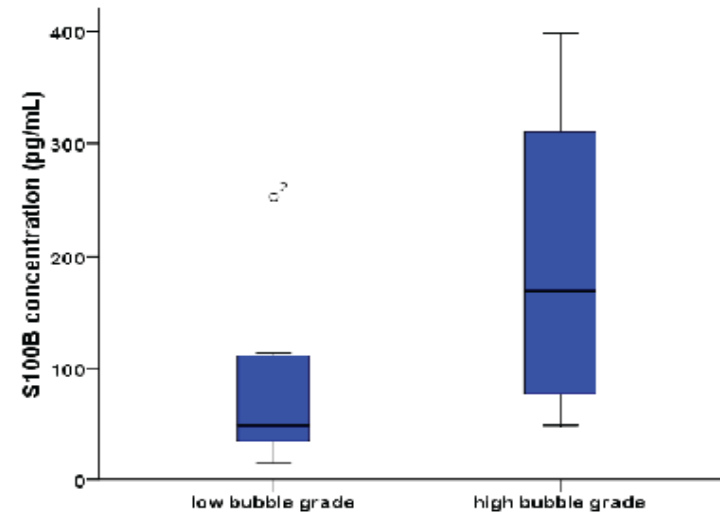
- Sensitive biomarker for brain damage
- Increased level in spinal fluid and in blood by acute and chronic damages in central nervous system
- Increased serum level is found in deep diving free divers, but levels are moderate compared to in brain damaged patients (Andersson et al., 2009)

S100B

- Serum concentration of S100B after a dive in rats



9 controls and 11 dived



7 with low bubble grade and 8 with high bubble grade

Thank you!

