

**Multipel Sklerose  
Forskningsgruppe**



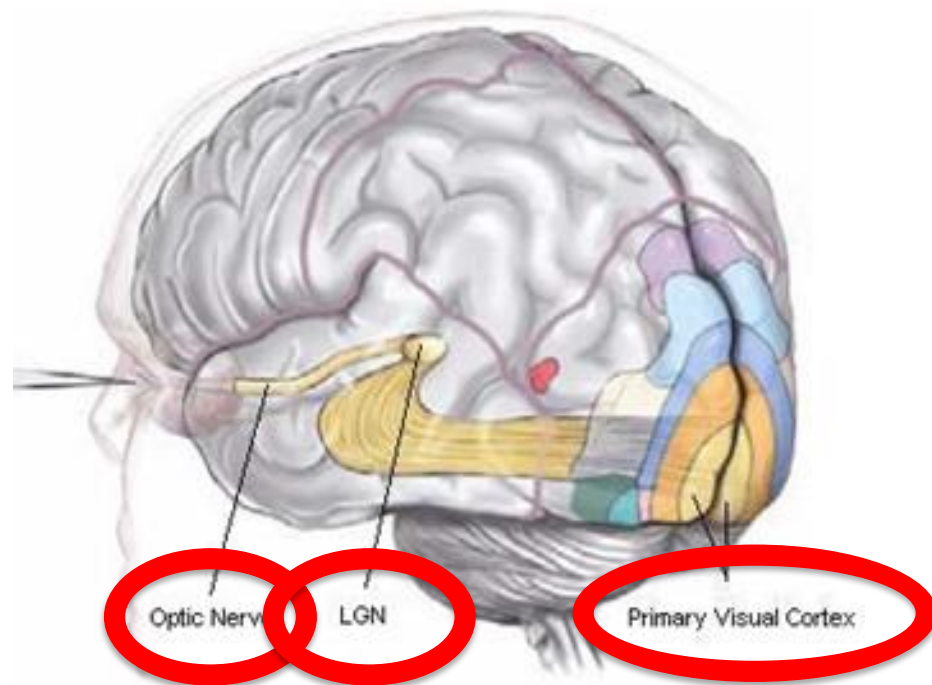
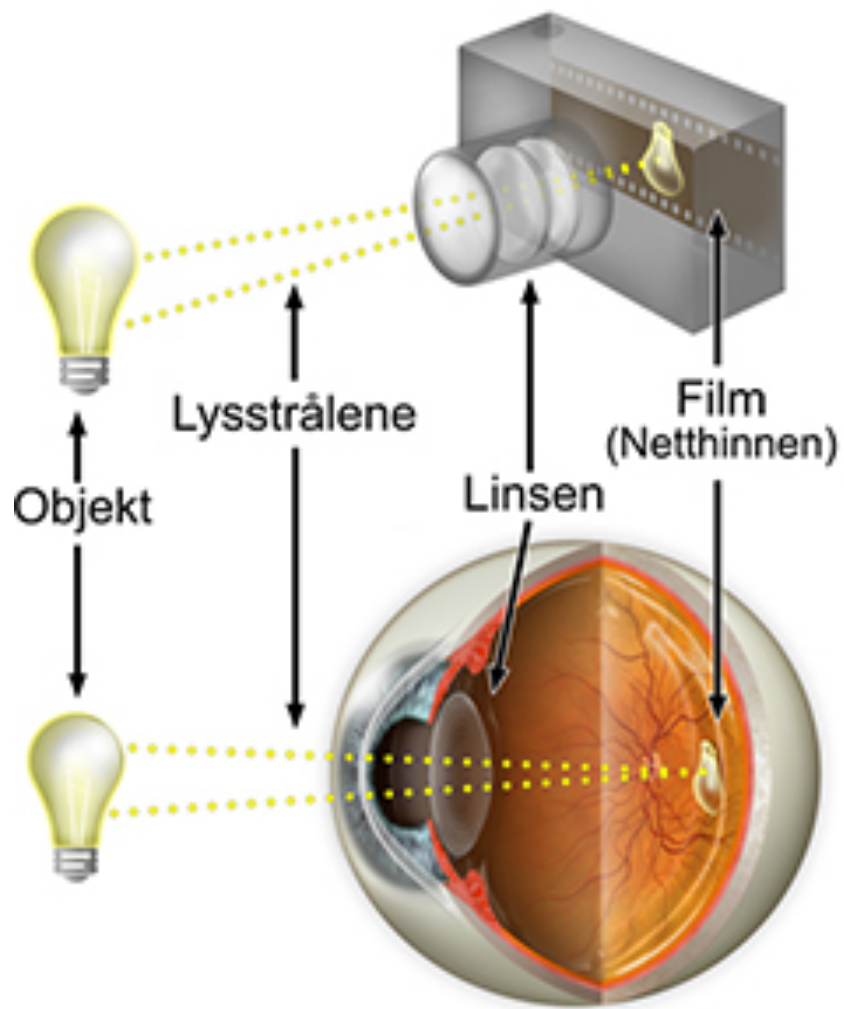
# Et øyeblikk om MS

Sigrid A. de Rodez Benavent

Øyelege

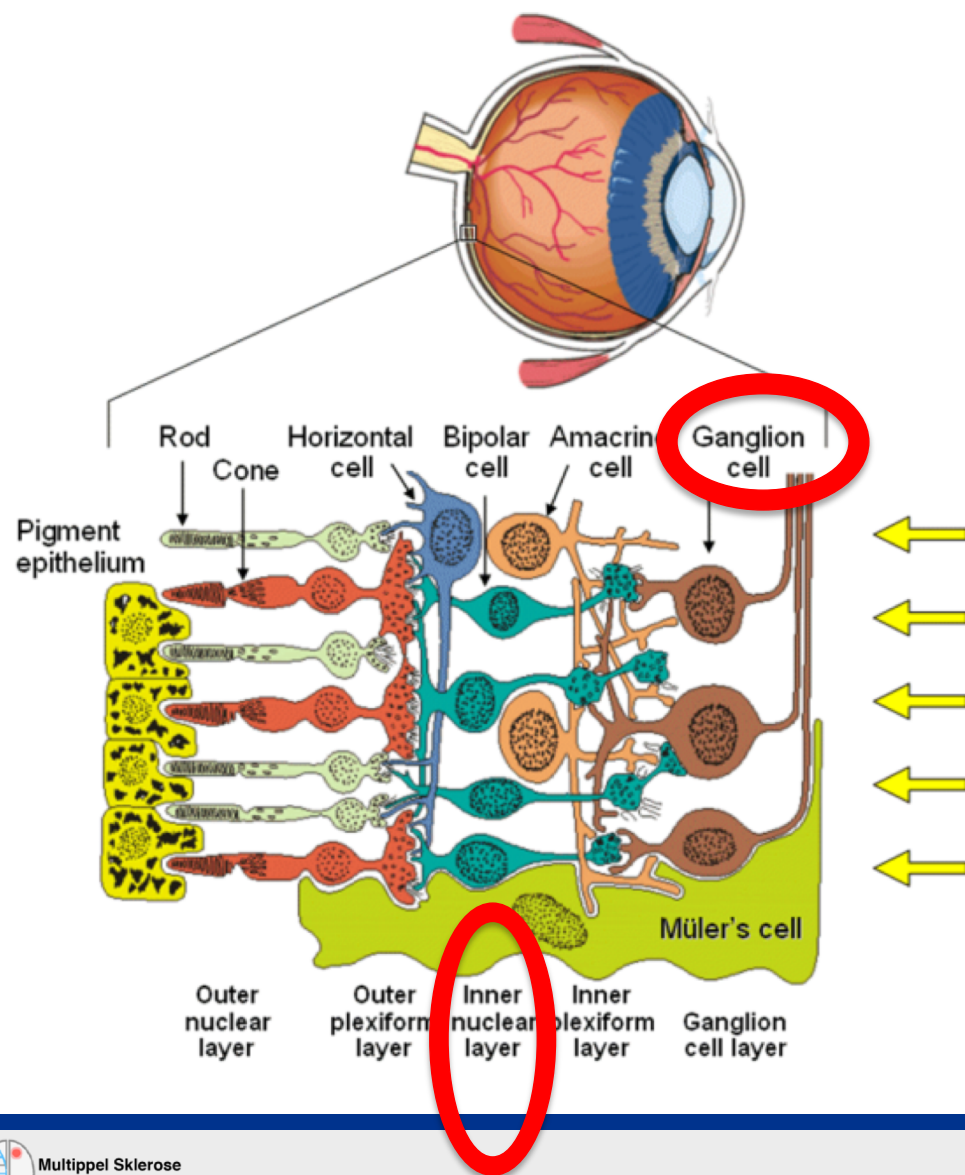


# Hvorfor studere øyet ved MS?

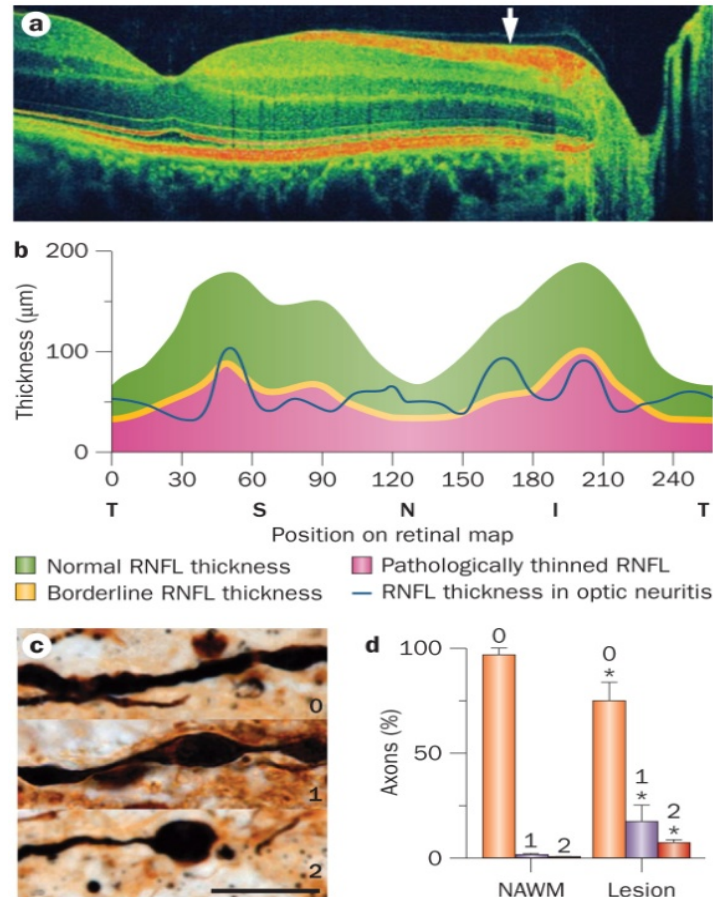


20 % har optikusnevritt som debutsymptom  
80% opplever synsplager på et tidspunkt

# Fra lys til elektrisitet



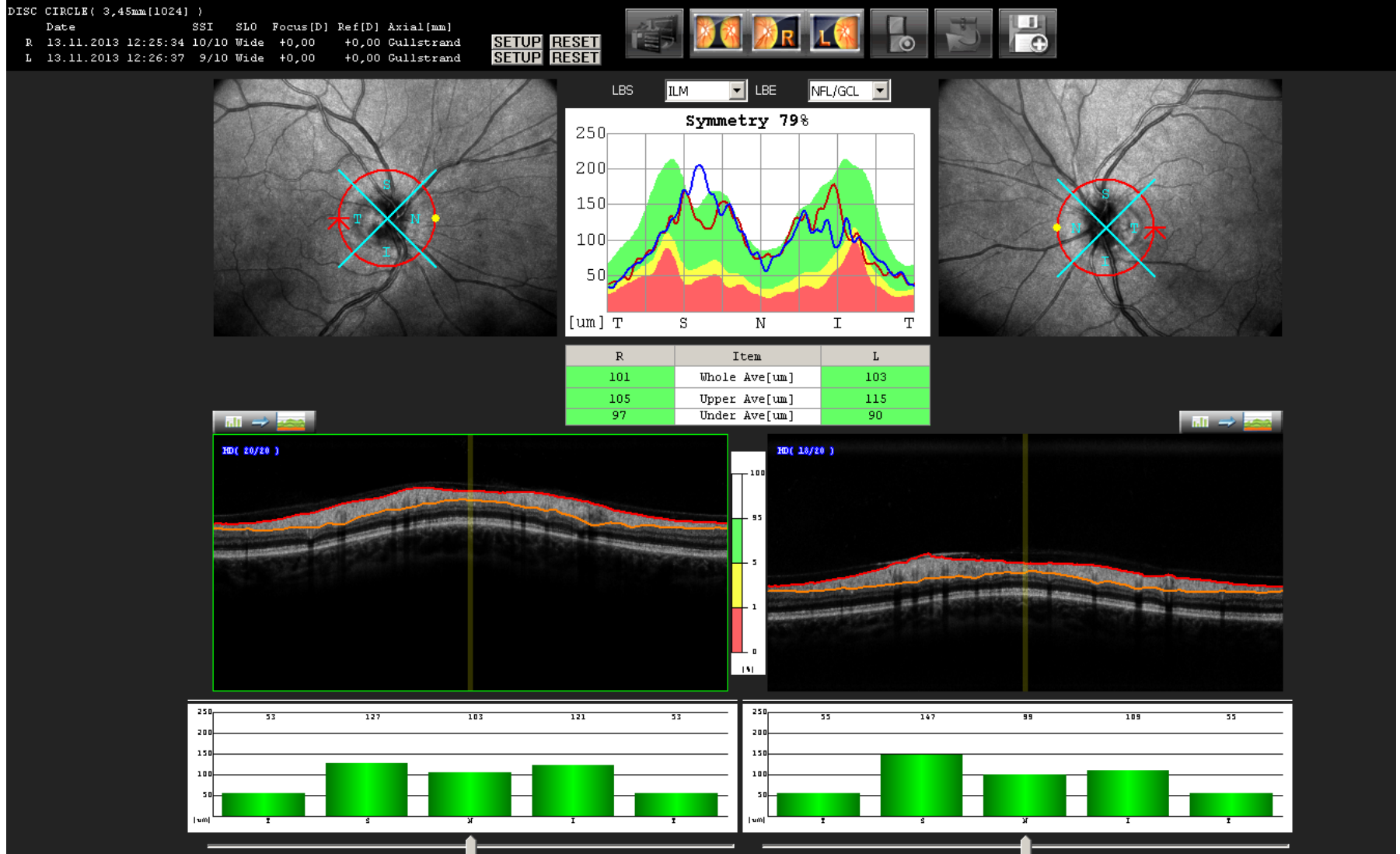
# Optical Coherence Tomography - OCT



Friese, M. A. *et al.* (2014) Mechanisms of neurodegeneration and axonal dysfunction in multiple sclerosis  
*Nat. Rev. Neurol.* doi:10.1038/nrneurol.2014.37



# Retinal nerve fiber layer – Rnfl (pRnfl)



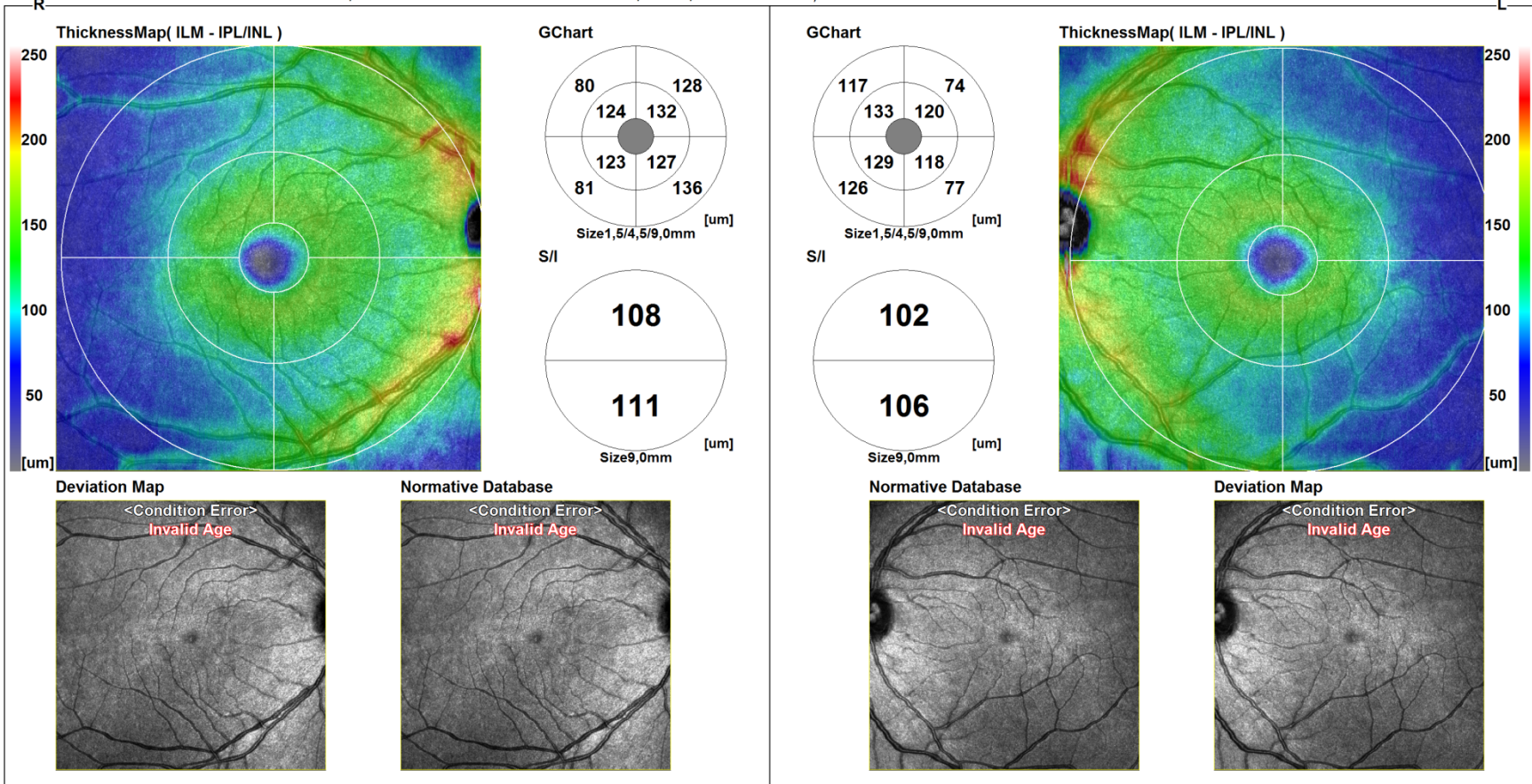
# Makula med ganglioncellelaget - GCL

OCT Setting: MACULA MAP X-Y( 9,0mm x 9,0mm[512 x 128] )

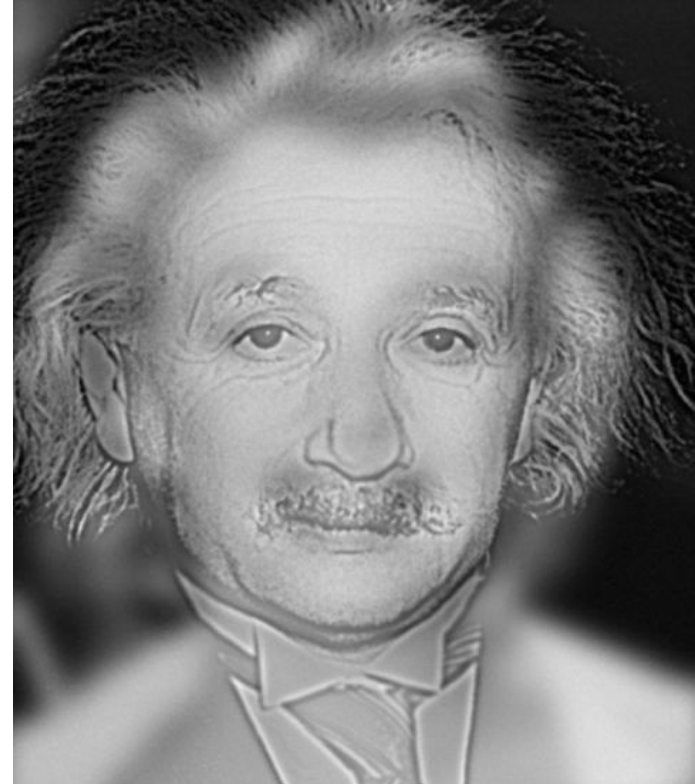
Eye: Both



Both	Glaucoma	S/N	Version( F/S )	Date	SQI	SSI	SLO	Focus[D]	Axial[mm]
R		650421	20100/2.01.00	04.04.2016 12:16:38	5/5	9/10	Wide	-1,00	Gullstrand
L		650421	20100/2.01.00	04.04.2016 12:18:36	5/5	10/10	Wide	-1,00	Gullstrand



# Struktur – funksjon → Kontrastsyn



<https://www.seventeen.com/life/news/a30763/einstein-optical-illusion-picture-can-determine-if-you-need-glasses/>

# Årets kontrolltime - forskningsoptiker

## Bokstavtest høy kontrast

## Bokstavtest med lav kontrast



OCT





# Artikkel 1

Multiple Sclerosis and Related Disorders 4 (2015) 585–589



Contents lists available at [ScienceDirect](#)

## Multiple Sclerosis and Related Disorders

journal homepage: [www.elsevier.com/locate/msard](http://www.elsevier.com/locate/msard)



### Eye and hand motor interactions with the Symbol Digit Modalities Test in early multiple sclerosis



Gro O. Nygaard <sup>a,b,1</sup>, Sigrid A. de Rodez Benavent <sup>b,c,\*</sup>, Hanne F. Harbo <sup>a,b</sup>, Bruno Laeng <sup>d</sup>, Piotr Sowa <sup>b,e</sup>, Soheil Damangir <sup>f</sup>, Kristian Bernhard Nilsen <sup>a,g</sup>, Lars Etholm <sup>a</sup>, Siren Tønnesen <sup>b</sup>, Emilia Kerty <sup>a,b</sup>, Liv Drolsum <sup>b,c</sup>, Nils Inge Landrø <sup>d</sup>, Elisabeth G. Celius <sup>a</sup>

<sup>a</sup> Department of Neurology, Oslo University Hospital, Postal Box 4950 Nydalen, 0424 Oslo, Norway

<sup>b</sup> Department of Clinical Medicine, University of Oslo, Postal Box 1171 Blindern, 0318 Oslo, Norway





# Testene (1)



KEY

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1	2	3	4	5	6	7	8	9

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# Funnene (1)

Table 3 Correlations in RRMS patients

	<u>Saccadic initiation (SI) time</u>	9HP	<u>wSDMT</u>	PASAT	EDSS	<u>Disease duration</u>	WMLL	VEP
SI time	-	-	-.316 (.037)*	-.083 (.600)	.108 (.484)	.102 (.510)	.038 (.815)	-.104 (.519)
9HP	.267 (.087)	-	-.465 (.002)**	-.011 (.945)	.284 (.068)	.222 (.158)	.579 (<.001)**	.094 (.560)
T25WT	-.237 (.131)	-.118 (.456)	.105 (.507)	-.029 (.855)	.204 (.195)	-.121 (.446)	-.031 (.849)	-.094 (.560)

Table 3 legend: \*p-value < 0.05, \*\*p-value < 0.01.

→ Man må ta høyde for at øyebevegelseshastigheten kan påvirke SDMT-resultatet

# Artikkel 2

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DOI: 10.1002/brb3.717

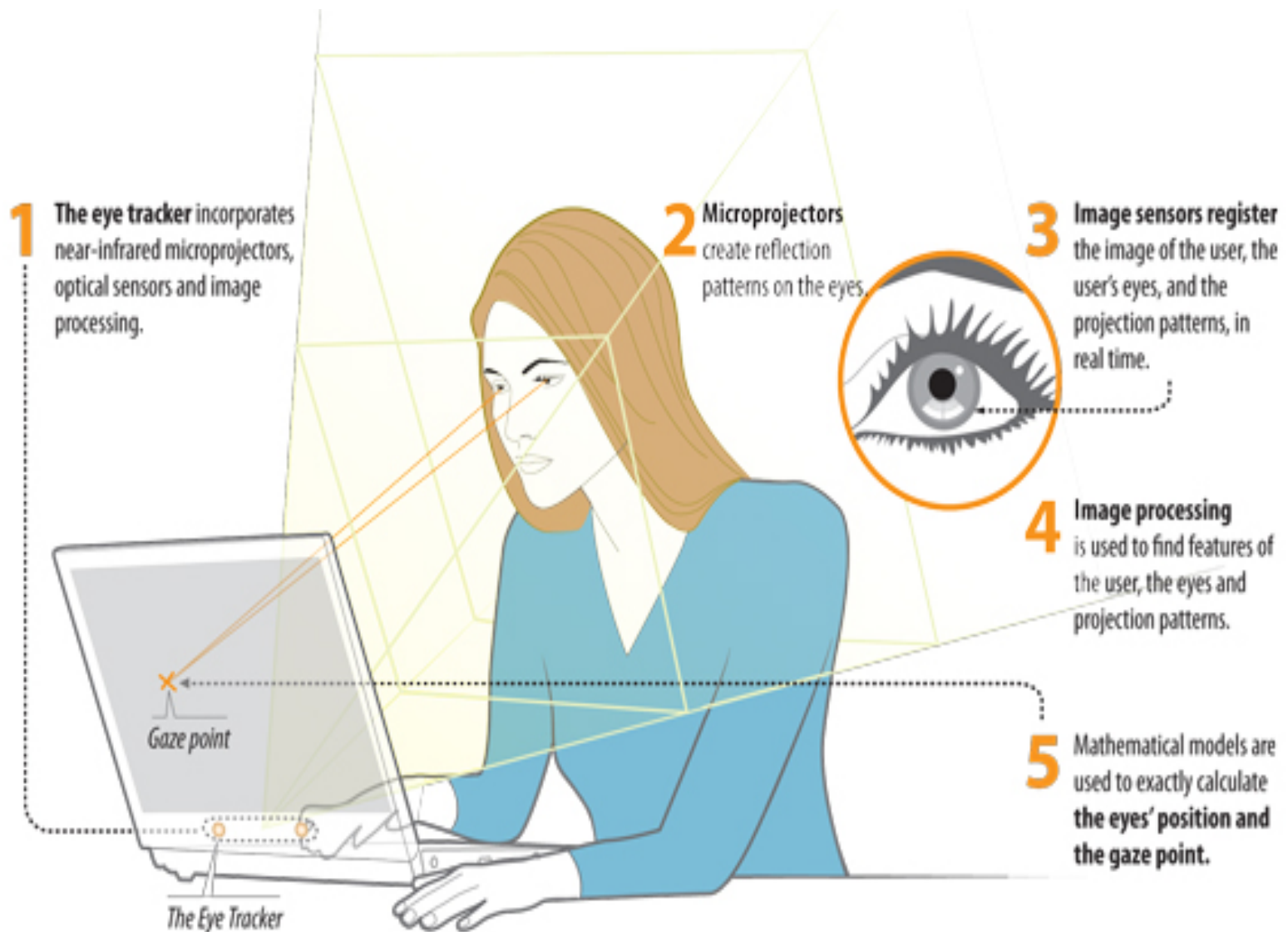
**ORIGINAL RESEARCH**

WILEY **Brain and Behavior** Open Access

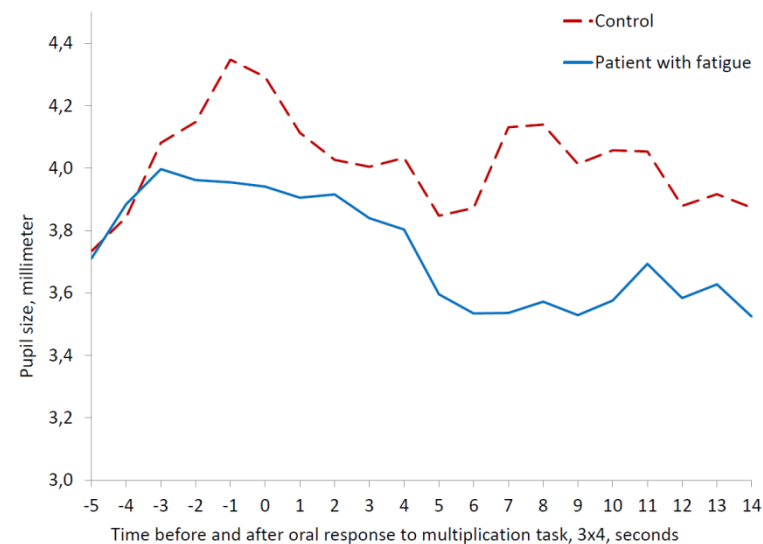
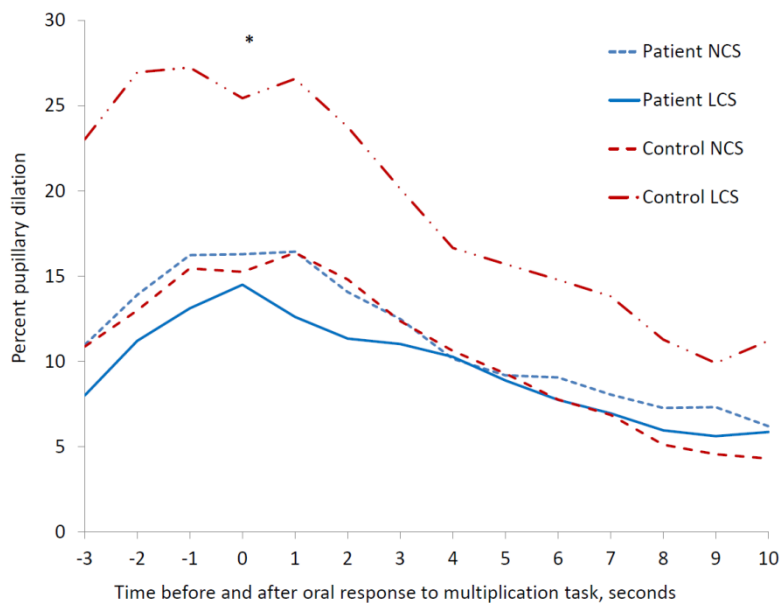
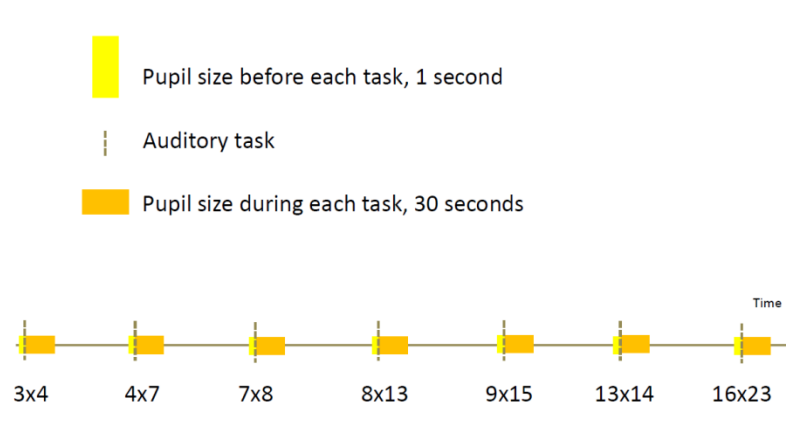
## Fatigue and cognition: Pupillary responses to problem-solving in early multiple sclerosis patients

Sigrid A. de Rodez Benavent<sup>1,†</sup>  | Gro O. Nygaard<sup>2,†</sup> | Hanne F. Harbo<sup>2</sup> |  
Siren Tønnesen<sup>3</sup> | Piotr Sowa<sup>4</sup> | Nils I. Landrø<sup>3</sup> | Marte Wendel-Haga<sup>2</sup> |  
Lars Etholm<sup>5</sup> | Kristian B. Nilsen<sup>5,6</sup> | Liv Drolsum<sup>1</sup> | Emilia Kerty<sup>2</sup> |  
Elisabeth G. Celius<sup>7</sup> | Bruno Laeng<sup>3</sup>

# Testene (2)

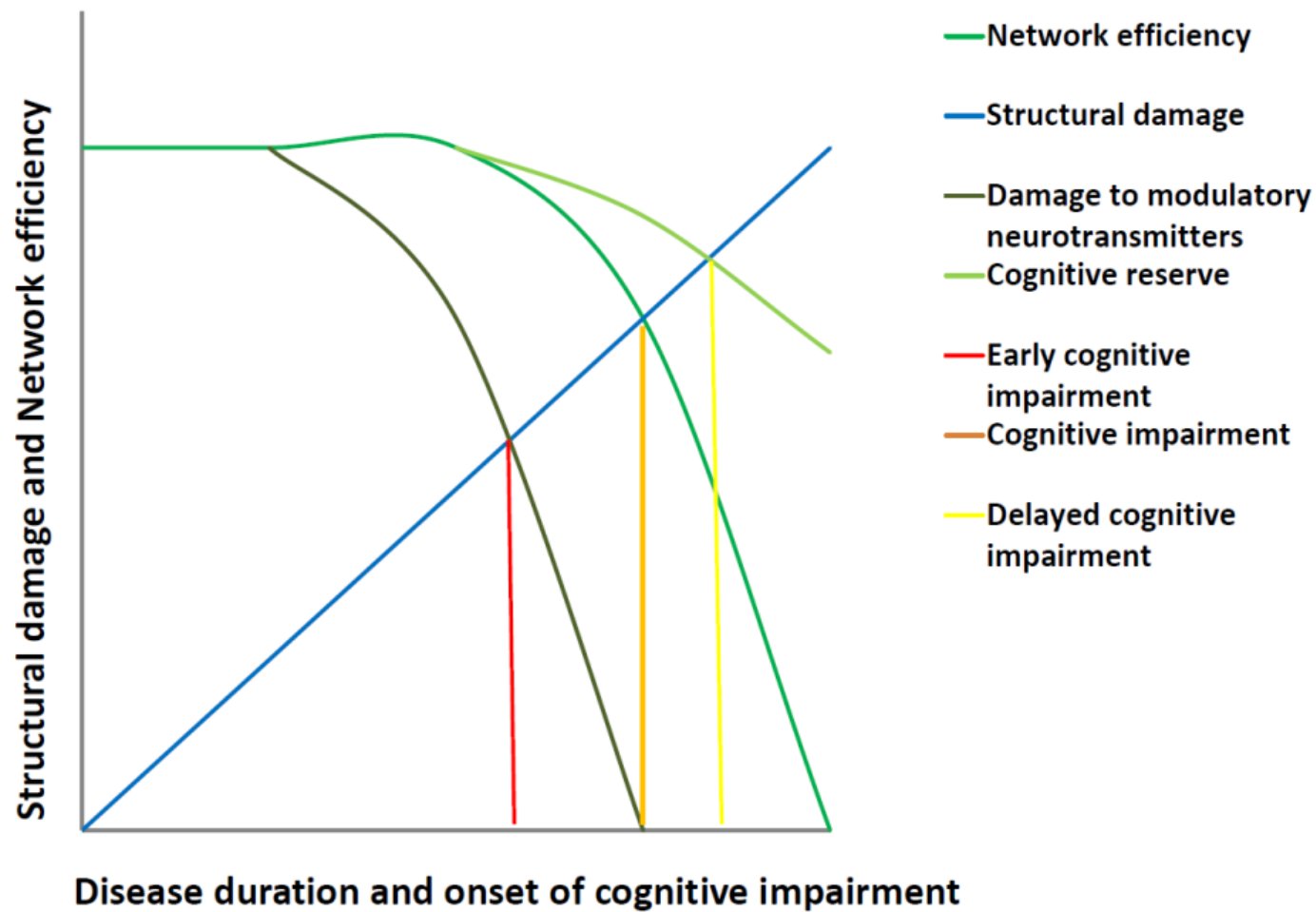


# Funnene (2)





# Hva betyr funnene? (2)



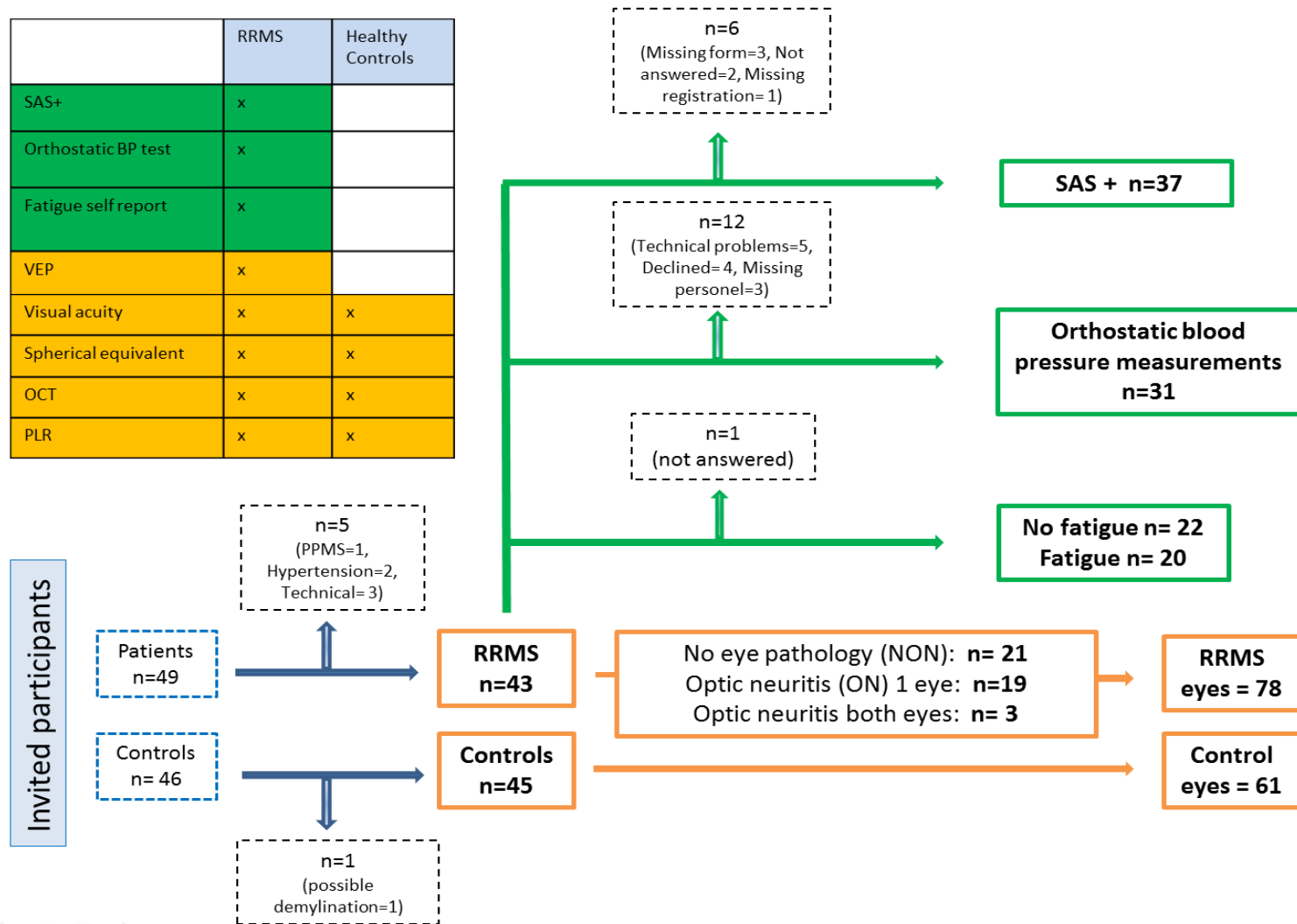
# Manuskript under arbeid

**Title:** Neurodegenerative interplay of cardiovascular autonomic dysregulation and the retina in early multiple sclerosis patients.

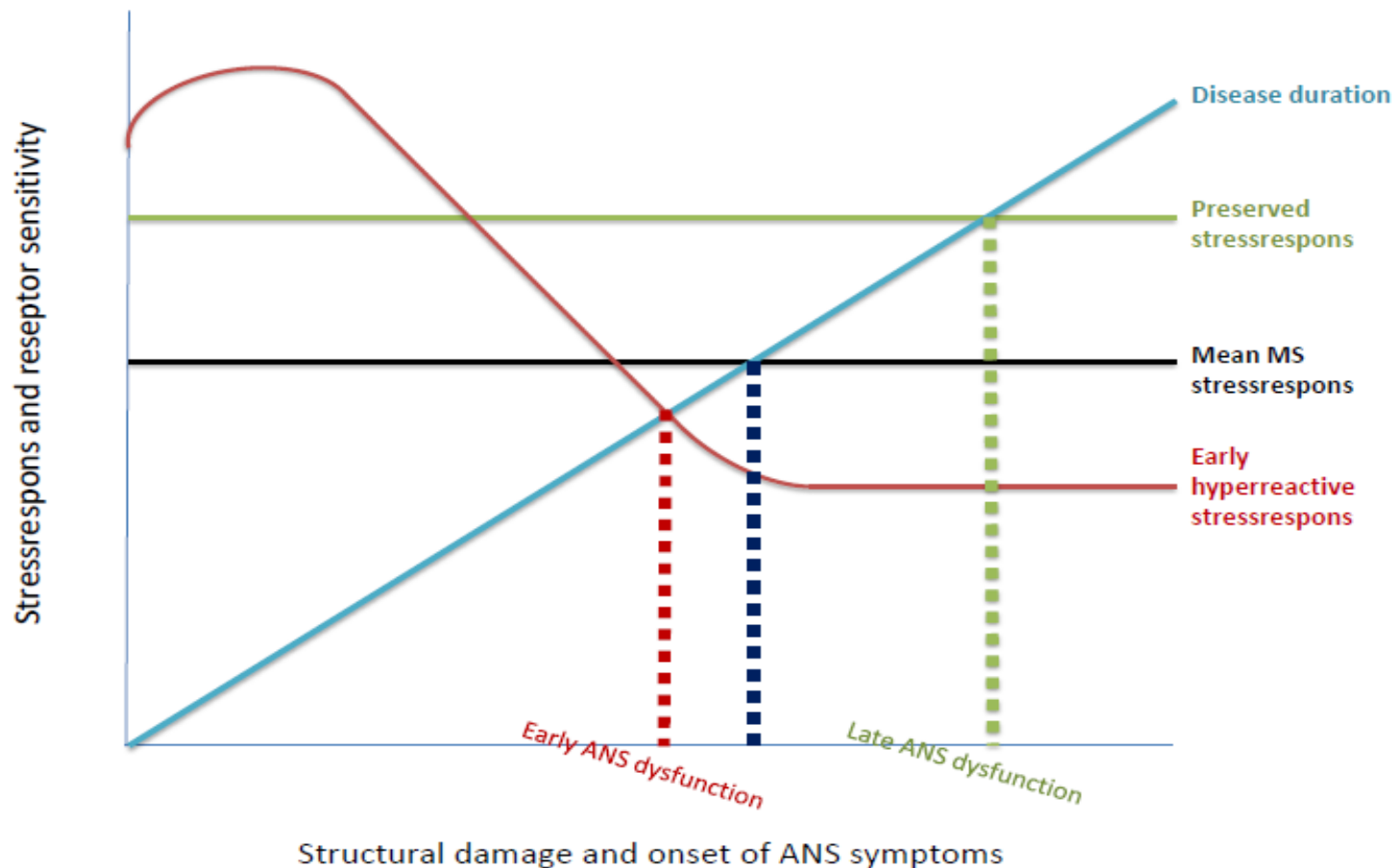
Sigrid A de Rodez Benavent<sup>1\*</sup>, Gro O Nygaard<sup>2</sup>, Lars Etholm<sup>5</sup>, Kristian B Nilsen<sup>6</sup>, Piotr Sowa<sup>4</sup>, Marte W Gustavsen<sup>2</sup>, Hanne F Harbo<sup>2</sup>, Liv Drolsum<sup>1</sup>, Bruno Laeng<sup>3</sup>, Emilia Kerty<sup>2</sup>, Elisabeth G Celius<sup>7</sup><sup>1</sup>

# Testene (3)

	RRMS	Healthy Controls
SAS+	x	
Orthostatic BP test	x	
Fatigue self report	x	
VEP	x	
Visual acuity	x	x
Spherical equivalent	x	x
OCT	x	x
PLR	x	x



# Hva betyr funnene? (3)



# Takk for at dere er med!

## LA OSS FINNE SVAR SAMMEN!