Optimaliseren van de behandeling van patiënten met een hersen(stam)tumor

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Mogelijk gemaakt door

Arjan STICHTING

FONDS MATHIEU REUSENS

PIETER VAN LOON - FONDS

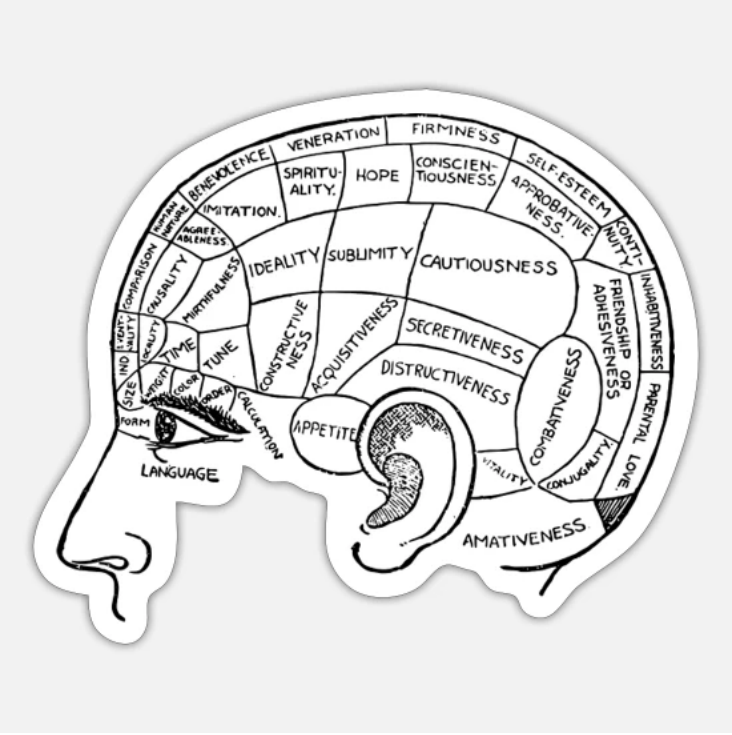
KU LEUVEN

Overzicht

- Introductie
- P1: Neurotoxiciteit na radiotherapie
- P2: Neurocognitieve functie en kwaliteit van leven in overlevers van een (hersenstam)glioma
- P3: NTCP model neurocognitie

Neurologische shade

- Progressief
- Onomkeerbaar
- Invloed kwaliteit van leven
- Nevenwerkingen:
  - Epilepsie
  - Gehoor
  - Zicht
  - Hormonale problemen
  - Cognitie



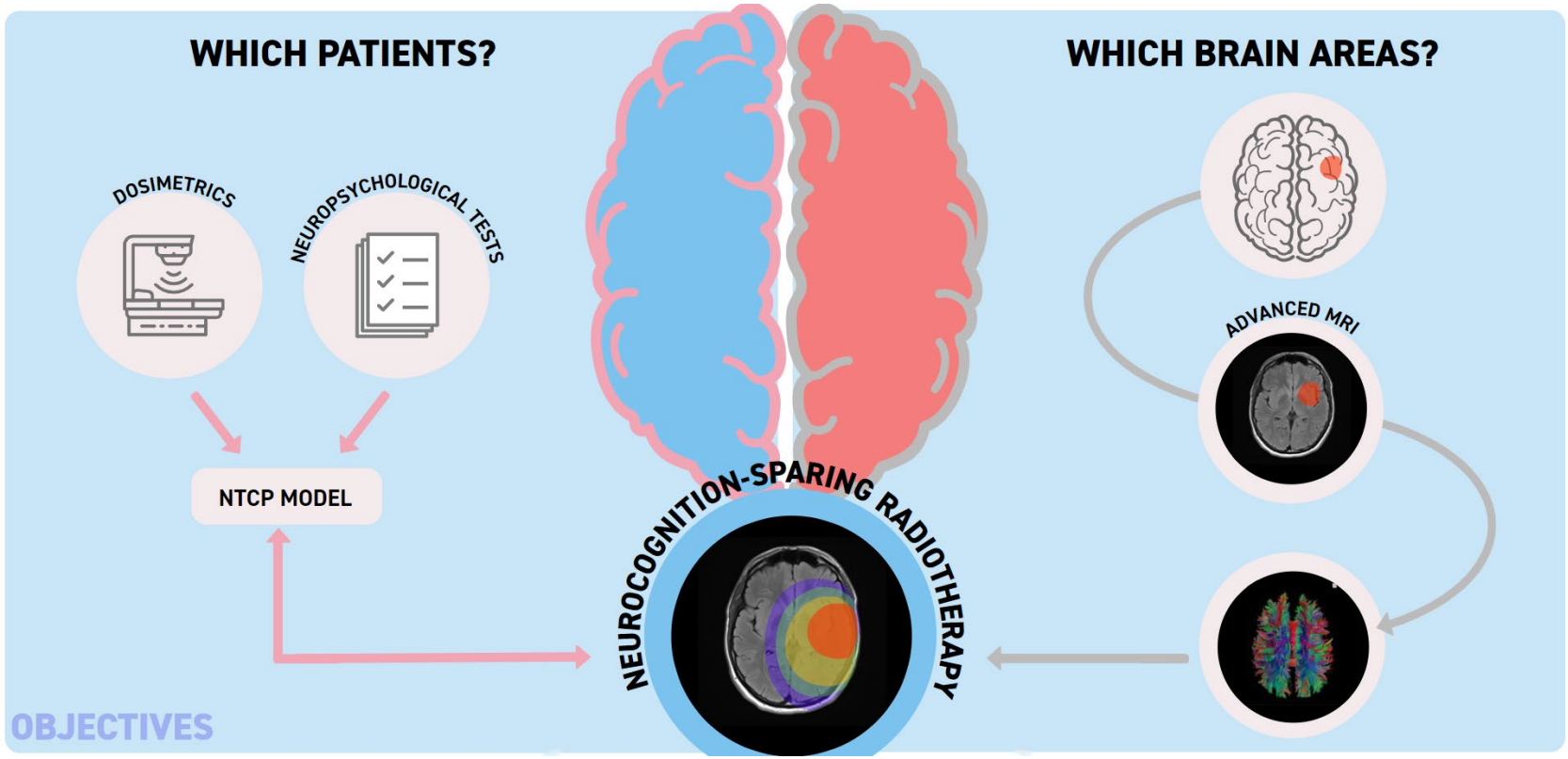
Cognitie

Neurocognitieve achteruitgang

- 50-90% overlevers [1]
- Weinig gegevens[2]
- Onderliggende oorzaak ongekend
- Correlatie met bestralingsdosis
  - Hippocampus – geheugen[3]
  - Frontale zone – executieve functie[4]

1. Gehring, et al. The Lancet Neurology 2008
2. Lawrie et al. The Cochrane database of systematic reviews 2019
3. Gondi et al. Int J Radiat Oncol Biol Phys 2012
4. Haldbo-Classen, et al. Radiother Oncol. 2020

Doel: Neurocognitie-sparende radiotherapie in toekomstige patiënten



Projecten

- P1: Neurotoxiciteit na radiotherapie
- P2: Neurocognitieve functie en kwaliteit van leven in overlevers van een (hersenstam)glioma
- P3: NTCP model neurocognitie

Projecten

- P1: Neurotoxiciteit na radiotherapie
  - 1.1: Consensus richtlijn
- P2: Neurocognitieve functie en kwaliteit van leven in overlevers van een (hersenstam)glioma
- P3: NTCP model neurocognitie

Consensus richtlijn

Wie?

EPTN (ESTRO) – neuro-oncologie experten (24)

Waarom?

- Basis voor opvolging
- Verzamelen gestandaardiseerde toxiciteitsdata
  - Tijd
  - Scoring/ernst
- Verbeteren kennis lange termijn nevenwerkingen

EPTN follow-up proposal							
Evaluations		**Time points**					
			Follow-up after RT				
		Baseline	**1 year** *± 3 months*	**2.5 years** *± 3 months*	**5 years** *± 3 months*	**10 years*** *± 3 months*	**15 years*** *± 3 months*
PROMS							
QoL (short)	EUROQOL-5D-5L	Level I	Level I	Level I	Level I	Level I	Level I
QoL (oncology specific)	EORTC QLQ-C30	Level II	Level II	Level II	Level II	Level II	Level II
QoL (brain specific)	EORTC QLQ-BN20	Level II	Level II	Level II	Level II	Level II	Level II
Hair							
Alopecia grading	CTCAE v5.0			Level I			
Alopecia mapping	Mapping			Level II			
Alopecia dermatological photograps				Level III			
Neurological function							
Epilepsy score	CTCAE v5.0	Level I	Level I	Level I	Level I	Level I	Level I
Headache	CTCAE v5.0	Level I	Level I	Level I	Level I	Level I	Level I
Gait impairment	CTCAE v5.0	Level I	Level I	Level I	Level I	Level I	Level I
Dysphasia	CTCAE v5.0	Level I	Level I	Level I	Level I	Level I	Level I
Neurological function impairment	NANO SCORE	Level II	Level II	Level II	Level II	Level II	Level II
Specific cranial nerve impairment	CTCAE v5.0	Level II	Level II	Level II	Level II	Level II	Level II
Neurocognitive function							
Cognitive disturbance	CTCAE v5.0	Level I	Level I	Level I	Level I	Level I	Level I
Concentration impairment	CTCAE v5.0	Level I	Level I	Level I	Level I	Level I	Level I
Memory impairment	CTCAE v5.0	Level I	Level I	Level I	Level I	Level I	Level I
Neurocognitive test battery							
Verbal learning and memory	HVLT-R	Level II	Level II	Level II	Level II	Level II	Level II
Cognitive processing speed and executive functioning	TMT part A/B	Level II	Level II	Level II	Level II	Level II	Level II
Verbal fluency	COWA	Level II	Level II	Level II	Level II	Level II	Level II

https://www.cancerdata.org/resource/doi%3A10.17195/candat.2021.09.1

Consensus richtlijn

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journal homepage: www.thegreenjournal.com

Review Article

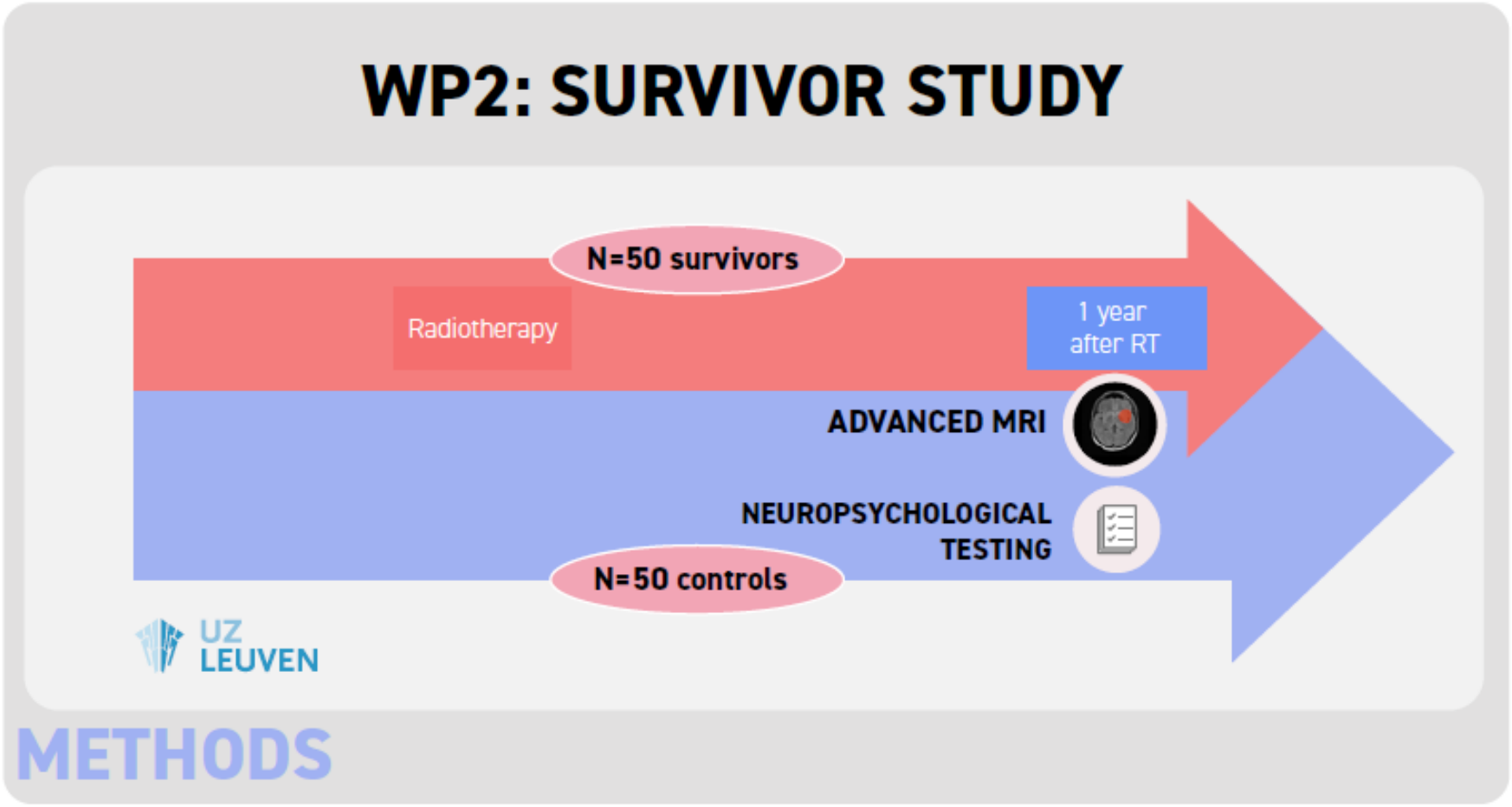
The European Particle Therapy Network (EPTN) consensus on the follow-up of adult patients with brain and skull base tumours treated with photon or proton irradiation

Laurien De Roeck [a,b,*], Hiska L. van der Weide [c], Daniëlle B.P. Eekers [d], Miranda C. Kramer [c], Claire Alapetite [e], Malin Blomstrand [f], Neil G. Burnet [g], Valentin Calugaru [h,i], Ida E.M. Coremans [j,k], Dario Di Perri [l,m], Semi Harrabi [n], Alberto Iannalfi [o], Yvonne L.B. Klaver [k], Johannes A. Langendijk [c], Alejandra Méndez Romero [k,p], Frank Paulsen [q], Erik Roelofs [d], Dirk de Ruysscher [d], Beate Timmermann [r,s,t], Pavel Vitek [u], Damien C. Weber [v], Gillian A. Whitfield [w,x], Petra Witt Nyström [y,z], Jaap Zindler [k,aa], Esther G.C. Troost [t,ab,ac,ad,ae,af], Maarten Lambrecht [a,b,m,ag], on behalf of work package 1 of the taskforce "European Particle Therapy Network" of ESTRO

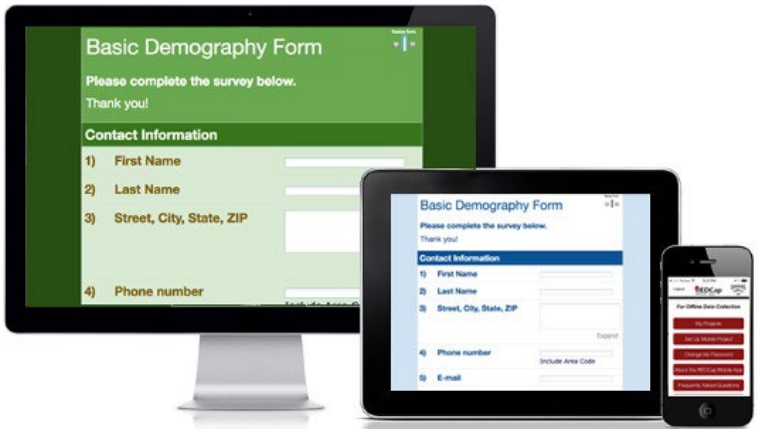
Projecten

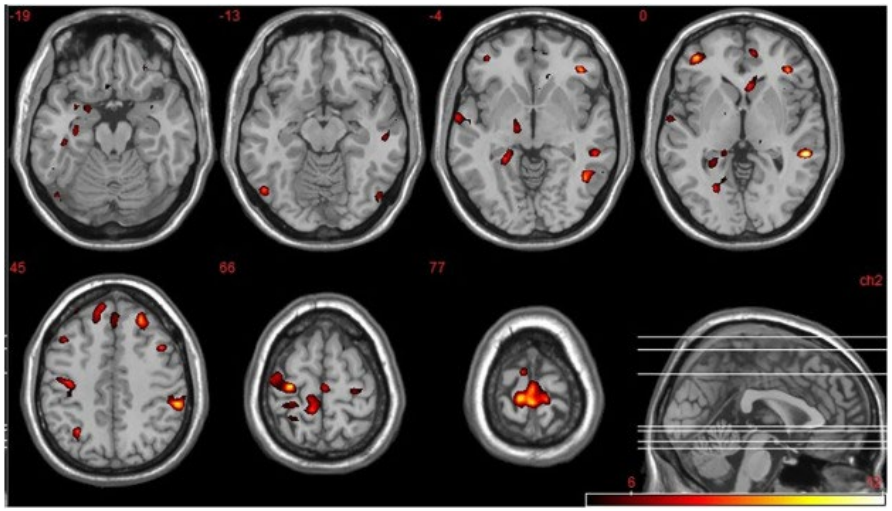
- P1: Neurotoxiciteit na radiotherapie
- P2: Neurocognitieve functie en kwaliteit van leven in overlevers van een (hersenstam)glioma
  - Survivor studie (S63580)
- P3: NTCP model neurocognitie

Methode


WP2: SURVIVOR STUDY
N=50 survivors
Radiotherapy
1 year after RT
ADVANCED MRI
NEUROPSYCHOLOGICAL TESTING
N=50 controls
UZ LEUVEN
METHODS

Methode


Basic Demography Form
Please complete the survey below.
Thank you!
Contact Information
1) First Name
2) Last Name
3) Street, City, State, ZIP
4) Phone number
Basic Demography Form
Please complete the survey below.
Thank you!
Contact Information
1) First Name
2) Last Name
3) Street, City, State, ZIP
4) Phone number
5) E-mail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45
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77
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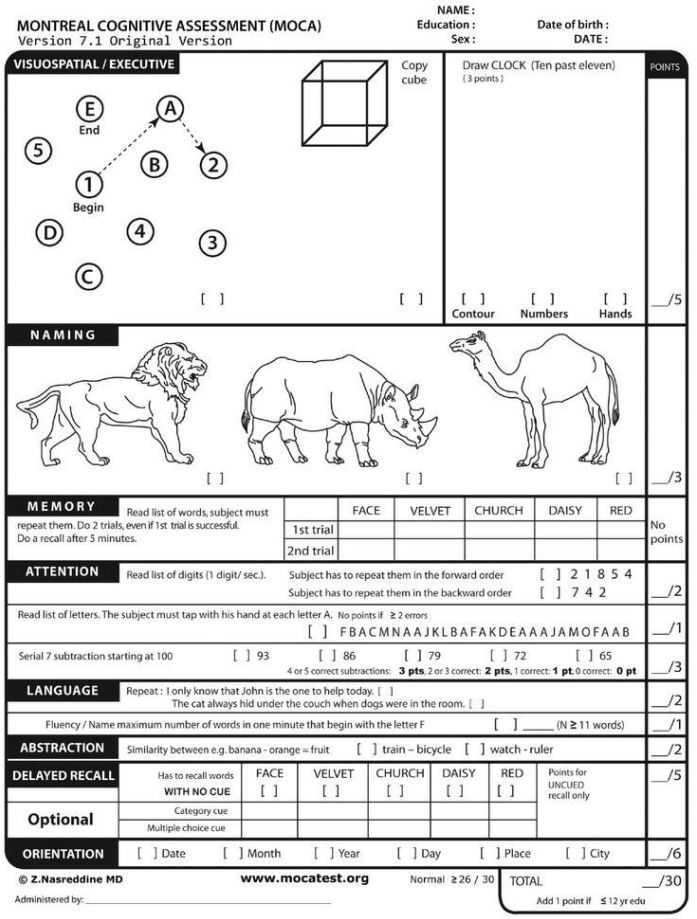
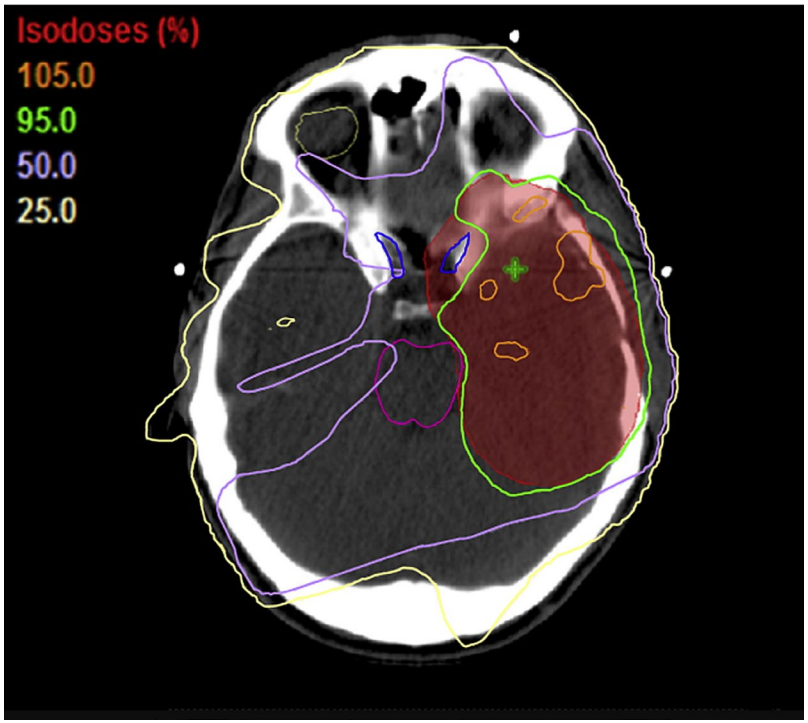
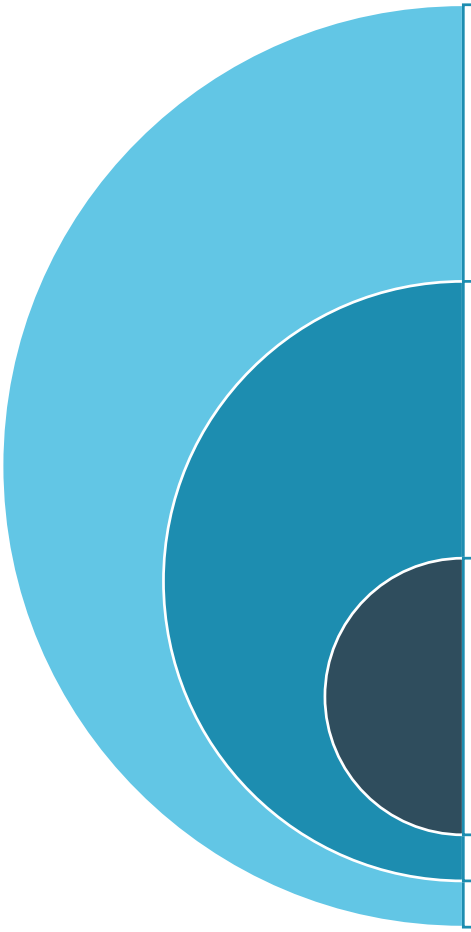

MONTREAL COGNITIVE ASSESSMENT (MOCA)
Version 7.1 Original Version
NAME :
Education :
Sex :
Date of birth :
DATE :
VISUOSPATIAL / EXECUTIVE
Copy cube
Draw CLOCK (Ten past eleven)
(3 points)
POINTS
End
Begin
Contour
Numbers
Hands
/5
NAMING
/3
MEMORY
Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful. Do a recall after 5 minutes.
FACE
VELVET
CHURCH
DAISY
RED
1st trial
2nd trial
No points
ATTENTION
Read list of digits (1 digit/ sec.).
Subject has to repeat them in the forward order [ ] 2 1 8 5 4
Subject has to repeat them in the backward order [ ] 7 4 2
/2
Read list of letters. The subject must tap with his hand at each letter A. No points if ≥ 2 errors
[ ] F B A C M N A A J K L B A F A K D E A A A J A M O F A A B
/1
Serial 7 subtraction starting at 100
[ ] 93 [ ] 86 [ ] 79 [ ] 72 [ ] 65
4 or 5 correct subtractions: 3 pts, 2 or 3 correct: 2 pts, 1 correct: 1 pt, 0 correct: 0 pt
/3
LANGUAGE
Repeat : I only know that John is the one to help today. [ ]
The cat always hid under the couch when dogs were in the room. [ ]
/2
Fluency / Name maximum number of words in one minute that begin with the letter F
[ ] ____ (N ≥ 11 words)
/1
ABSTRACTION
Similarity between e.g. banana - orange = fruit
[ ] train – bicycle [ ] watch - ruler
/2
DELAYED RECALL
Has to recall words WITH NO CUE
FACE
VELVET
CHURCH
DAISY
RED
Points for UNCUED recall only
/5
Optional
Category cue
Multiple choice cue
ORIENTATION
[ ] Date [ ] Month [ ] Year [ ] Day [ ] Place [ ] City
/6
© Z.Nasreddine MD
www.mocatest.org
Normal ≥ 26 / 30
TOTAL
/30
Add 1 point if ≤ 12 yr edu
Administered by:

Hypothese

Link connectoom & bestralingsdosis



Huidige status



<u>Verwacht:</u> 50 glioma survivors 50 gezonde controles
<u>Heden:</u> 42 glioma survivors 5 gezonde controles
2 hersenstamglioma

Projecten

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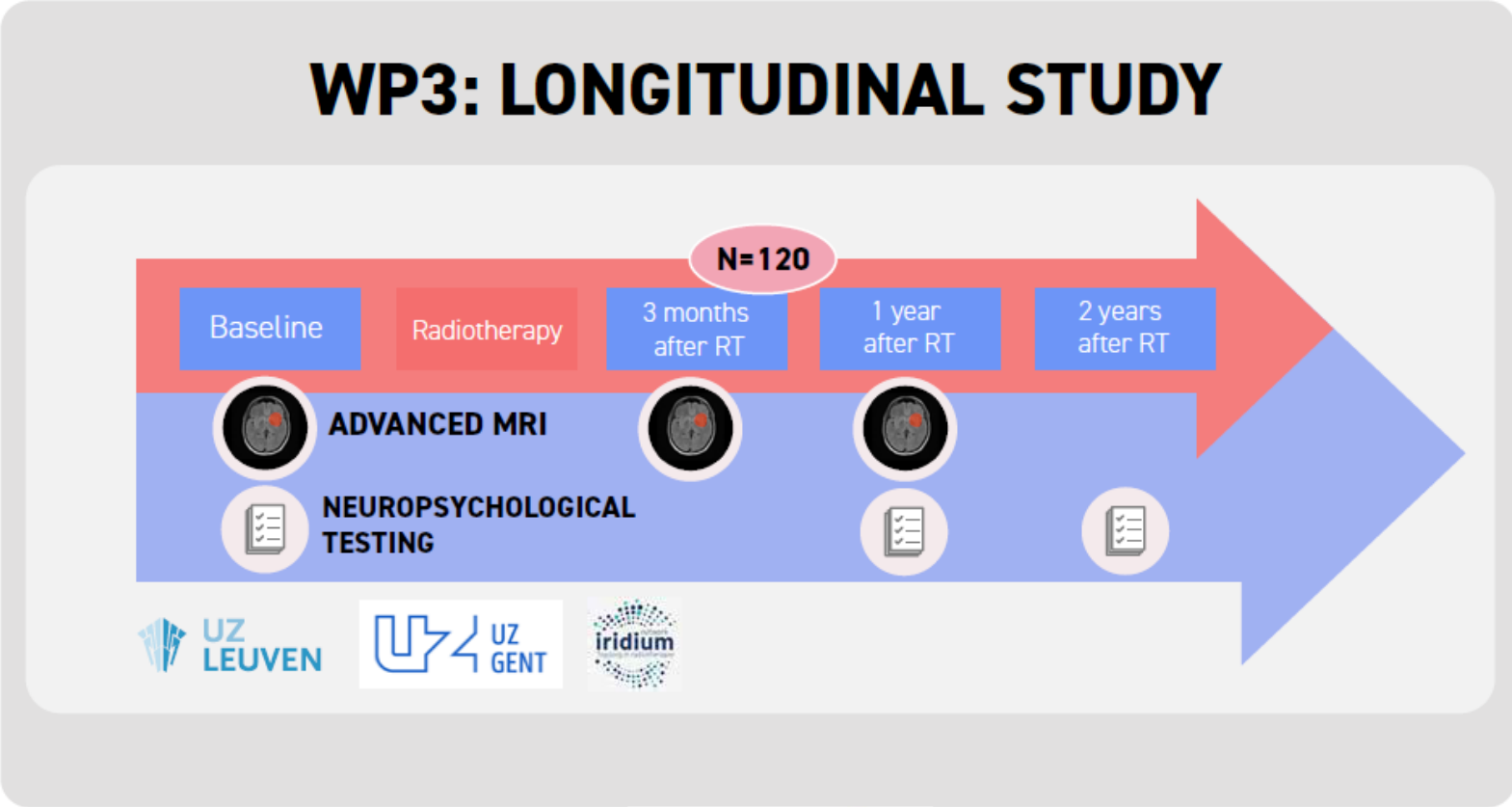
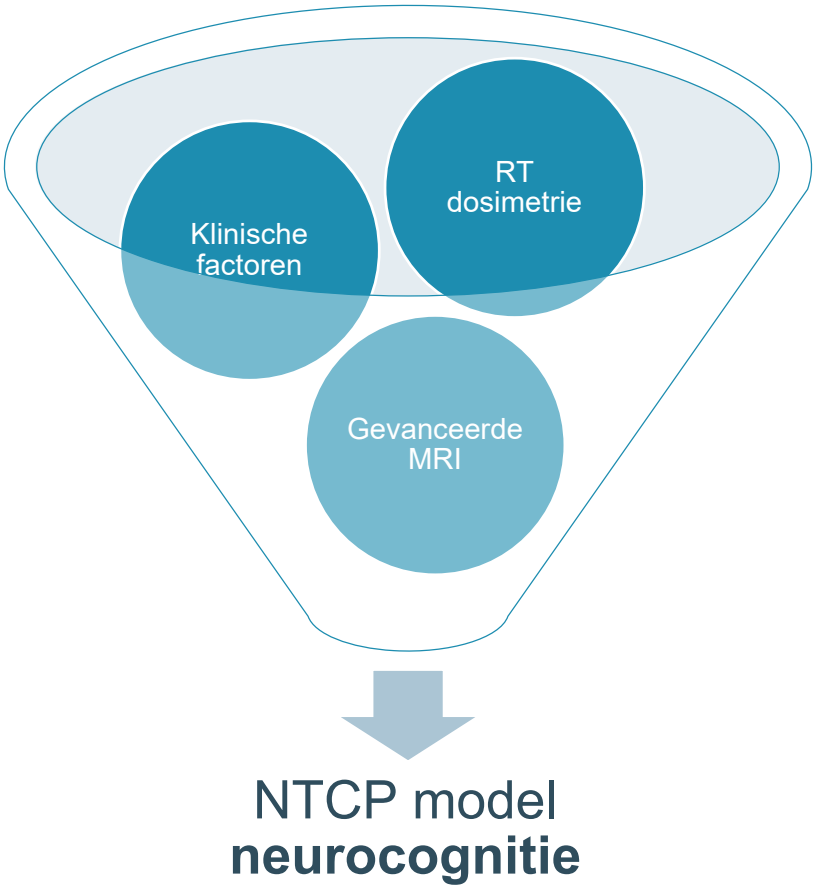
  - Survivor studie (S63580)
- P3: NTCP model neurocognitie
  - NARCiS trial (S65664)

Kom op tegen Kanker

Methode


WP3: LONGITUDINAL STUDY
N=120
Baseline
Radiotherapy
3 months after RT
1 year after RT
2 years after RT
ADVANCED MRI
NEUROPSYCHOLOGICAL TESTING
UZ LEUVEN
UZ GENT
iridium

NTCP model


RT dosimetrie
Klinische factoren
Gevanceerde MRI
NTCP model
neurocognitie

Doel

NTCP model

- **Optimaliseren RT plan**: neurocognitie-sparend
- **Geïnformeerde beslissing**

Prospectieve studies

- **Interventies:** neurorehabilitatie
- **Gerichte therapieën**

Verbetering kwaliteit van leven

Mede dankzij

FONDS MATHIEU REUSENS

Arjan STICHTING

PIETER VAN LOON - FONDS

Kom op tegen Kanker

fwo

UZ LEUVEN

Vragen?