

**Multiple Sclerosis Research Group
Oslo University Hospital**



Sys4MS

Forskningsseminar for Nevroklinikken

6 juni 2017

Einar August Høgestøl

MD, PhD stipendiat

MS Research Group OUS / UiO



MS forskningsgruppen



Department of Neurology ➡



MS patients

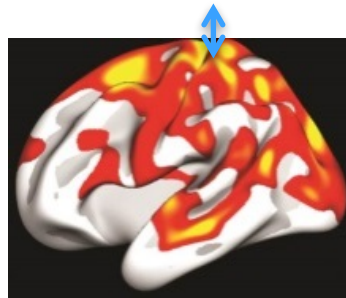


MS Research Group OUS/UiO

Oslo MS Registry and Biobank
Norwegian MS Registry and Biobank



MS clinic



MRI facility



Neuroscience Research Unit

<http://ous-research.no/harbo/>

MS forskningsgruppen

- Leader: Hanne F. Harbo
- Ass. leader: Elisabeth G. Celius
- Lab leader: Tone Berge
- Neurology, neurosurgery, radiology, ophthalmology, immunology, genetics, biochemistry, statistics



1. Clinical and epidemiological studies: Clinical phenotypes, Neurocognition, eye affection, epidemiology, environmental factors

2. Genetic studies: Gene screening, candidate genes, genotype-phenotype, genetic risk score

3. Functional and molecular studies of MS-genes: Gene function, gene methylation, gene expression

4. MR studies in MS

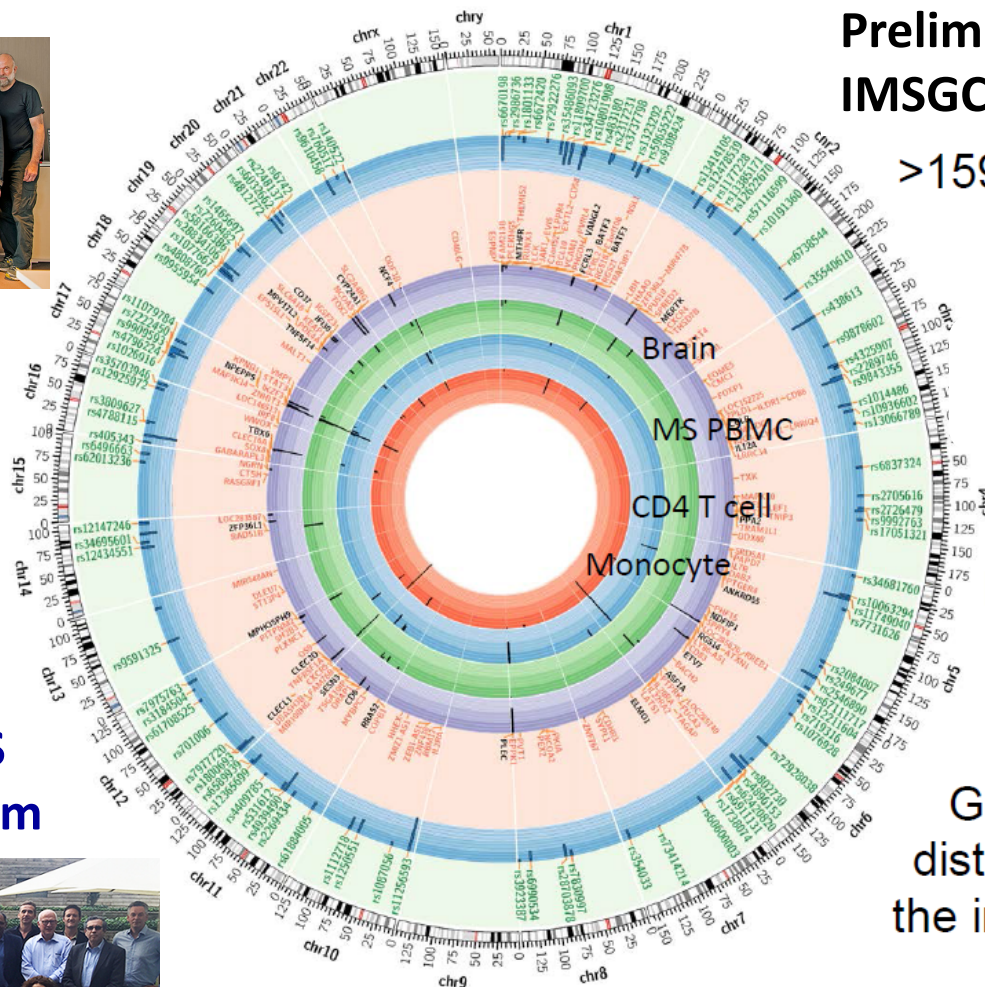
- <http://ous-research.no/harbo/>
- <http://www.med.uio.no/klinmed/forskning/grupper/multippel-sklerose>
- Facebook: "MS forskningsgruppen ved OUS – UiO"

International collaborations



**Nordic MS
Genetics Network**

**International MS
genetics consortium**



IMSGC, in progress

Preliminary data

IMSGC MS chip project:

**>159 MS susceptibility
variants**

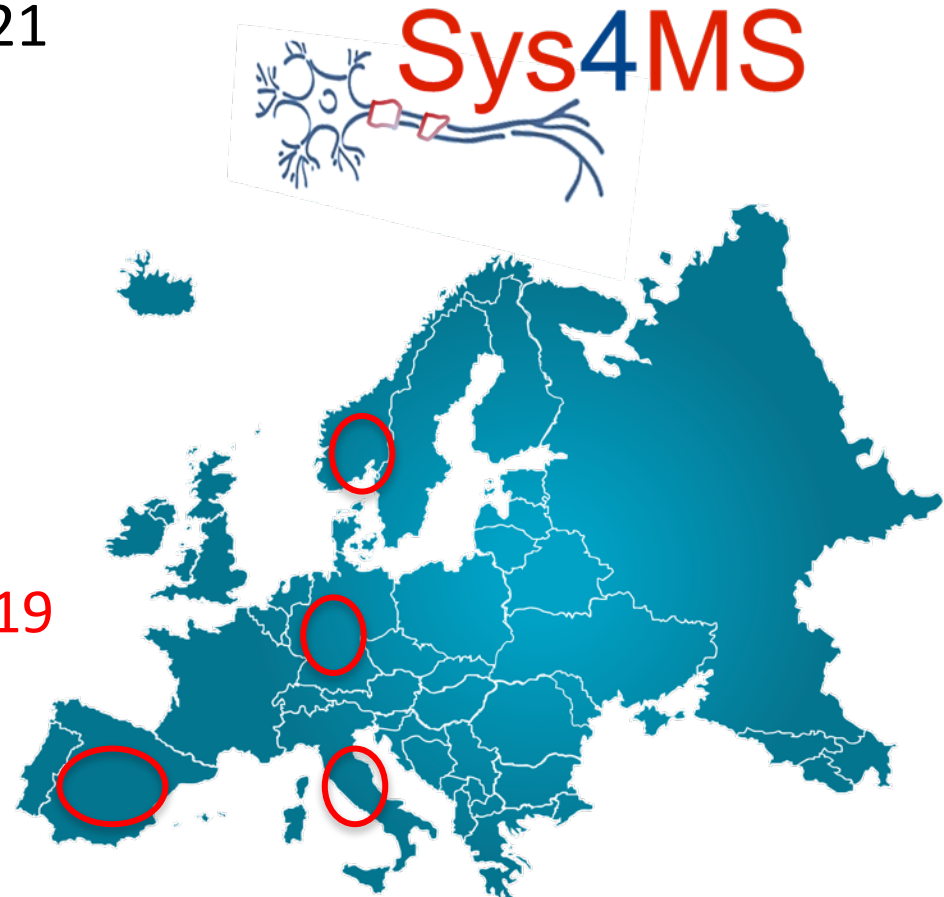
**35,314 MS
48,848 controls**

**Multiple variants in
a given locus**

**Genetic risk is
distributed across
the immune system
and brain**

Sys4MS - Biotech 2021 (EracoSysMed)

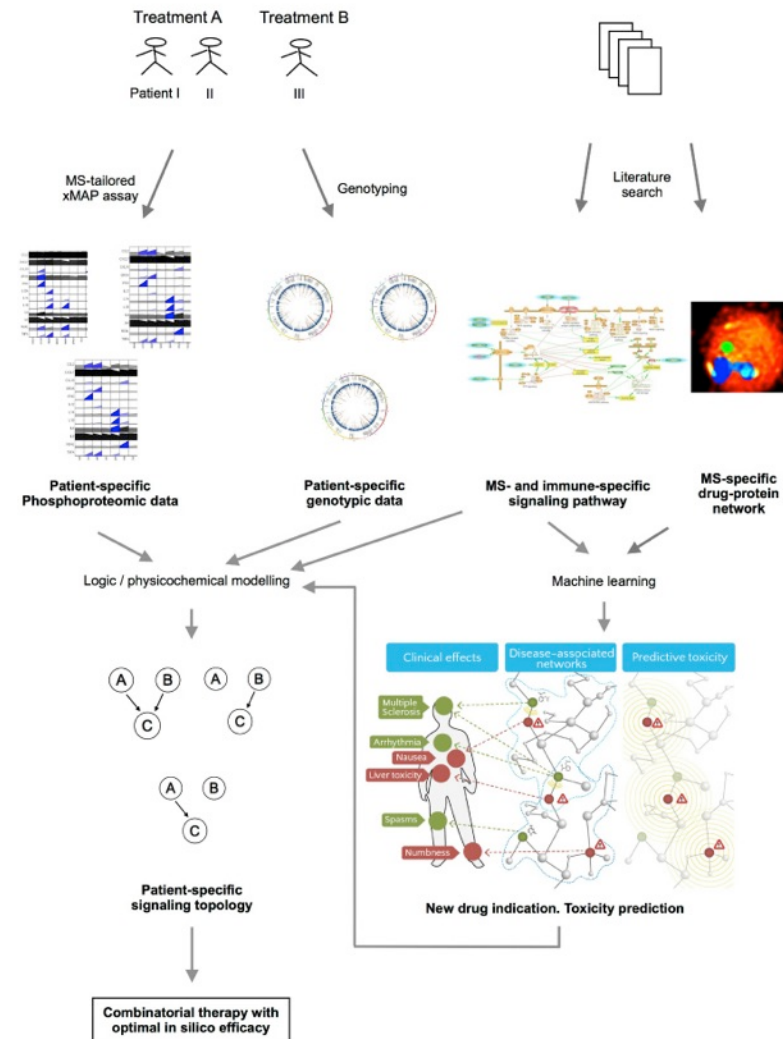
- 1 of 5 partners in a European multicentre study:
 - Spain, Italy, Germany x 2 and Norway
 - Granted from EU Biotech 2021
 - Lead by Dr. Pablo Villoslada,
 - Institute Biomedical Research August Pi Sunyer (IDIBAPS)
 - Barcelona, Spain
 - Harbo Norwegian PI
 - Funded May 2016 → End 2019
 - We host the yearly meeting 20/6-2017



Systems Medicine 4 Multiple Sclerosis

PI Prof. Villoslada:

- Genetics
- Phosphoproteomics
- Cytomics
- MRI
- Clinical phenotype
 - Including OCT

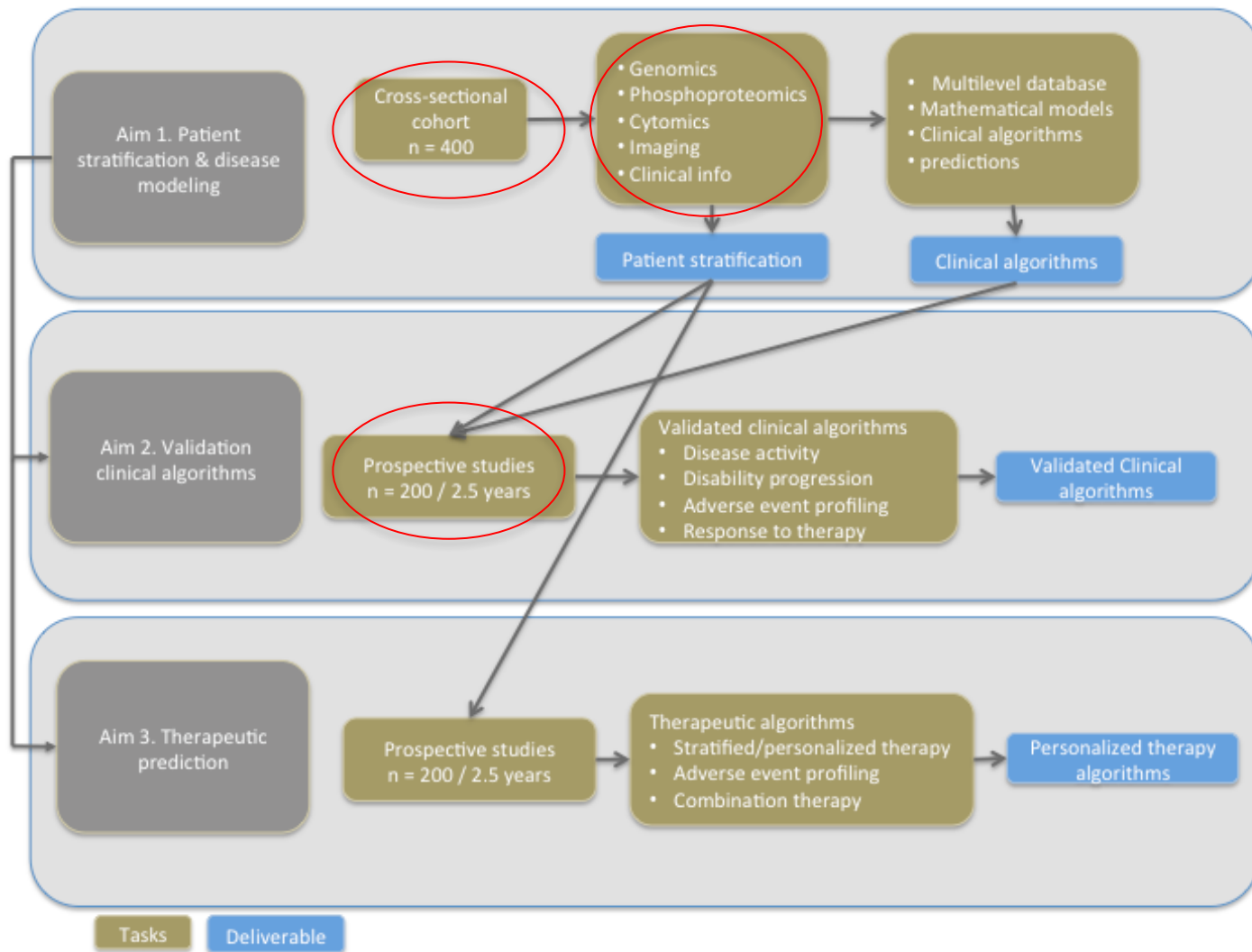


Sys4MS - Oslo team

- Local PI: Professor Hanne F. Harbo
- Genetics
 - Post. doc. Steffan Daniël Bos-Haugen
 - Lab leader Tone Berge and lab assistants (Omics)
 - Ingrid Mo and Fernanda Kropf Correia
- Patient inclusion and administration
 - PhD fellow Einar August Høgestøl
- Eye: examination and OCT
 - Ophthalmologist and PhD fellow Sigrid A. de Rodez Benavent



Sys4MS - design



Ref: <http://www.neuroimmunologybcn.org/research/pathogenesis-and-novel-therapies-multiple-sclerosis/sys4ms/>

Sys4MS – Status Oslo

- Status - 29/5-17
 - 86 MS patients
 - Six yet to be included
 - Will reach 92 in total on the last day
 - 26 healthy controls – all collected
 - Last day of inclusion – 26/6-17
 - Sys4MS annual meeting to be hosted here in Oslo June 20th at Ekebergrestauranten

MS-MRI Cohorts - MSImcogen



Inclusion: 2012/2013

- 73 patients
- MRI 1,5 T (73)
- Clinical
- Neuropsychological
- Self-report questionnaire
- Eye examinations (49)

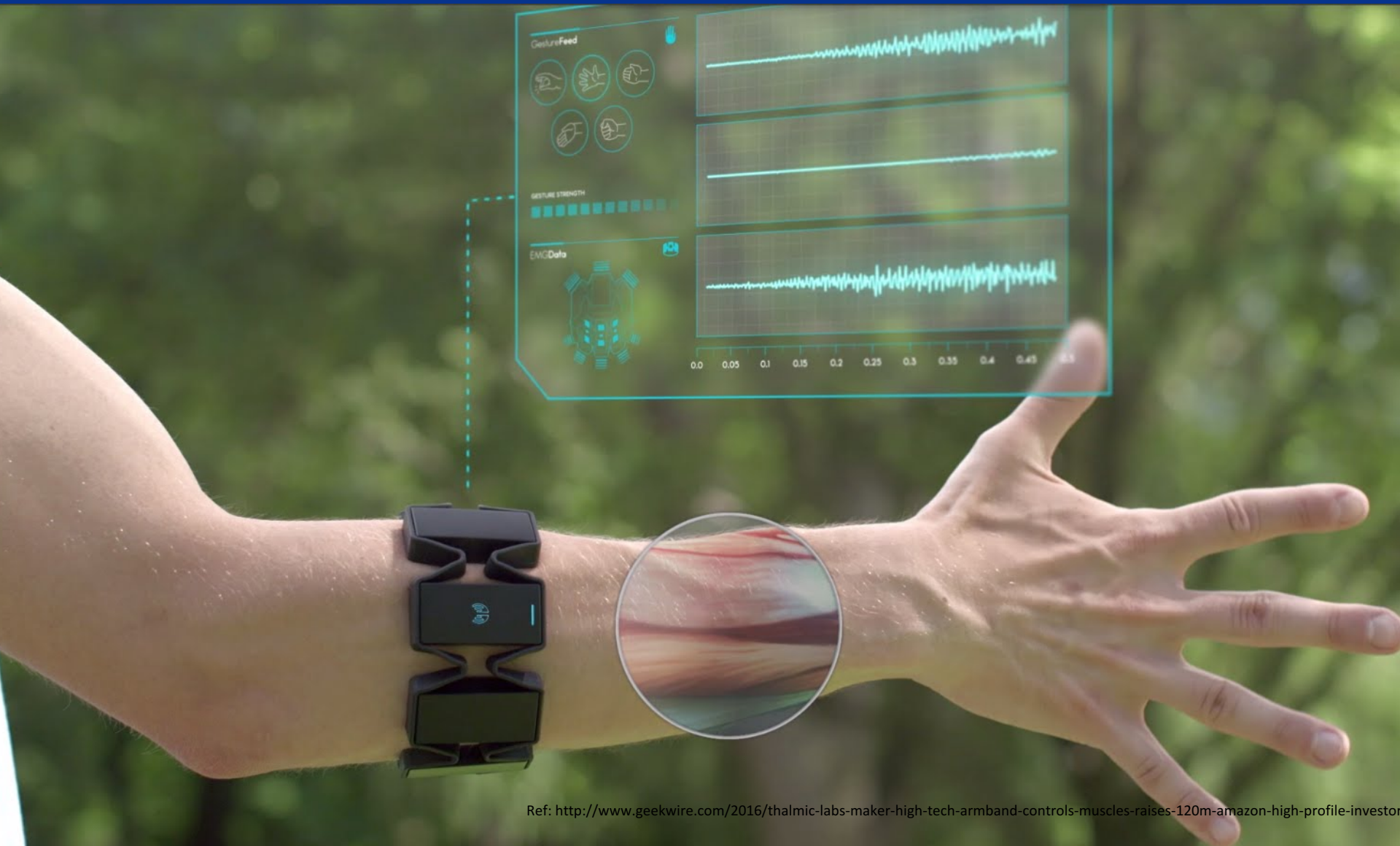
1. Follow up: 2013/2014

- 72 patients
- MRI 1,5 T (60)
- Clinical
- Neuropsychological
- Self-report questionnaire
- Eye examinations (49)

2. Follow up: 2017/2018

- 57 patients 29/5-17 (6 more will be included)
- MRI 1,5 T + **MRI 3.0 T**
- Clinical
- Neuropsychological
- Self-report questionnaire
- Eye examinations

MYO (wearable electromyography device)



Ref: <http://www.geekwire.com/2016/thalmic-labs-maker-high-tech-armband-controls-muscles-raises-120m-amazon-high-profile-investor/>

Samarbeid med Nantes

- **Professor Pierre-Antoine Gourraud** (UCSF and Nantes)
 - Fremtiden:
 - Telemedisin og innhenting av data fra pasienter der pasienten er (hjemme, fastlege, rehabilitering)
 - Opprette en stor database for å kunne predikere forløp
 - Pilotstudie for å objektivisere og standardisere tester innen nevrologien:
 - F2NT: pekefinger på nesetippen
 - 9HPT: 9 pinner i hvert sitt hull og ut igjen
 - Pekefinger og tommel sammen x 20
 - Kne-hel-prøve
 - Rombergs test
 - T25WT: gå 7,62 meter så fort du kan



MYO - status

- Samtidig med Sys4MS inklusjonen
 - Inkludert 24 pasienter til MYO prosjektet
 - Målet er 30 pasienter
 - Vil nå dette 26/6-17
- Medisinstudentoppgave
 - Ingerid Maria Tutturen
 - Har samlet inn data på 40 friske kontroller

Spørsmål



Takk for oppmerksomheten



Facebook: «MS forskningsgruppen ved Oslo Universitetssykehus – UiO»

