Ambulant EEG voor de diagnostiek van epilepsie

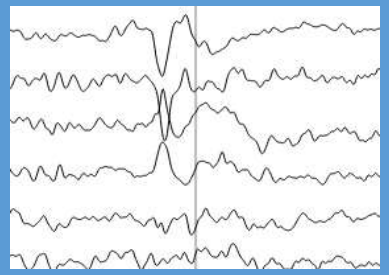
Marleen Tjepkema

Neurocentrum MST

UNIVERSITY OF TWENTE.

Epilepsie = Verhoogd risico op insulten

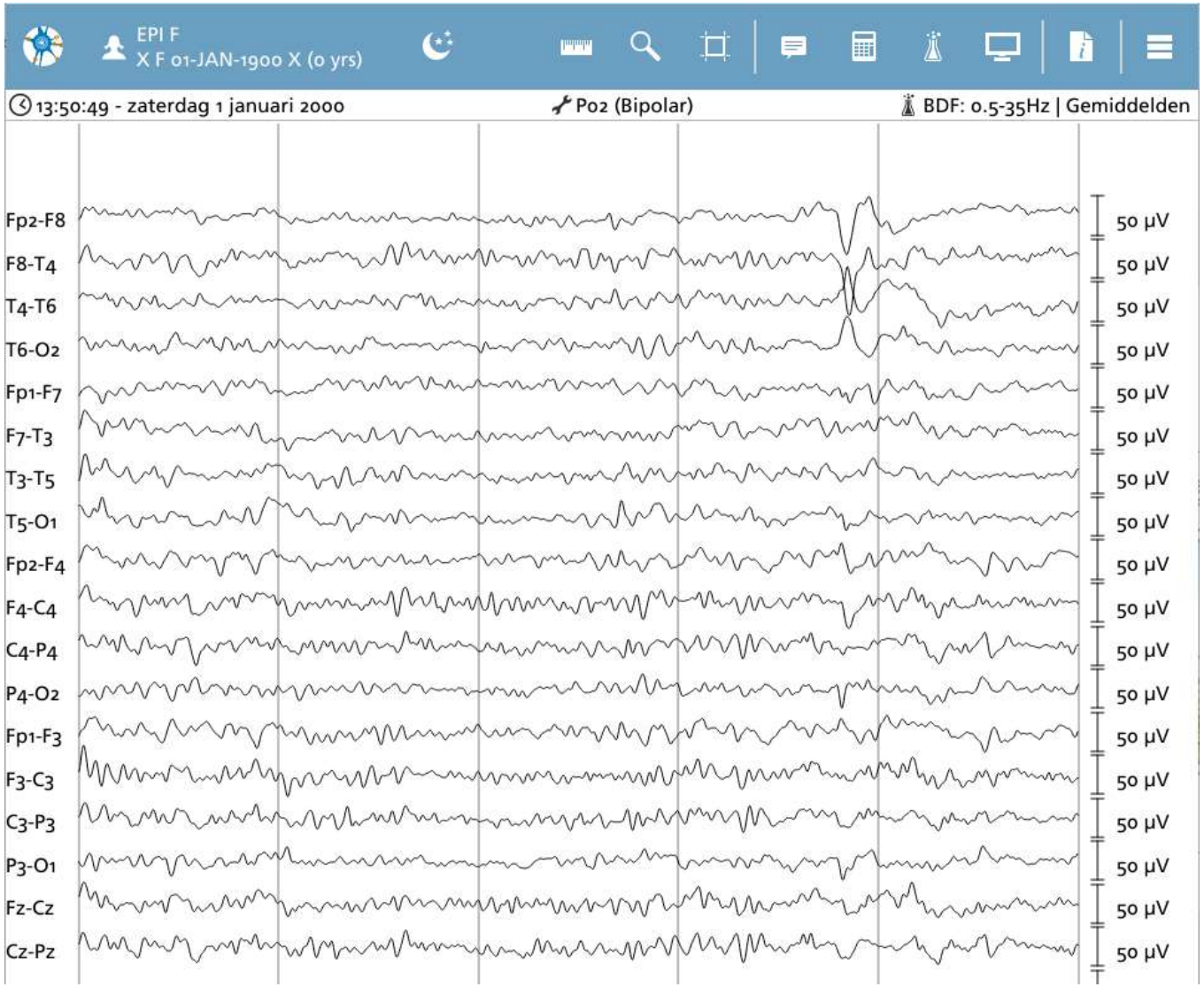
1. +

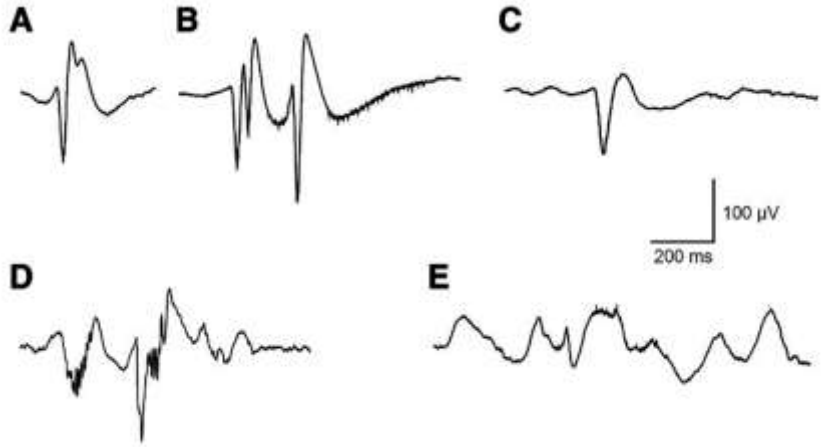
2. + 

3. Epilepsiesyndroom

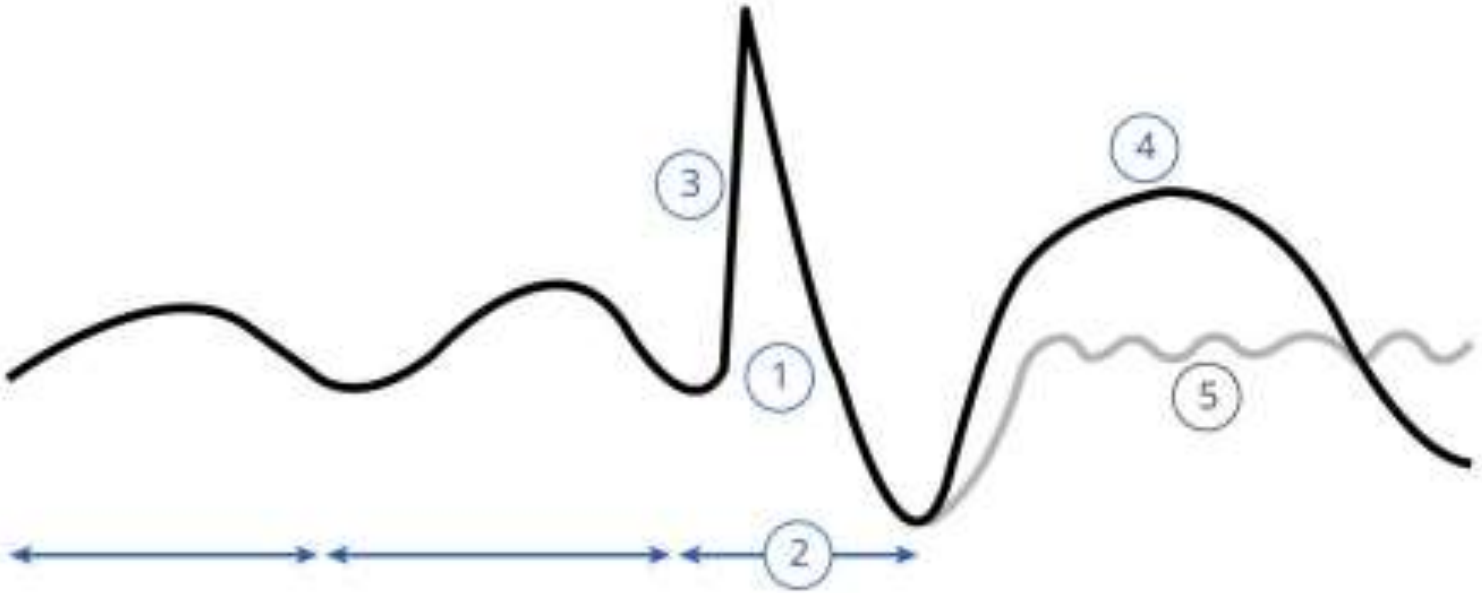
Definitie Epilepsie ILAE (2014)

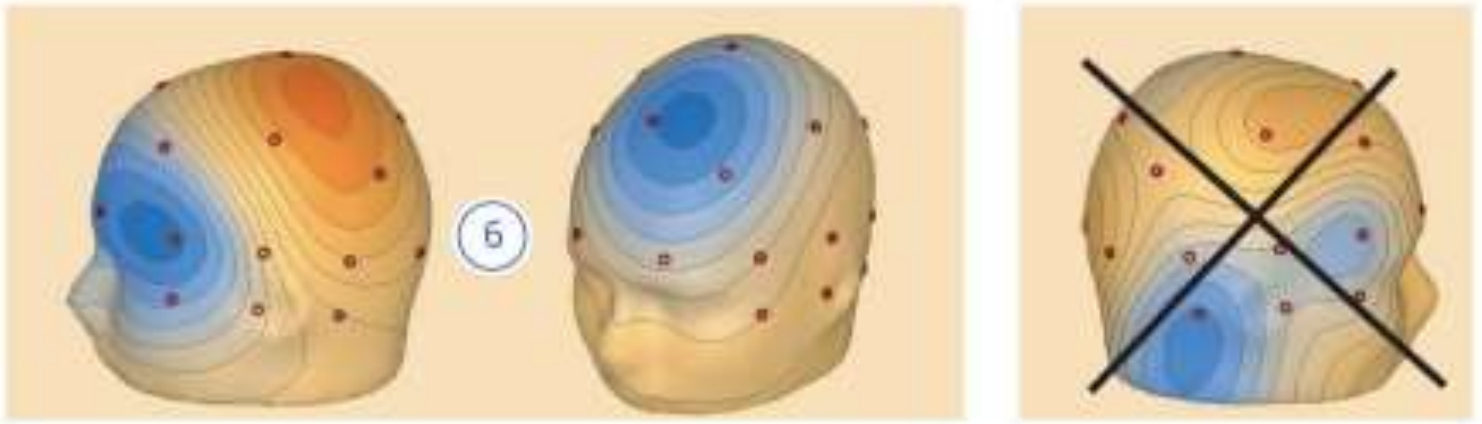
Interictale epileptiforme afwijkingen





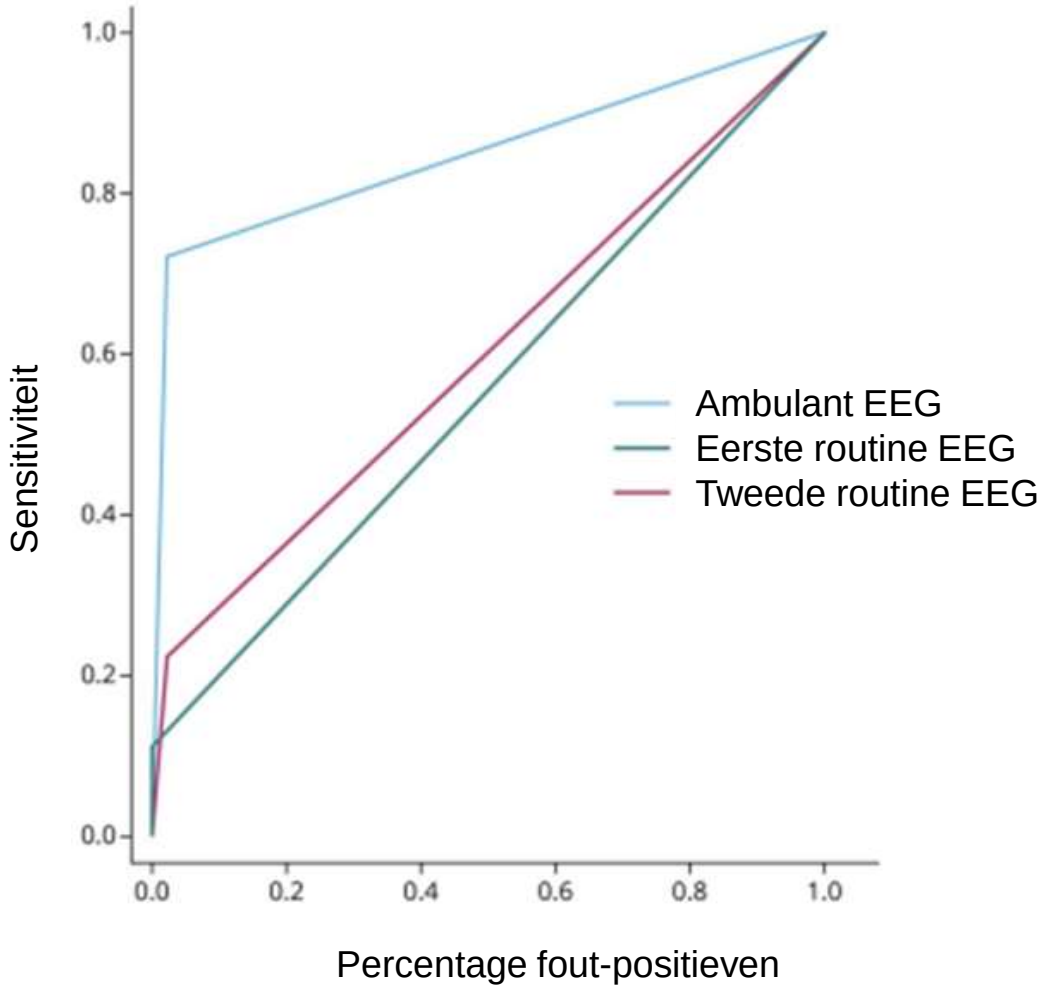
Criteria epileptiforme afwijkingen





Kural et al., 2020

100 patiënten na een eerste ongeprovoceerde aanval



Hernandez-Ronquillo et al. 2023 Neurology: Clinical Practice

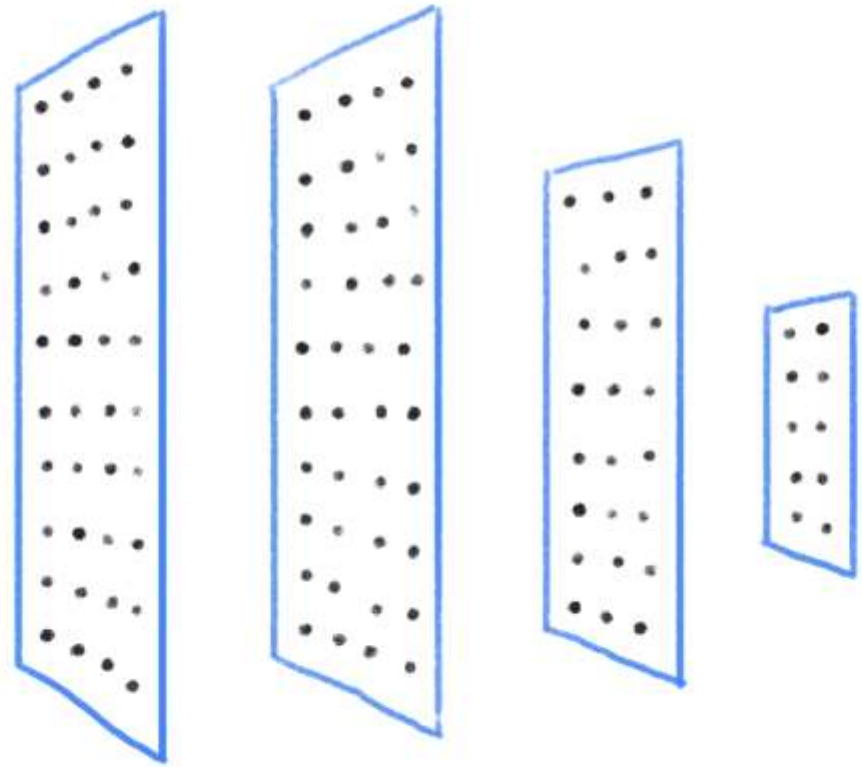
Epileptiforme afwijkingen in het ambulante EEG waren geassocieerd met een 3x hoger risico op een insult in het eerste jaar.

MST

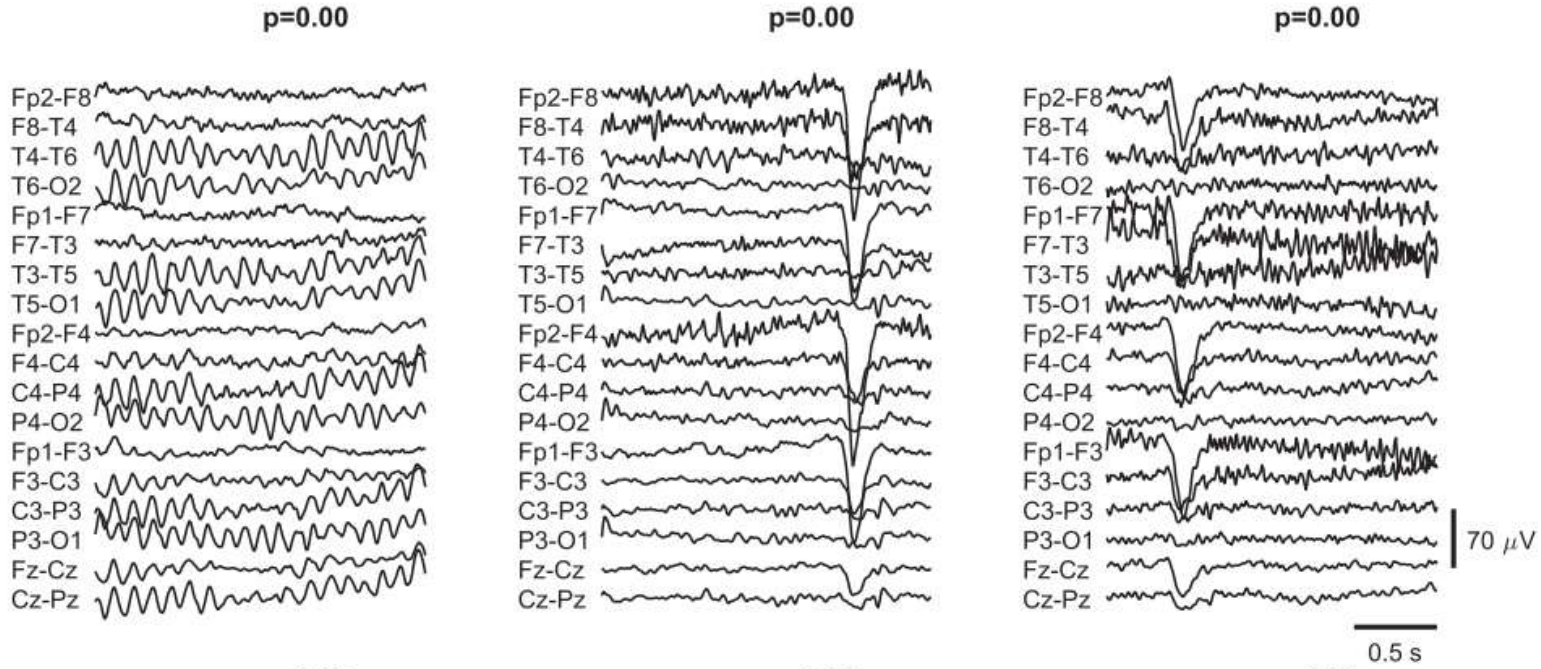
CAT

(LABELED PHOTOS)

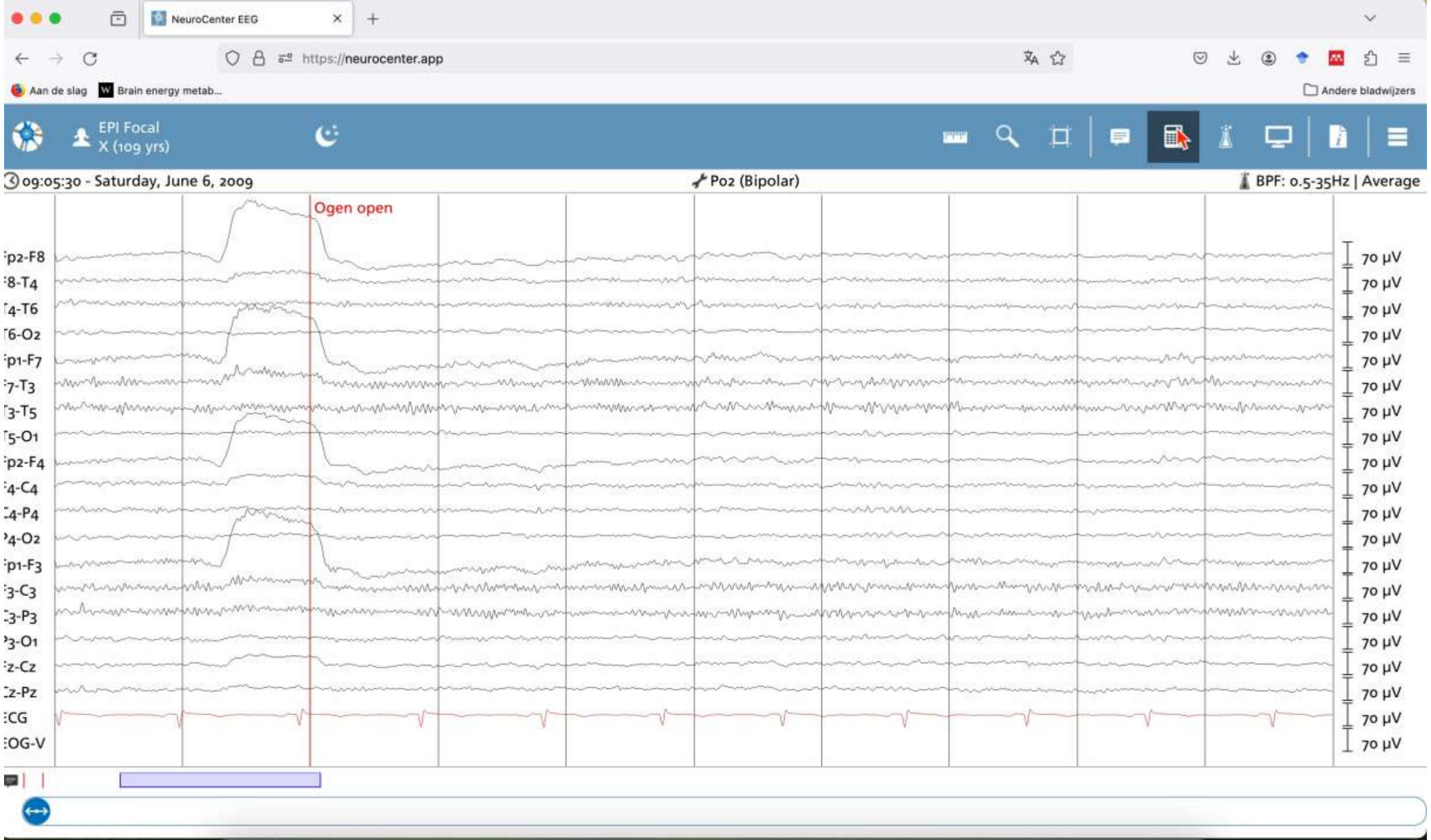
DOG

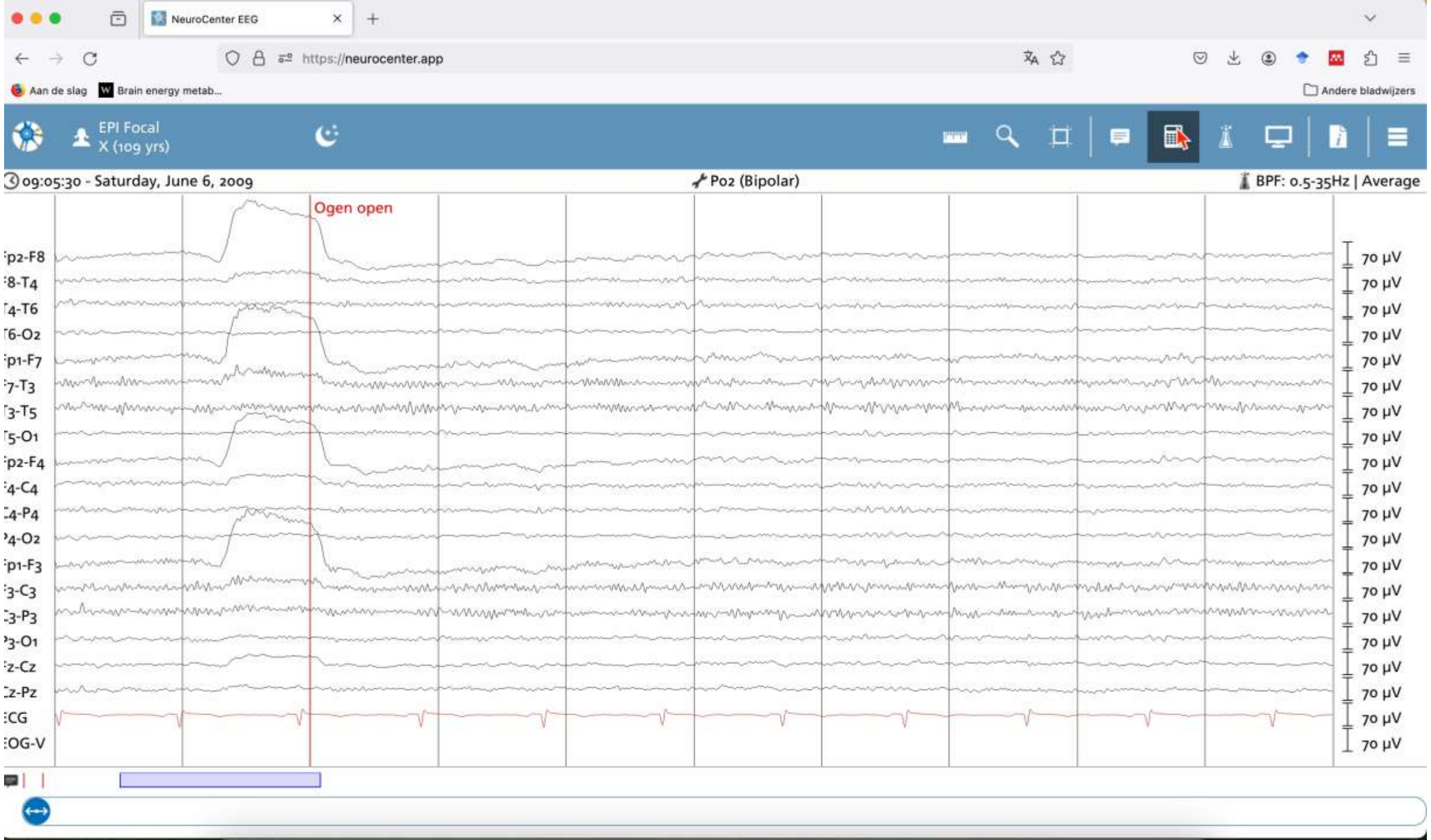


OUTPUT



Tjepkema-Cloostermans et al, Clin Neurophys 2019


NeuroCenter EEG
https://neurocenter.app
Aan de slag
Brain energy metab...
Andere bladwijzers
EPI Focal
X (109 yrs)
09:05:30 - Saturday, June 6, 2009
Po2 (Bipolar)
BPF: 0.5-35Hz | Average
Ogen open
p2-F8
8-T4
4-T6
6-O2
p1-F7
7-T3
3-T5
5-O1
p2-F4
4-C4
C4-P4
P4-O2
p1-F3
3-C3
C3-P3
P3-O1
z-Cz
Cz-Pz
ECG
EOG-V
70 µV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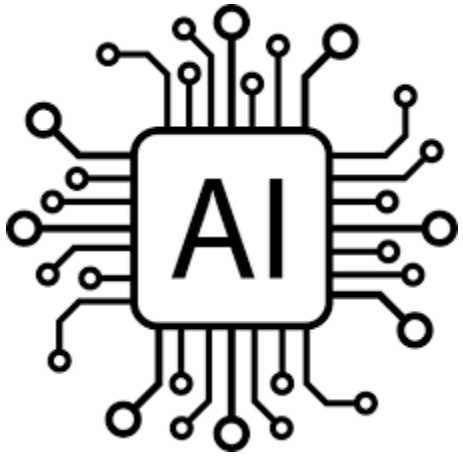
P4-O2
p1-F3
3-C3
C3-P3
P3-O1
z-Cz
Cz-Pz
ECG
EOG-V
70 µV

Hoeveel tijd kunnen we besparen bij de beoordeling van ambulante EEGs?

Lourenco et al, Clin Neurophysiol 2023



100 ambulante EEGs
(gemiddelde duur 20.6 h)

AI netwerk

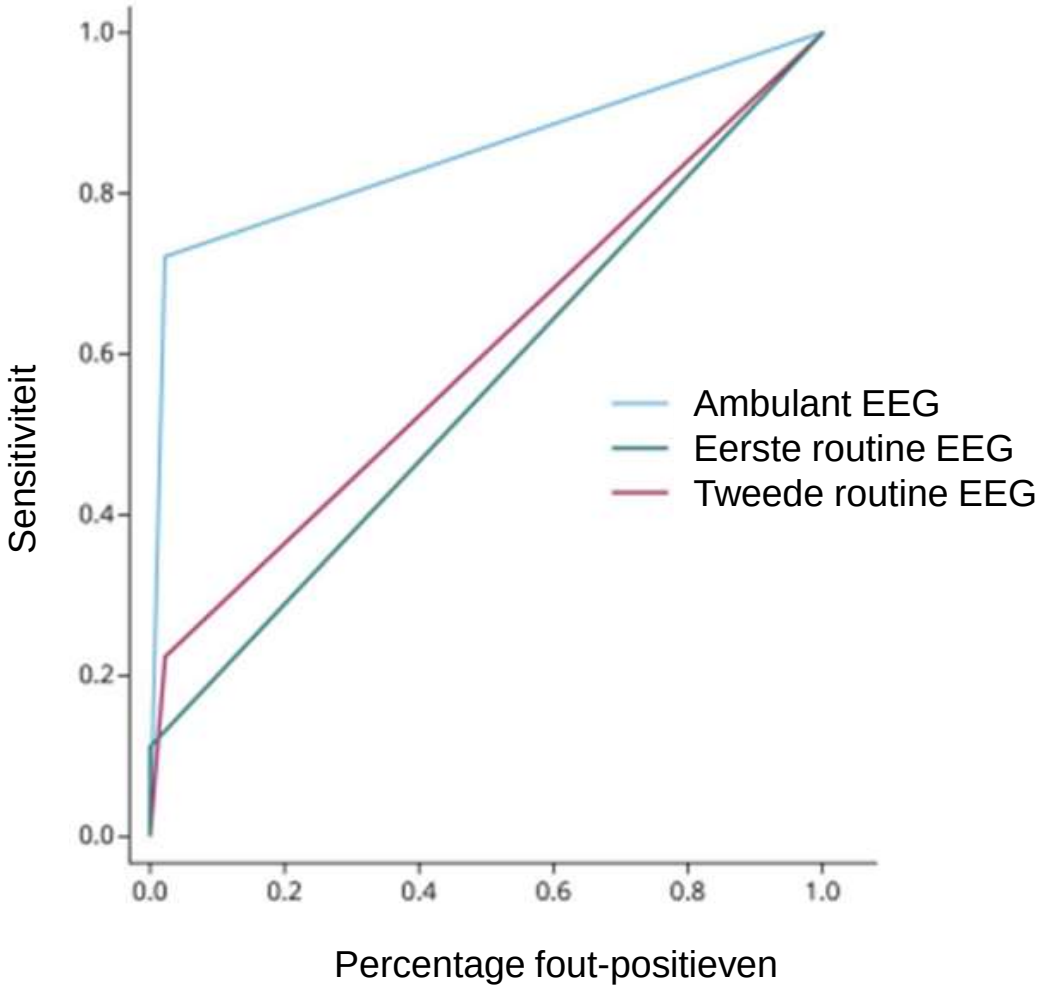
Gemarkeerde events werden
beoordeeld door een expert

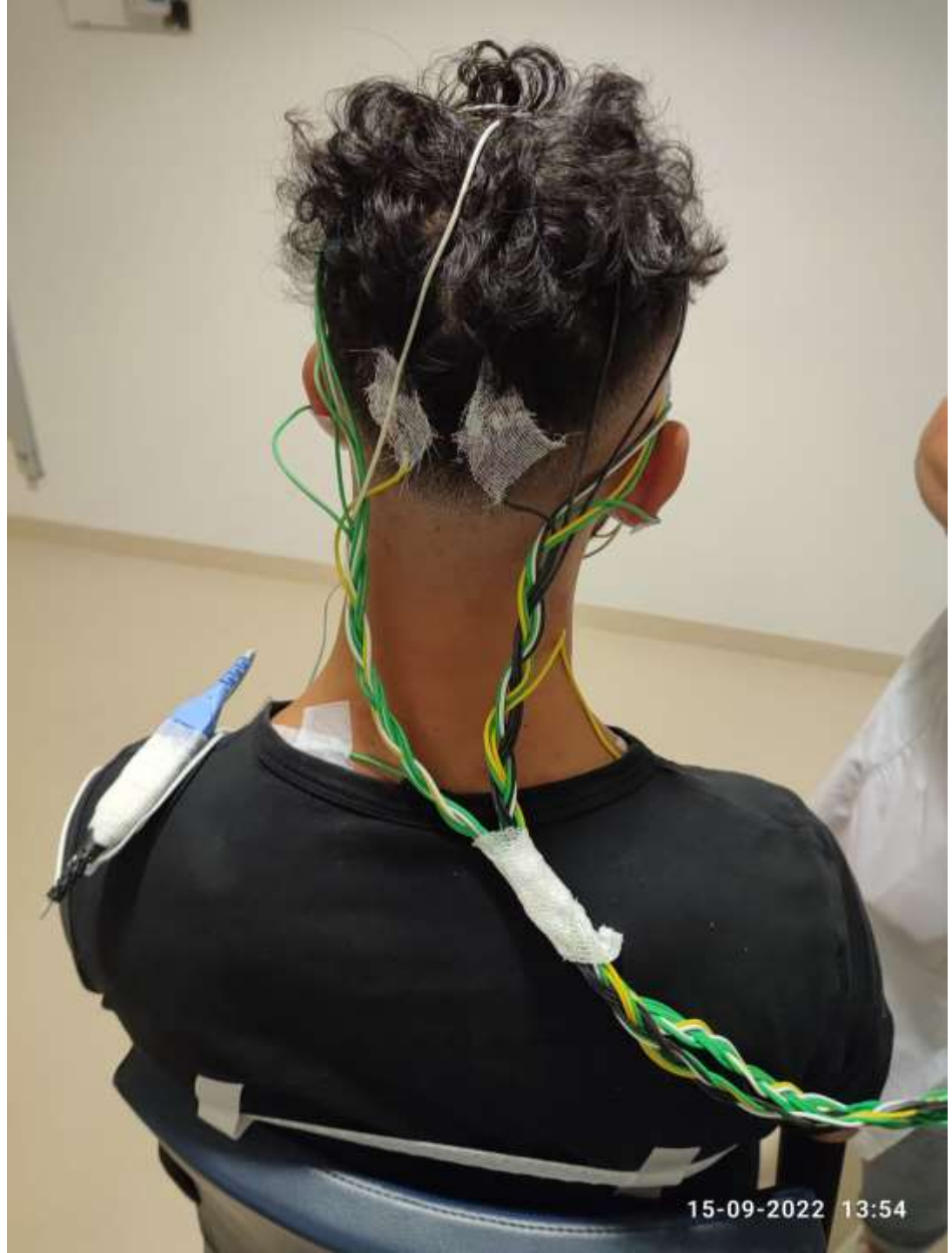
Lourenco et al, Clin Neurophysiol 2023

2.000 uur EEG, beoordeeld in ongeveer 4 uur

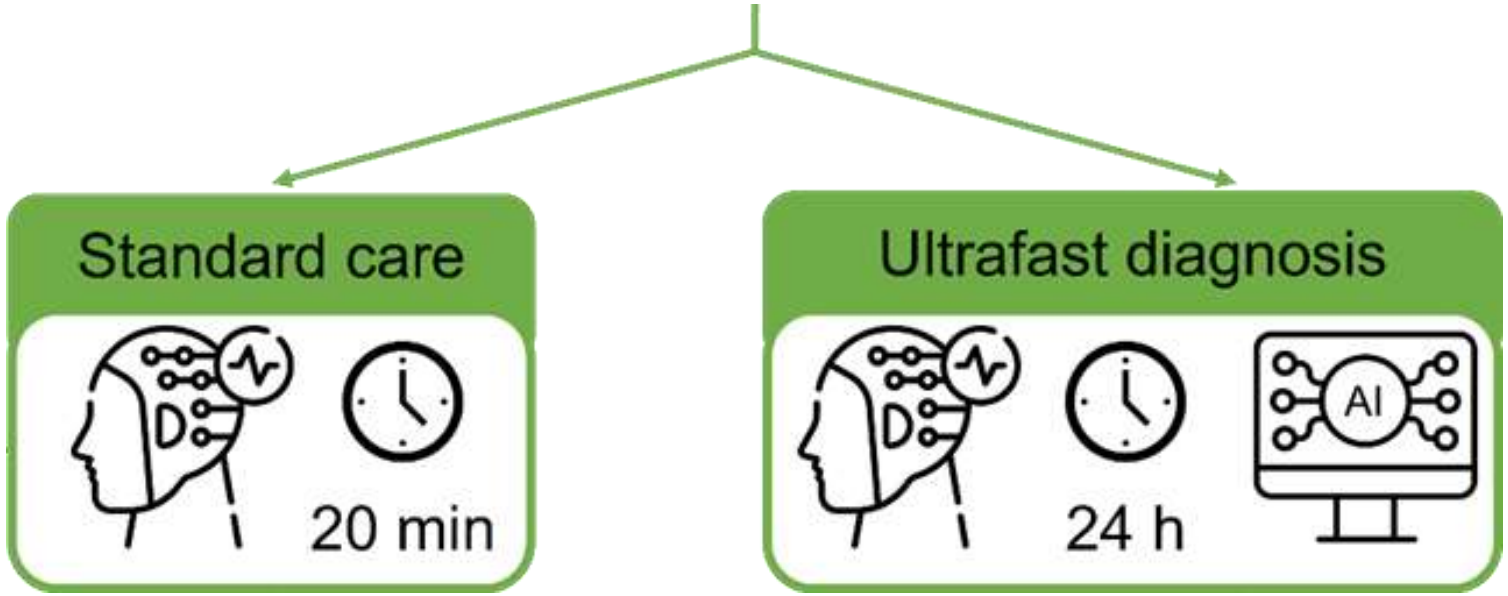
97 van de 100 EEGs correct

Lourenço et al, Clin Neurophysiol 2023


Sensitiviteit
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Ambulant EEG
Eerste routine EEG
Tweede routine EEG
Percentage fout-positieven

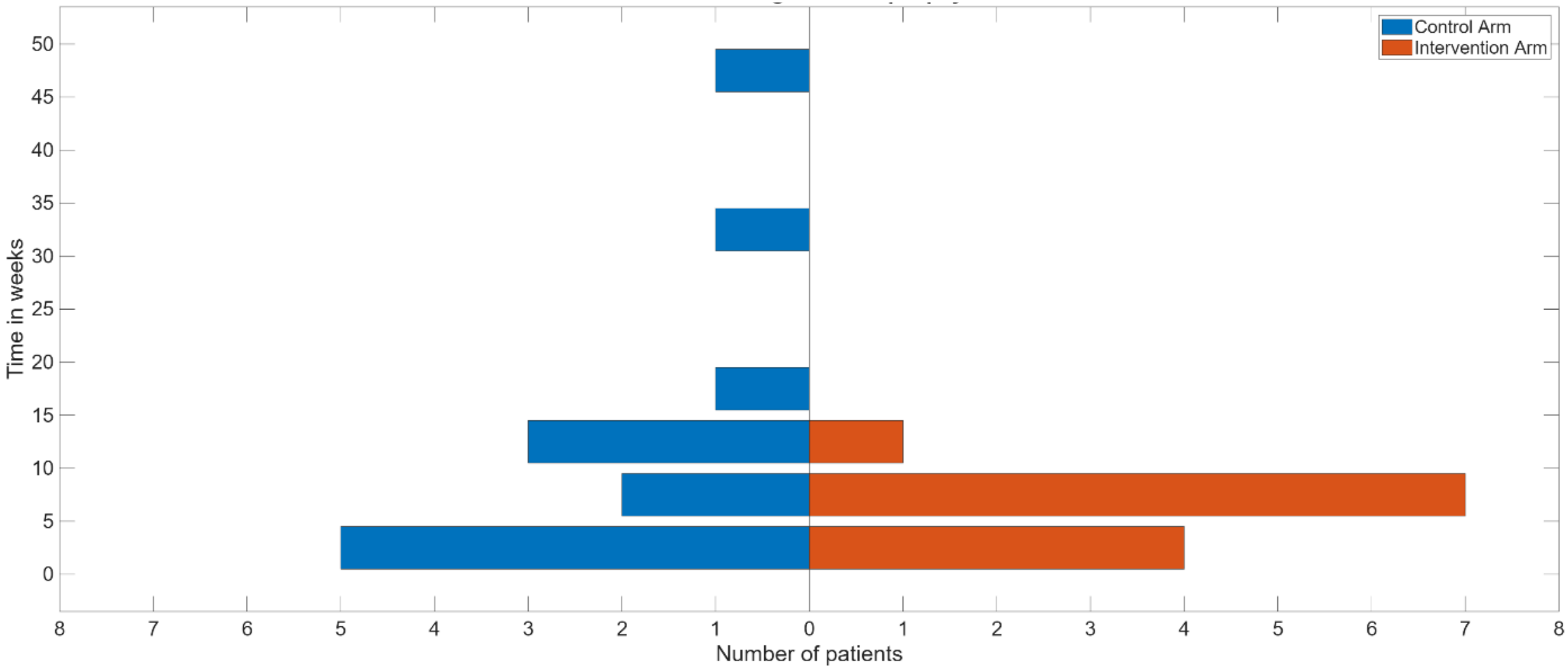

15-09-2022 13:54

Prospectief onderzoek: EASE studie

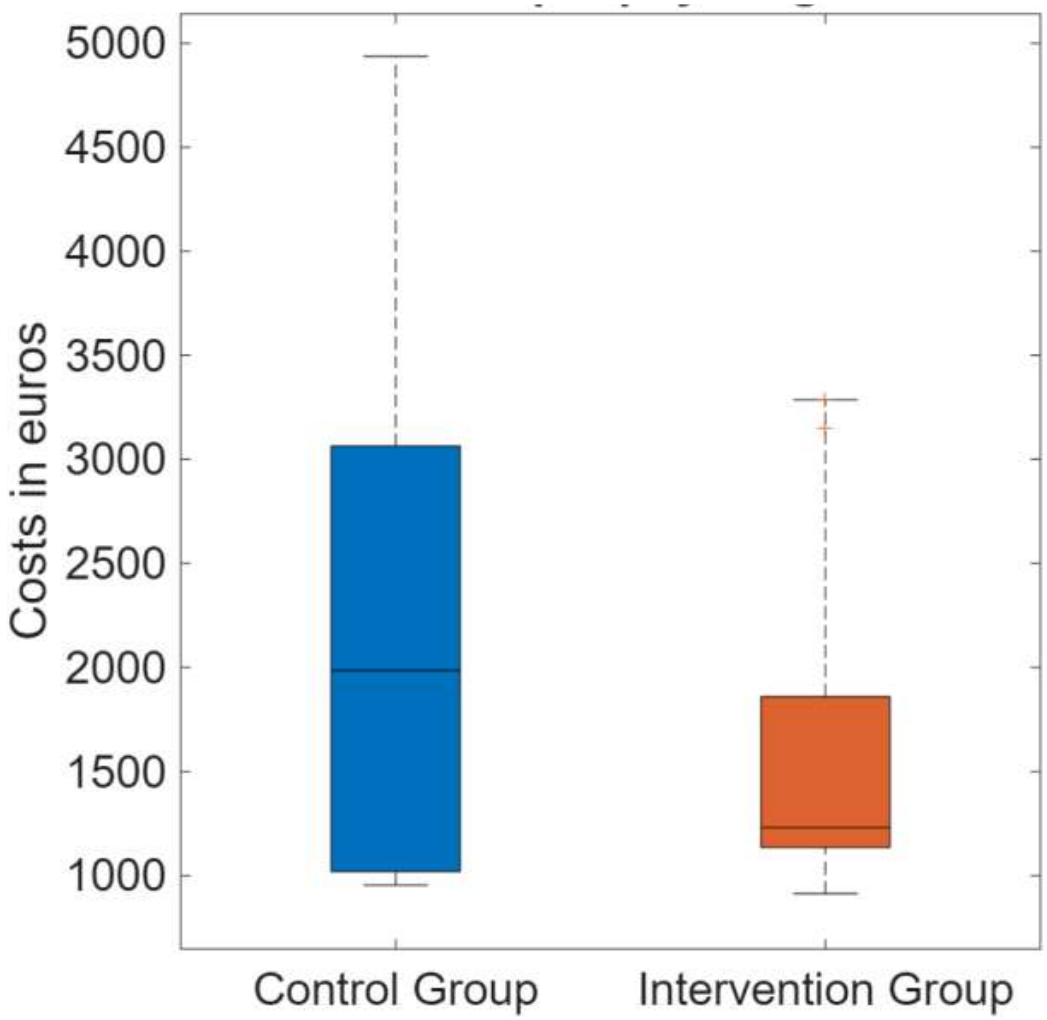


Emilie Klaver

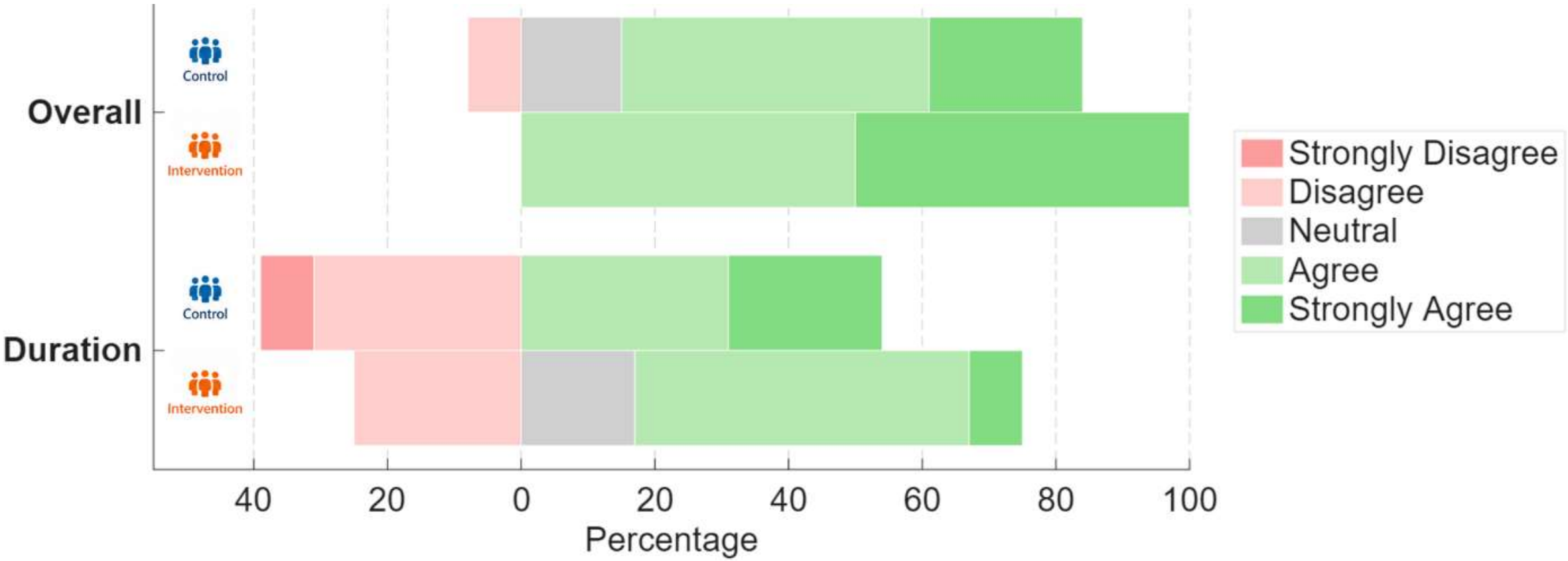
Tijd tot diagnose



Zorgkosten


5000
4500
4000
3500
3000
2500
2000
1500
1000
Costs in euros
Control Group
Intervention Group

Patiënttevredenheid



Casus: 78 jarige man

SEH: Verdenking eerste doorgemaakt insult, trekkingen linkerarm, verminderde gewaarding. Nadien verwardheid.

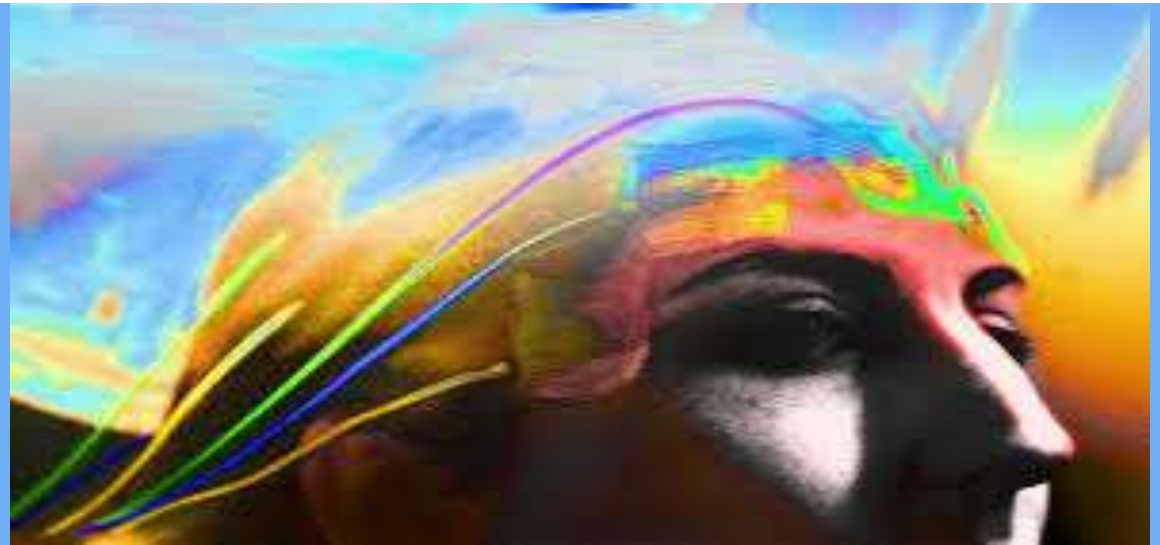
Casus: 14 jarig meisje

- Verdenking doorgemaakt gegeneraliseerd insult?
- Toch functioneel?
- Routine EEG: inconclusief

Vervolg?

Subsidie-aanvraag ingediend voor samenwerking met:

Take Home

Overweeg laagdrempelig een ambulant EEG

AI kan de beoordelingstijd met een factor 50 verkorten met behoud van betrouwbaarheid