



Expertisecentrum
Hersenletsel
Limburg

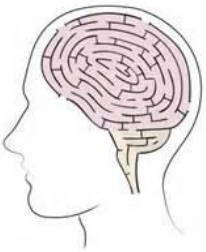
Neuroplasticiteit en cognitieve revalidatie



Caroline van Heugten



Neurowetenschappen



Van hersenen als puzzel of doolhof
Kennis van post-mortem hersenen



Naar levende, actieve hersenen
Studie van structuur en
functie



**Nieuwe vormen van
cognitieve revalidatie?**



Hoe plastisch is ons brein?

Neuroplasticiteit = het vermogen van de hersenen om zich aan te passen qua structuur en functie en te veranderen gedurende ons leven en in reactie op ervaring of interactie met de omgeving

Herhaalde uitvoering van routine taken vanwege beroep leidt tot permanente veranderingen in de hersenen



Korte, intensieve training van een nieuwe taak leidt ook tot structurele en functionele veranderingen

**IN GEZONDE
HERSENEN**





Sport

Taal



الحرية

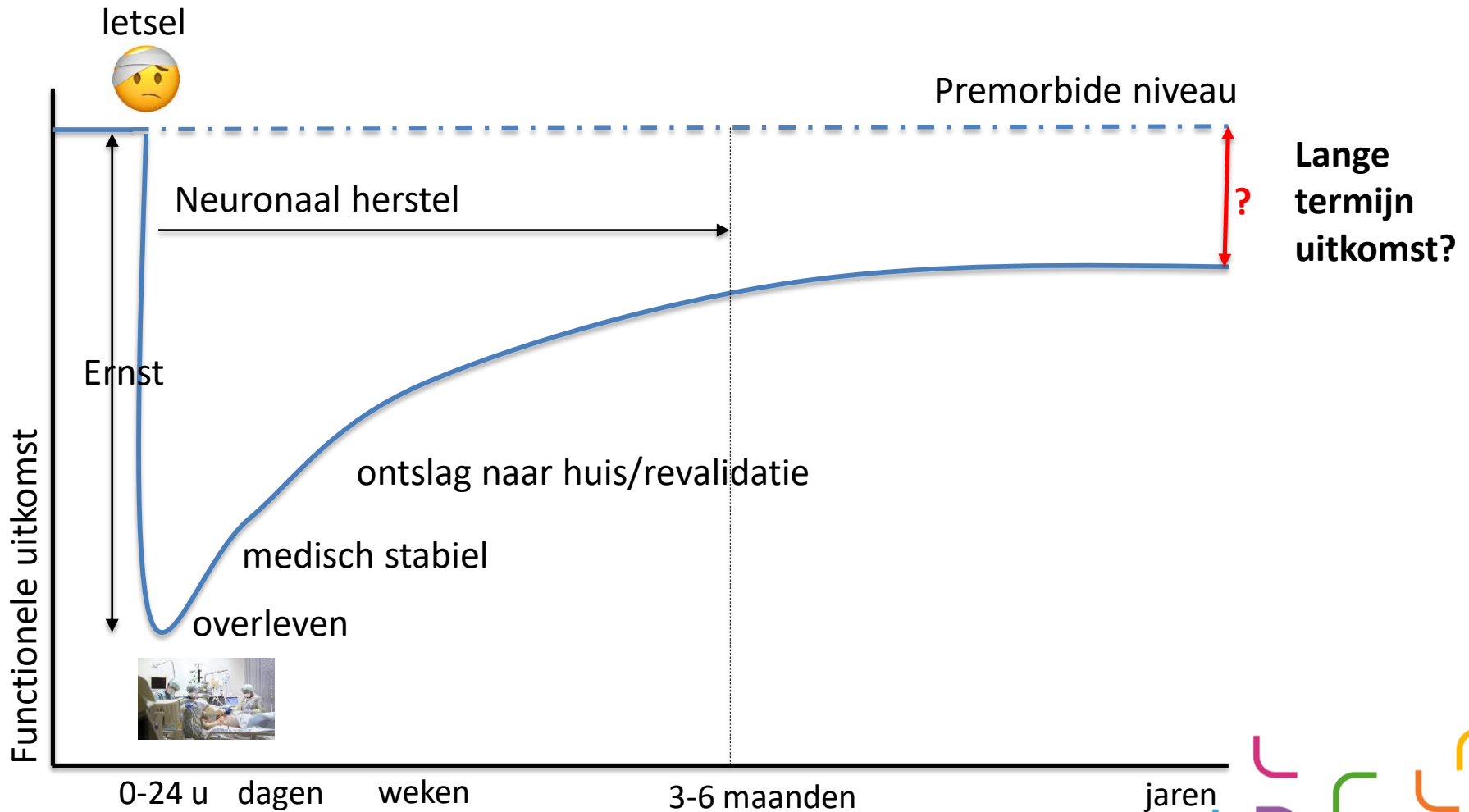
AAP 猴	HAAN 鸡	DRAAK 龙	SLANG 蛇
HOND 狗	ZWIJN 猪	PAARD 马	SCHAAP 羊
RAT 鼠	OS 牛	TIGER 虎	HAAS 兔

Leren

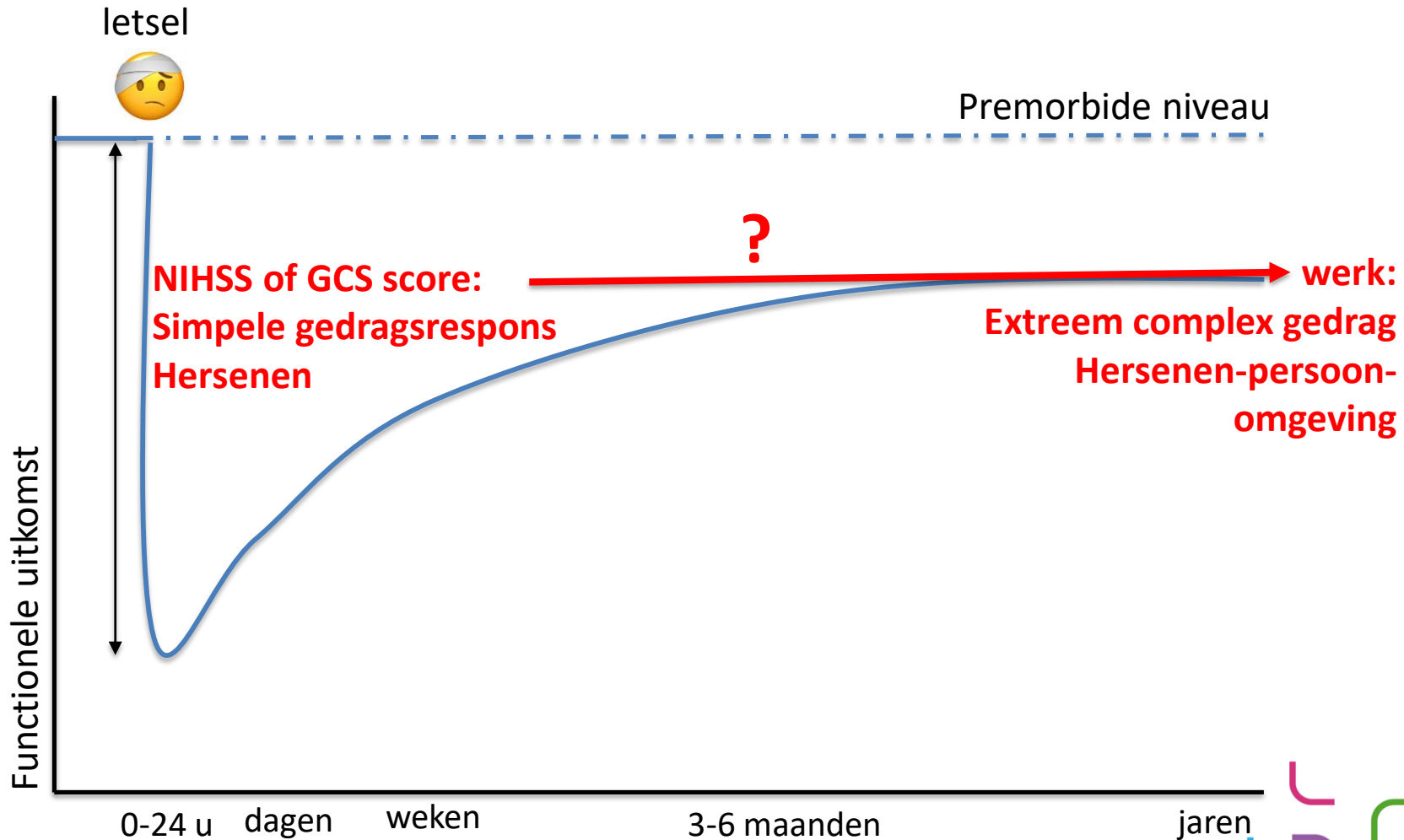
Muziekinstrument



Typische herstelcurve na acuut ontstaan hersenletsel



Voorspellen van uitkomst?



Terugkeer naar werk na traumatisch hersenletsel

Terugkeer naar eigen werk: 33%
Werk na 1 jaar: 35%
Werk na 5 jaar: 42%



Werk status bij ongeval

Beroep bij ongeval

GCS score

Opname duur

Beperkingen niveau

Betalende partij

Alcohol gebruik

Stemmings problemen

Cognitief functioneren

Persoonlijkheids kenmerken

Coping

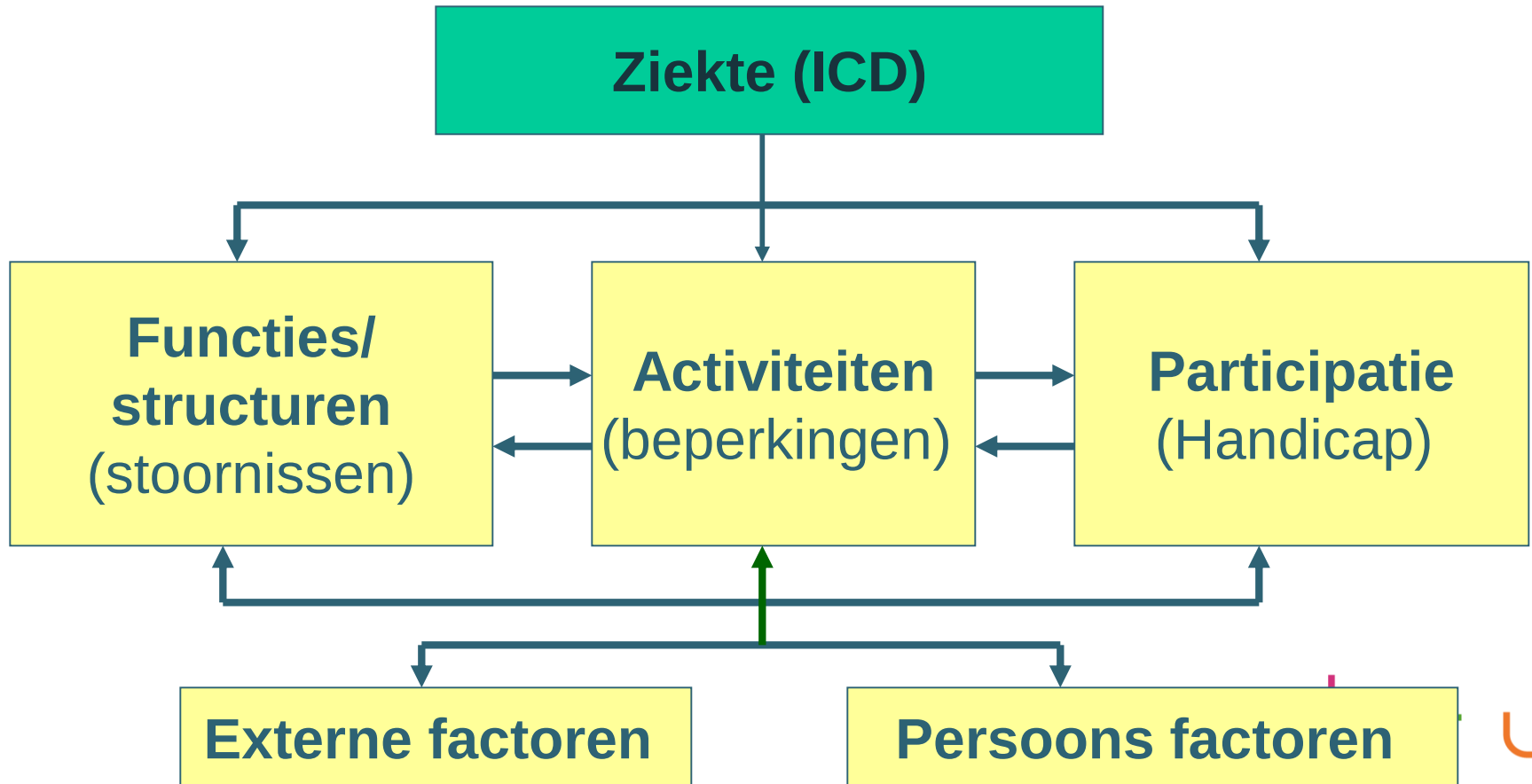
.....

Systematische reviews:
Gormley et al, 2019
Van Deynse et al, 2021
Manoli et al, 2021



Gevolgen van ziekte: Biopsychosociaal perspectief

Int. Class. of Functioning, WHO



Formule 1 racing



Auto/motor/banden



Rijgedrag



Competitie



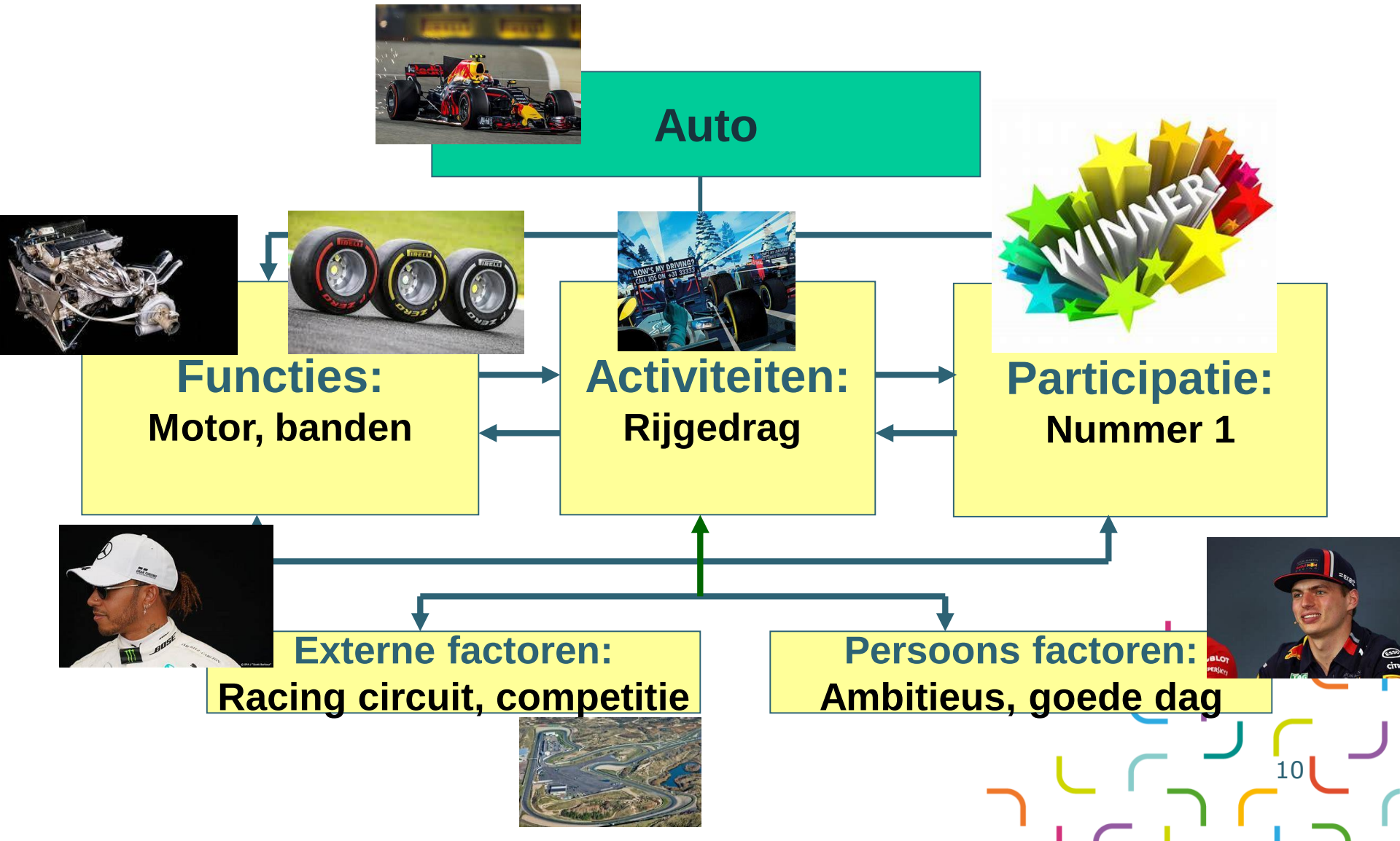
Racing circuit



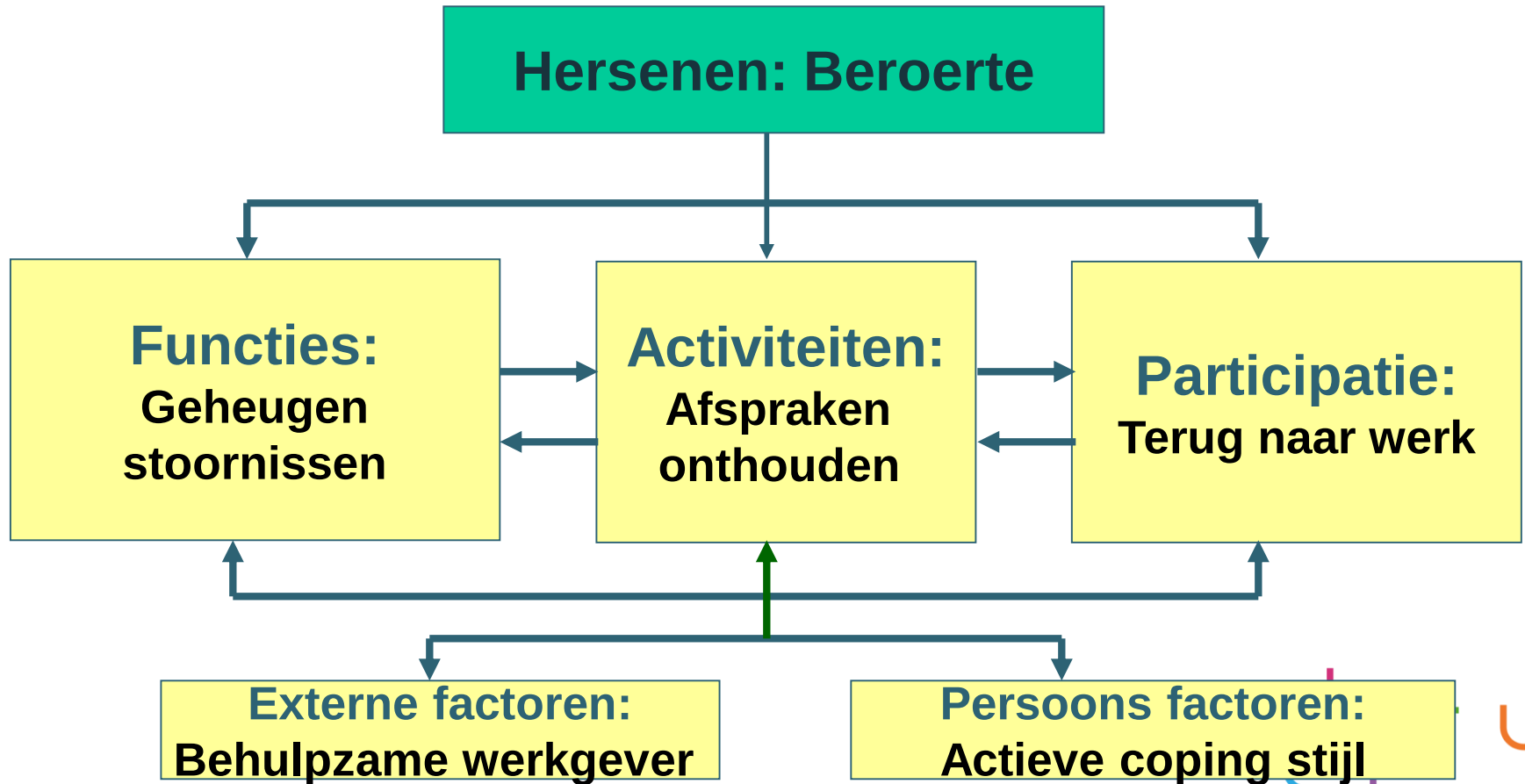
Coureur



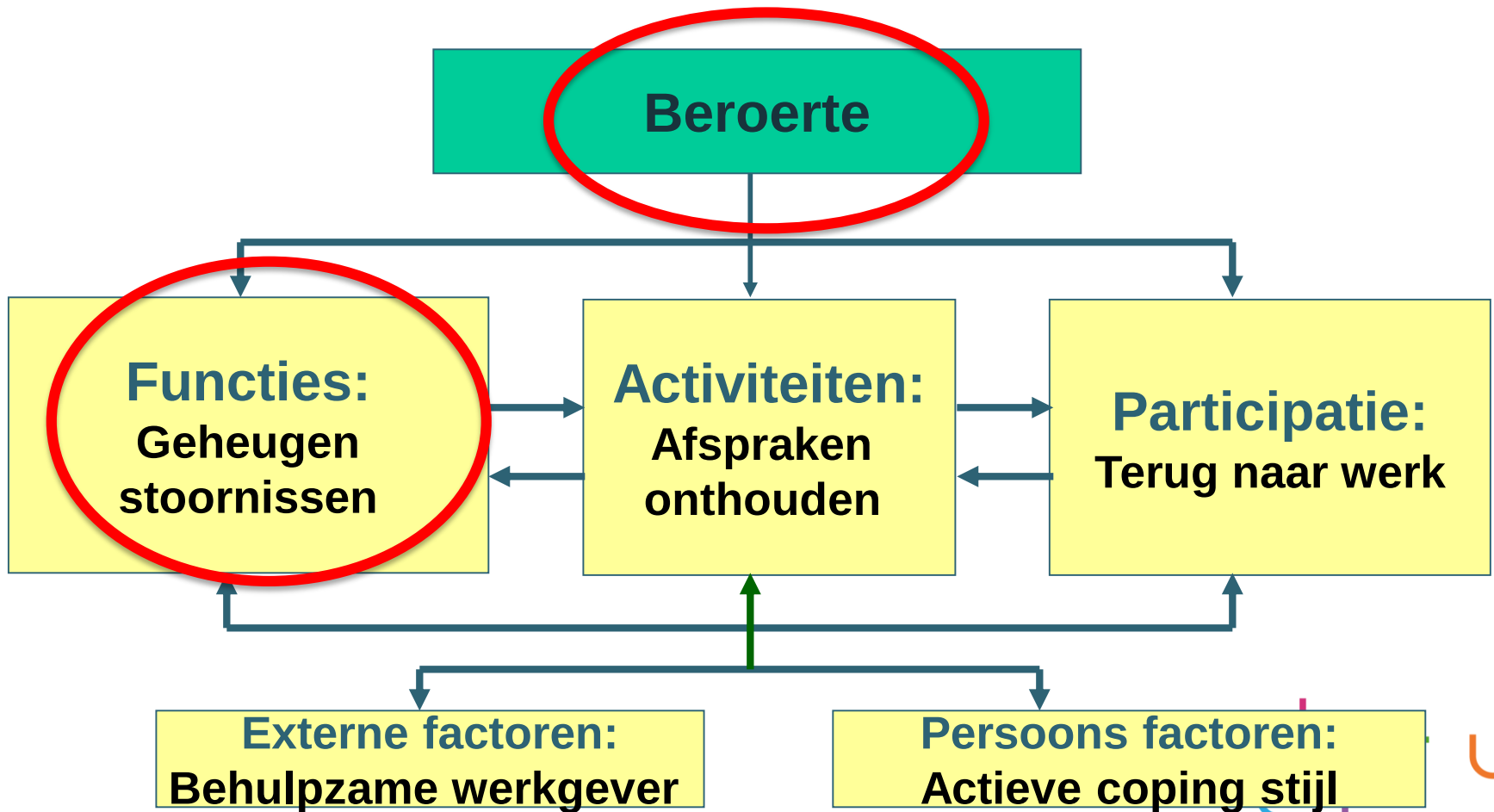
Formule 1 racing



Optimaliseren van hersenen en gedrag?

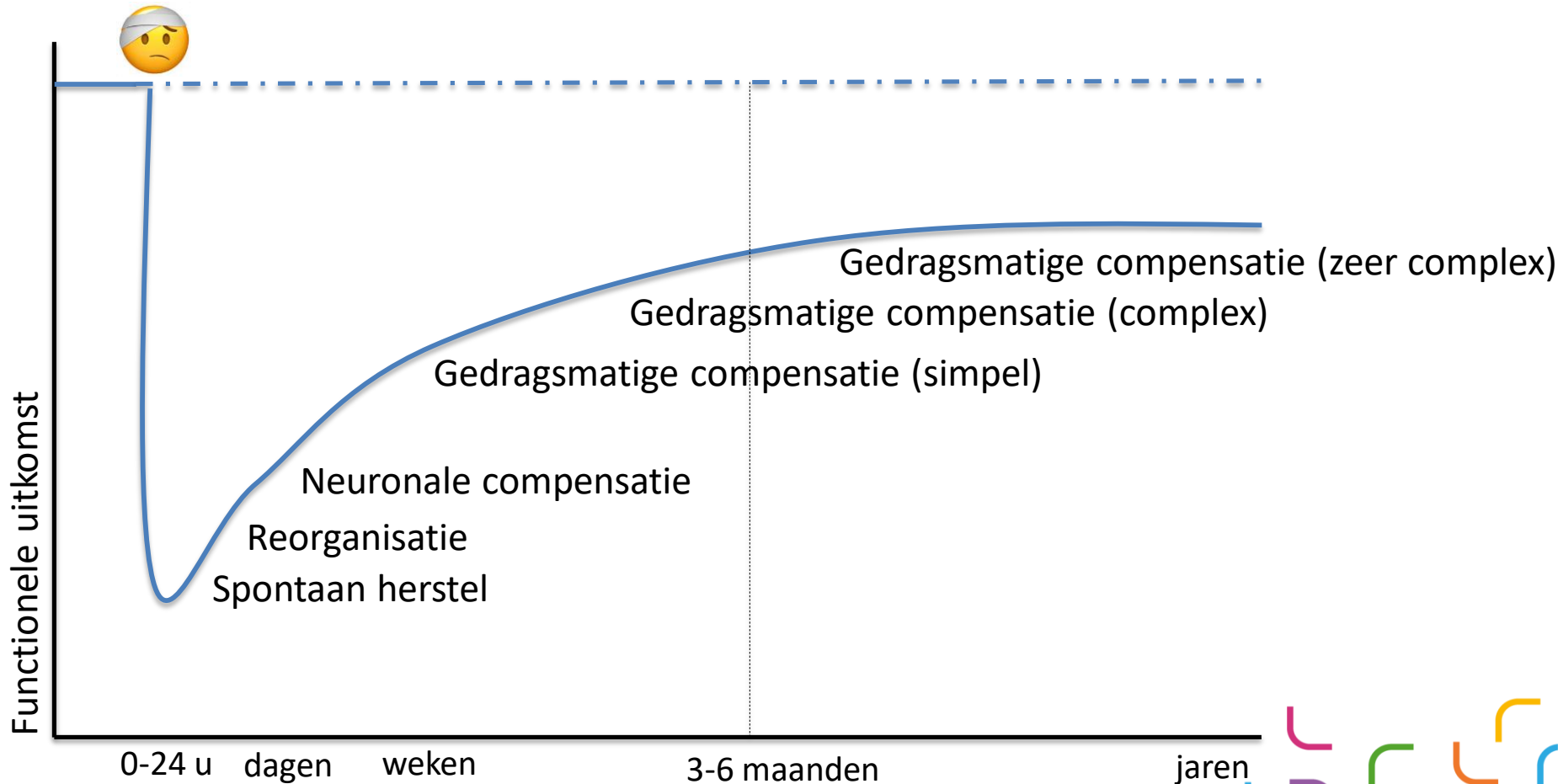


Medisch model



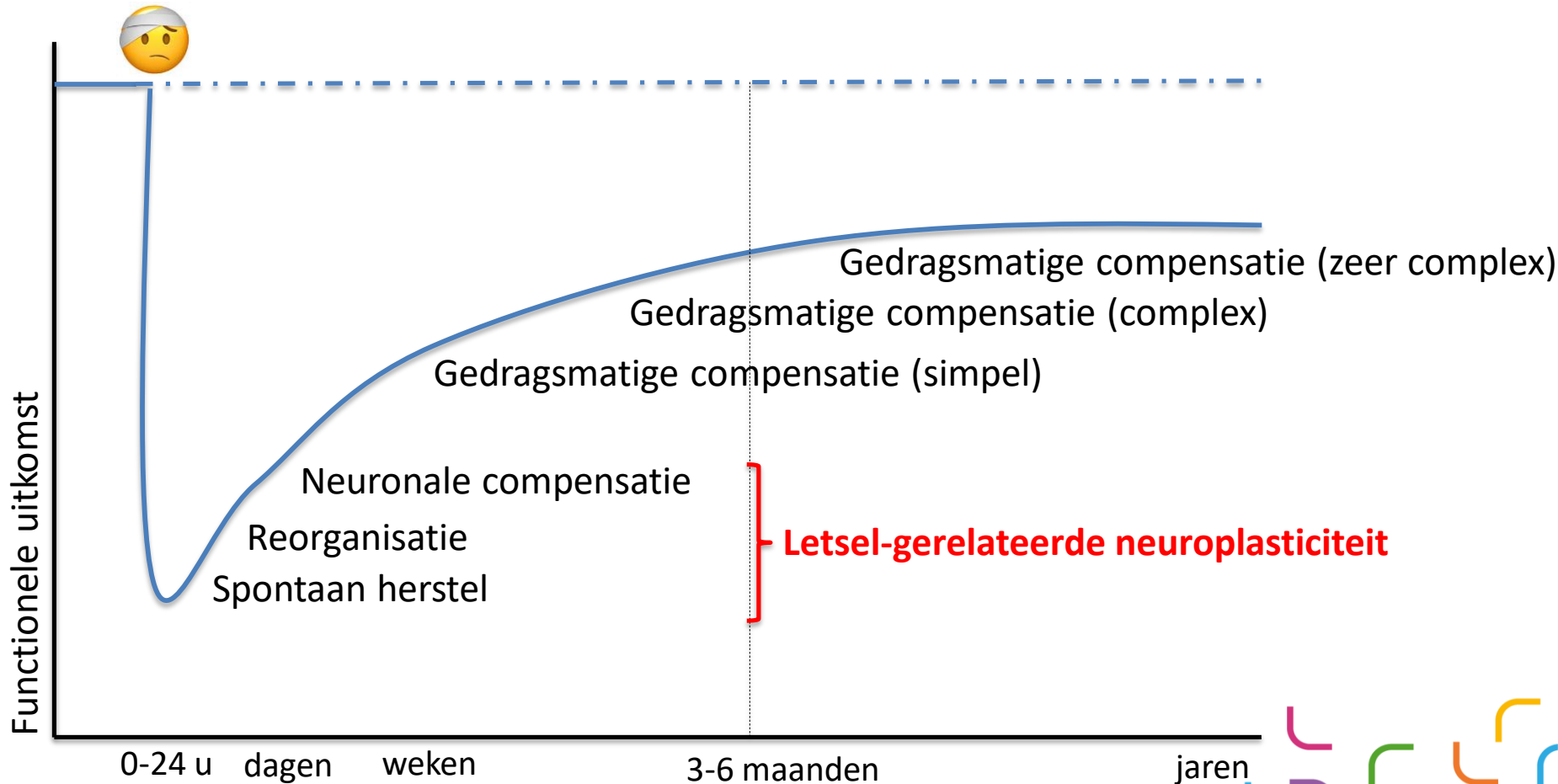
Neuroplasticiteit:

het vermogen van de hersenen om zich aan te passen qua structuur en functie en te veranderen gedurende ons leven en in reactie op ervaring of interactie met de omgeving



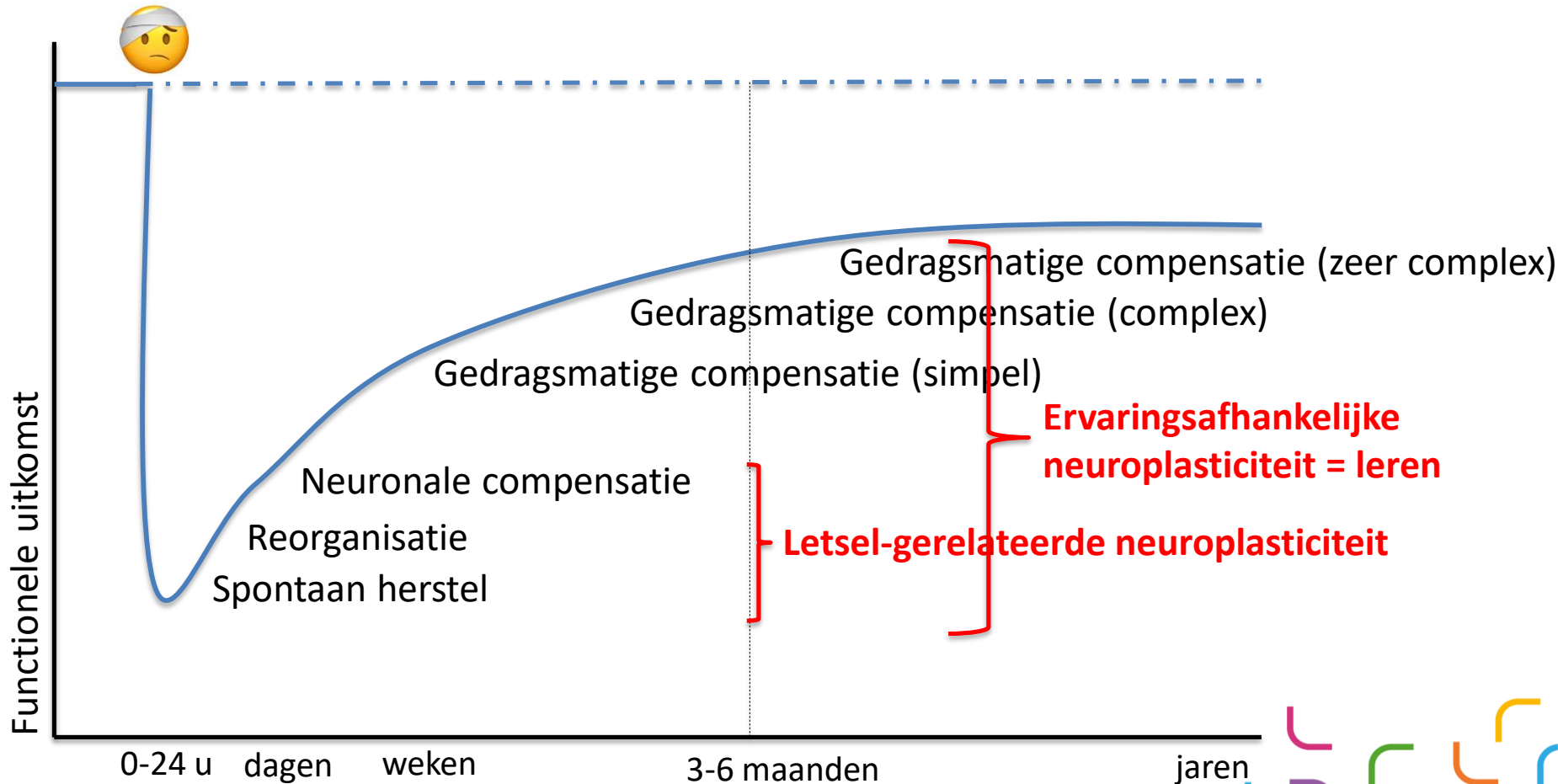
Neuroplasticiteit:

het vermogen van de hersenen om zich aan te passen qua structuur en functie en te veranderen gedurende ons leven en in reactie op ervaring of interactie met de omgeving



Neuroplasticiteit:

het vermogen van de hersenen om zich aan te passen qua structuur en functie en te veranderen gedurende ons leven en in reactie op ervaring of interactie met de omgeving



Herstel, reorganisatie, compensatie?



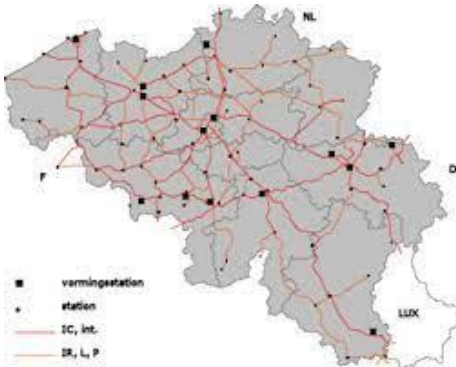
Er staat een koe op de rails!

Herstel = de koe wordt van de rails gehaald, er is geen beschadiging

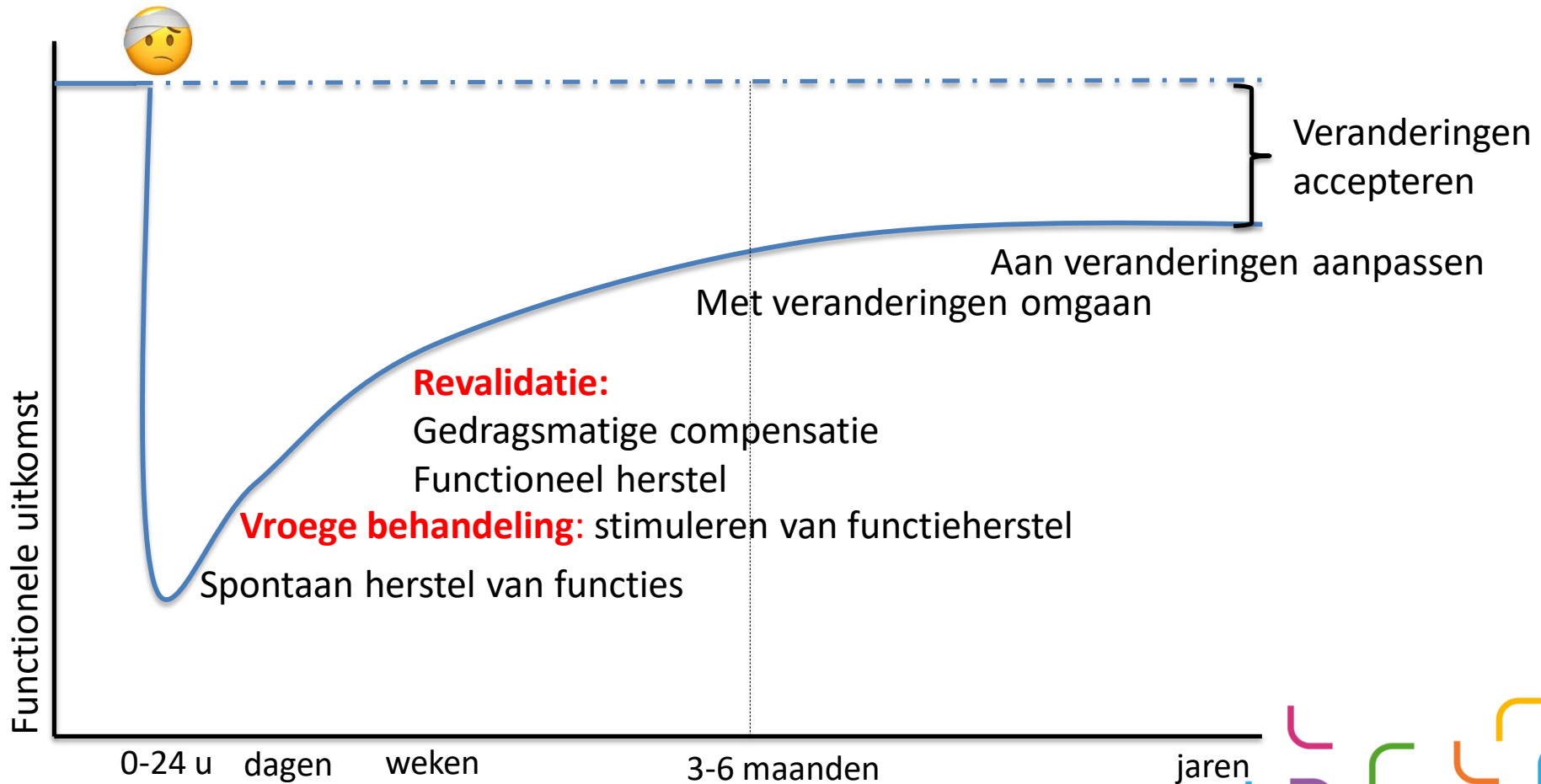
Reorganisatie = de trein rijdt over het naastliggende spoor

Functioneel herstel = de NMBS adviseert een andere route

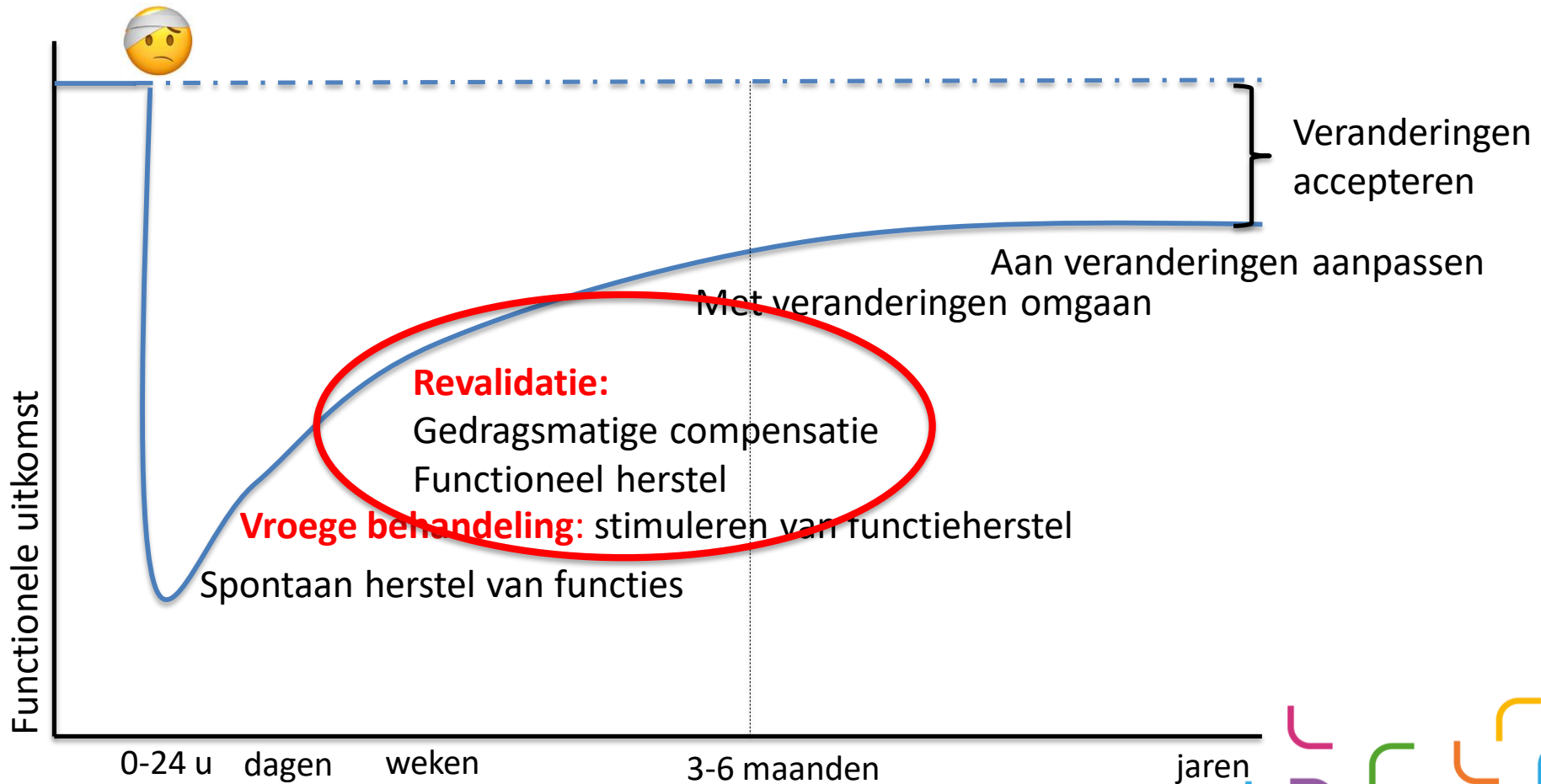
Compensatie = de NMBS regelt busvervoer



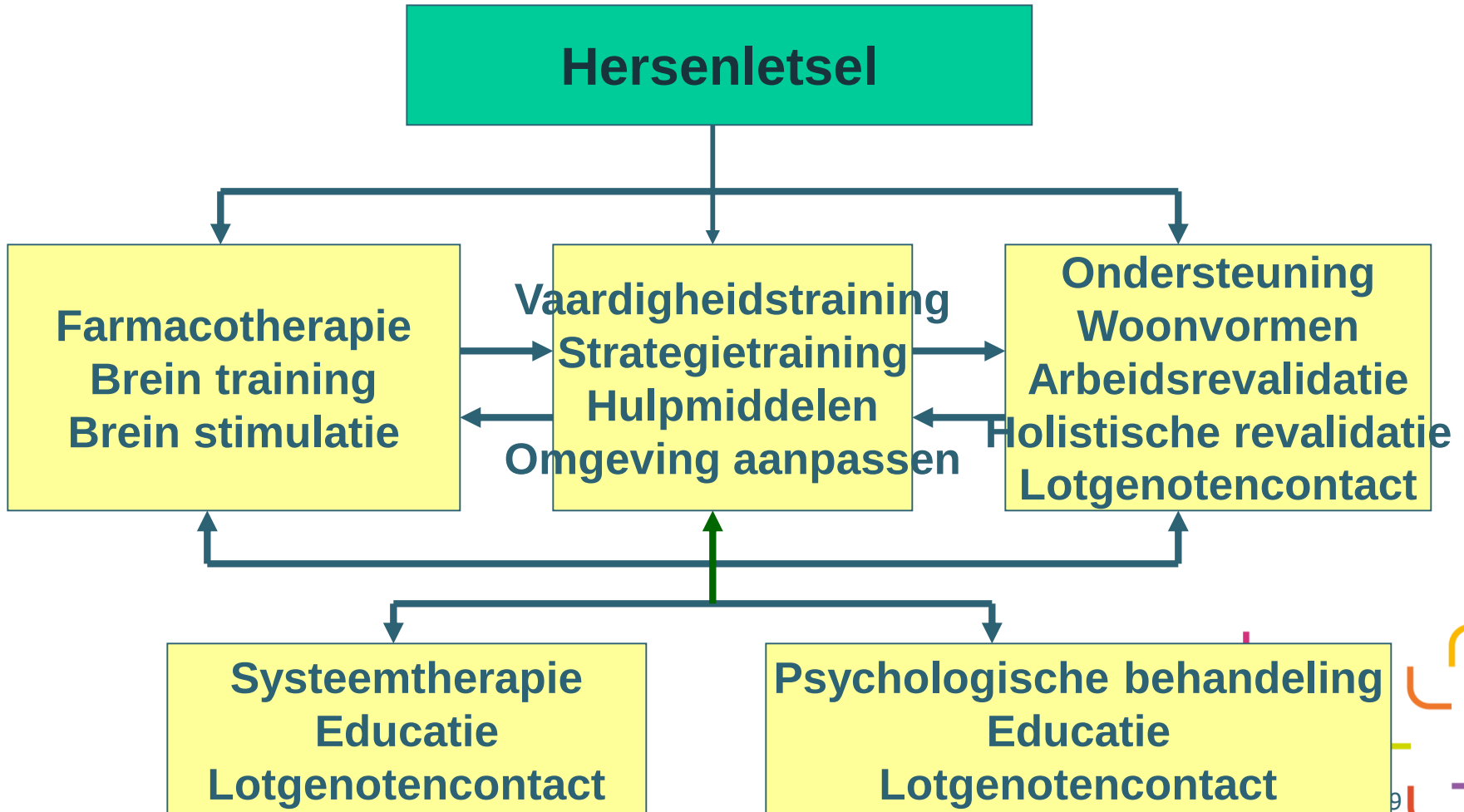
Herstel en behandeling



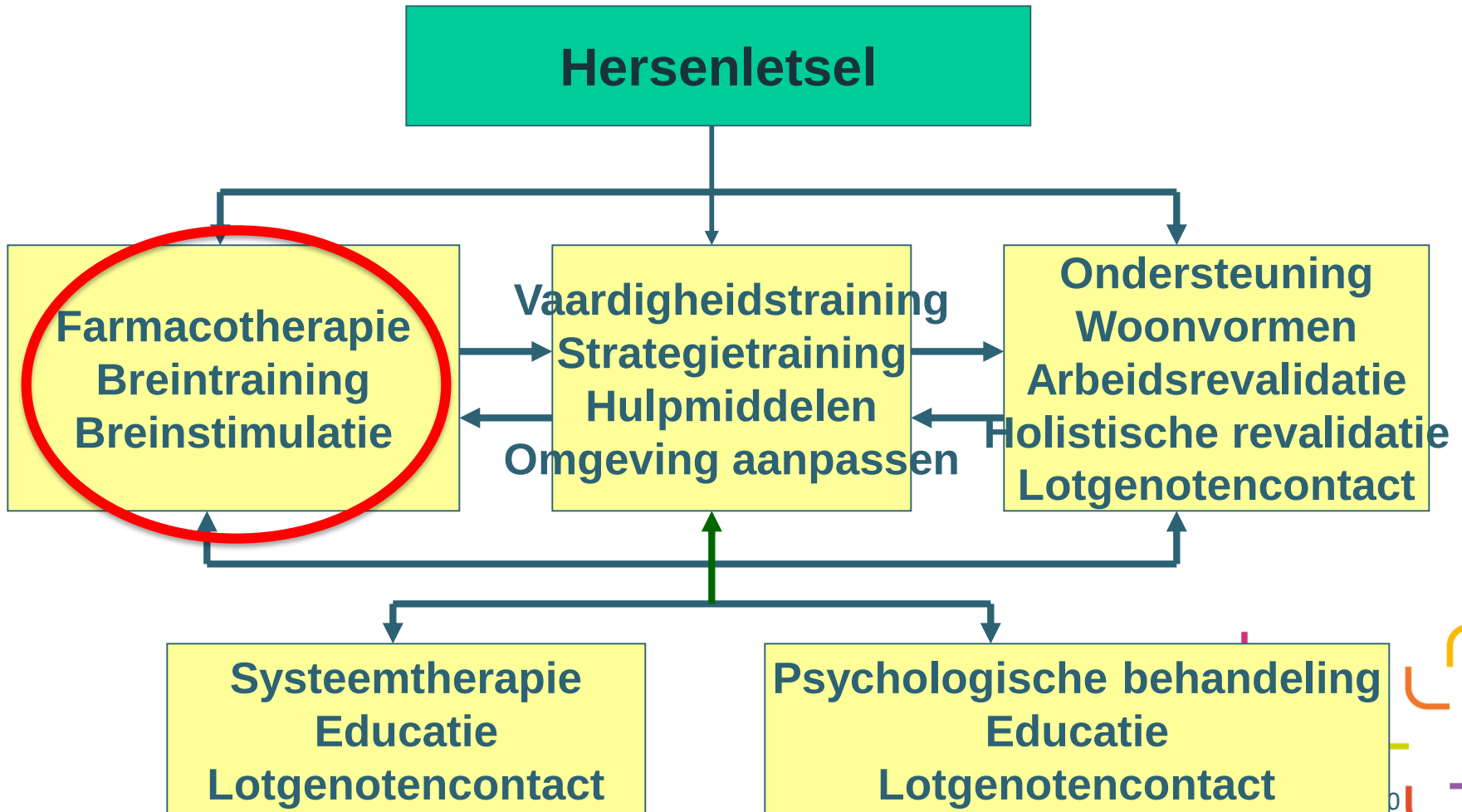
Cognitive revalidatie



Cognitieve revalidatie?

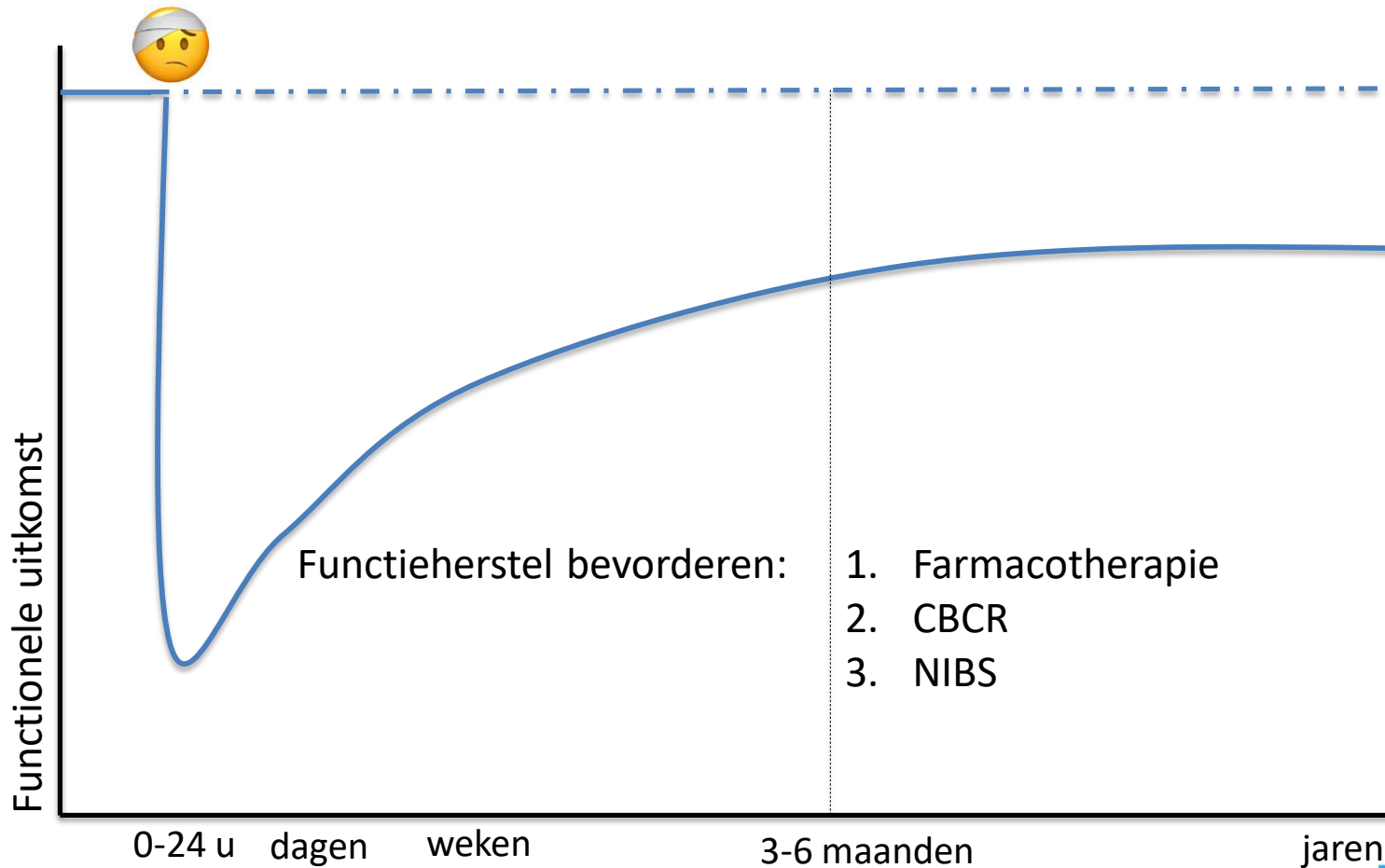


Cognitieve functies verbeteren?



Behandelmogelijkheden:

1. functieherstel bevorderen



1. Farmacotherapie: weinig evidentie



(Dougall et al, 2015)



ROSTMEMA
STROKE STUDY

With four studies, **there is insufficient evidence to determine whether pharmacological treatment is effective in chronic cognitive impairment in TBI.** Whilst there is a positive finding for rivastigmine on one primary measure, all other primary measures were not better than placebo. The positive findings for (–)-OSU6162 are interpreted cautiously as the study was small ($n = 6$). For modafinil and atomoxetine no positive effects were found. All four drugs appear to be relatively well tolerated, although evidence is sparse.

Research paper

Efficacy of methylphenidate in the rehabilitation of attention following traumatic brain injury: a randomised, crossover, double blind, placebo controlled inpatient trial

C Willmott,^{1,2} J Ponsford^{1,2,3}

¹ School of Psychology, Psychiatry and Psychological Medicine, Monash University, Australia; ² Monash-Epworth Rehabilitation Research Centre, Australia; ³ National Trauma Research Institute, Australia

Correspondence to: C Willmott, Psychology Department, School of Psychology, Psychiatry and Psychological Medicine, Monash University, Clayton VIC 3168

ABSTRACT

Objectives: Most previous studies evaluating the use of methylphenidate following traumatic brain injury (TBI) have been conducted many years post-injury. This study evaluated the efficacy of methylphenidate in facilitating cognitive function in the inpatient rehabilitation phase.

Methods: 40 participants with moderate-severe TBI (mean 68 days post-injury) were recruited into a randomised, crossover, double blind, placebo controlled trial. Methylphenidate was administered at a dose of 0.3 mg/kg twice daily and lactose in identical capsules

over attention has been mixed.³ Willmott and colleagues⁴ found evidence of slowed information processing, reduced working memory and more errorful performances on tasks with increasing requirements for strategic control over attention in TBI participants relative to controls.

The use of methylphenidate to enhance attention following TBI has been proposed as “rational pharmacotherapy”.⁵ Methylphenidate, a central nervous system stimulant, increases release and blocks reuptake of dopamine and

Methylphenidate
enhances information
processing speed
during rehabilitation
(68 days post injury)



2. Computer-based cognitive retraining (CBCR): what you train is what you gain dus vaardigheidstraining?

NEUROPSYCHOLOGICAL REHABILITATION, 2016
VOL. 26, NOS. 5–6, 639–644
<http://dx.doi.org/10.1080/09602011.2016.1186101>



BRAIN INJURY
2018, VOL. 32, NO. 6, 679–692
<https://doi.org/10.1080/02699052.2018.1458335>



EDITORIAL

OPEN ACCESS

Brain training: hype or hope?

Caroline M. van Heugten^{a,b}, Rudolf W. H. M. Ponds^{b,c,d} and

^aDepartment Neuropsychology and Psychopharmacology, Maastricht University, The Netherlands; ^bSchool for Mental Health and Neuroscience, Maastricht University, The Netherlands; ^cDepartment of Psychology, Maastricht University, The Netherlands; ^dAdelante Rehabilitation Center, Hoensbroek, The Netherlands; ^eDonders Institute for Brain, Cognition and Behaviour, Radboud University, The Netherlands; ^fDepartment of Medical Psychology & Radboudumc Alzheimer University Medical Center, Nijmegen, The Netherlands; ^gCentre of Excellence Alcohol-Related Cognitive Disorders, Vincent van Gogh Institute for Psychiatry, The Netherlands

Searching for effective components of cognitive rehabilitation for children and adolescents with acquired brain injury: A systematic review

Christine Resch^{a,b}, Stefanie Rosema^{c,d,e}, Petra Hurks^{f,g}, Arend de Kloet^{c,f}, and Caroline van Heugten^{a,b,g}

^aDepartment of Neuropsychology and Psychopharmacology, Faculty of Psychology and Neuroscience, Maastricht University, Maastricht, The Netherlands; ^bLimburg Brain Injury Center, Maastricht, The Netherlands; ^cSophia Rehabilitation, The Hague, The Netherlands; ^dDepartment of Complex Behavioral Disorders and Forensic Psychiatry, De Bascule, Academic Center for Child- and Adolescent Psychiatry, Amsterdam, The Netherlands; ^eDepartment of Child- and Adolescent Psychiatry, VU University Medical Center, Amsterdam, The Netherlands; ^fThe Hague University of Applied Sciences, the Hague, The Netherlands; ^gSchool for Mental Health and Neuroscience, Faculty of Health, Medicine and Life Sciences, Maastricht University Medical Center, Maastricht, The Netherlands

ABSTRACT

Brain training is topical yet controversial. Effects are often limited to near and far effects to untrained tasks or everyday life measures lacking altogether. More recent approaches use evidence neuroscience on neuroplasticity, resulting in novel cognitive special issue encompasses the state of the art of these in systematic reviews and nine experimental studies in a variety of healthy participants are included, the results of which most findings: effects on trained tasks are consistently reported, but terms of functional outcome is limited and little evidence is for effects. In general, the studies show promising, yet challenging cognition in healthy persons and patients with cognitive deficits. be seen as positive “proof of principle” studies, highlighting that cognitive enhancement is possible. The field of brain training, however, is in urgent need of larger and more thoroughly designed studies. These future studies should also include outcome measures on daily functioning, self-efficacy and quality of life in addition to neuropsychological tests or tasks related to cognitive functioning.

ABSTRACT

Aim. Cognitive rehabilitation is of interest after paediatric acquired brain injury (ABI). The present systematic review examined studies investigating cognitive rehabilitation interventions for children with ABI, while focusing on identifying effective components. Components were categorized as (1) metacognition and/or strategy use, (2) (computerized) drill-based exercises, and (3) external aids. **Methods.** The databases PubMed (including MEDLINE), PsycInfo, and CINAHL were searched until 22nd June 2017. Additionally, studies were identified through cross-referencing and by consulting experts in the field. **Results.** A total of 20 articles describing 19 studies were included. Metacognition/strategy use trainings (five studies) mainly improved psychosocial functioning. Drill-based interventions (six studies) improved performance on tasks similar to training tasks. Interventions combining these two components (six studies) benefited cognitive and psychosocial functioning. External aids (two studies) improved everyday memory. No studies combined external aids with drill-based interventions or all three components. **Conclusion.** Available evidence suggests that multi-component rehabilitation, e.g. combining metacognition/strategy use and drill-based training is most promising, as it can lead to improvements in both cognitive and psychosocial functioning of children with ABI. Intervention setting and duration may play a role. Conclusions remain tentative due to small sample sizes of included studies heterogeneity regarding outcome measures, intervention and therapist variables, and patient characteristics.

ARTICLE HISTORY

Received 22 June 2017
Revised 22 January 2018
Accepted 10 February 2018

KEYWORDS

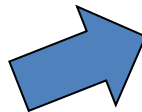
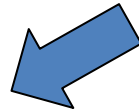
Interventions; cognition;
cognitive rehabilitation;
brain injury; paediatric

Wat leren we?

Taakspecifiek!

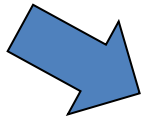


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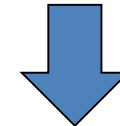


الحرية

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APR	HAAN	DRAAK	SLANG
猴	鸡	龙	蛇
HOND	ZWIJN	PAARD	SCHAAP
狗	猪	马	羊
RAT	OS	TIGER	HAAS
鼠	牛	虎	兔



?



3. Non-invasive brain stimulation (NIBS) aanvullend op revalidatie?



diagnostics



Review

The Effect of Non-Invasive Brain Stimulation (NIBS) on Executive Functioning, Attention and Memory in Rehabilitation Patients with Traumatic Brain Injury: A Systematic Review

Takatoshi Hara ^{1,2,3}, Aturan Shanmugalingam ^{2,4}, Amanda McIntyre ³ and Amer M. Burhan ^{3,4,5,6,*}



Systematic Review

Intervention Effect of Non-Invasive Brain Stimulation on Cognitive Functions among People with Traumatic Brain Injury: A Systematic Review and Meta-Analysis

Daniel Kwasi Ahorsu ¹, Emma Sethina Adjattor ² and Bess Yin Hung Lam ^{3,*}

¹ Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong, China;

OXFORD
UNIVERSITY PRESS

Archives of Clinical Neuropsychology 00 (2021) 1–16

Archives
of
CLINICAL
NEUROPSYCHOLOGY

The Effectiveness of Non-Invasive Brain Stimulation Alone or Combined with Cognitive Training on the Cognitive Performance of Patients With Traumatic Brain Injury: A Systematic Review

Anastasia Nousia^{1,*}, Maria Martzoukou¹, Ioannis Liampas^{2,3}, Vasileios Siokas^{2,3}, Christos Bakirtzis⁴, Grigorios Nasios¹, Efthimios Dardiotis^{2,3}

¹Department of Speech and Language Therapy, University of Ioannina, Ioannina, Greece

²Department of Neurology, University Hospital of Larissa, Greece

³Faculty of Medicine, School of Health Sciences, University of Thessaly, Larissa, Greece

⁴B' Department of Neurology, AHEPA University Hospital, Aristotle University of Thessaloniki, Thessaloniki, Greece

*Corresponding author at: Speech Language Therapist, 4th Km of Ioannina- Athens Road University of Ioannina, Department of Speech and Language Therapy, P.C. GR455 00, Ioannina, Greece; Tel: +306939073033; E-mail address: sialogo@gmail.com

Accepted 2 June 2021

Abstract

Objective: The present study reviewed published evidence on the effectiveness of non-invasive brain stimulation (NIBS) on the cognitive performance of patients with Traumatic brain injury (TBI).

TMS, tDCS, tACS

Kleine samples

Lage kwaliteit studies

Gemengde resultaten

Matig effectief

Lange termijn effecten?

Effecten in dagelijks leven?

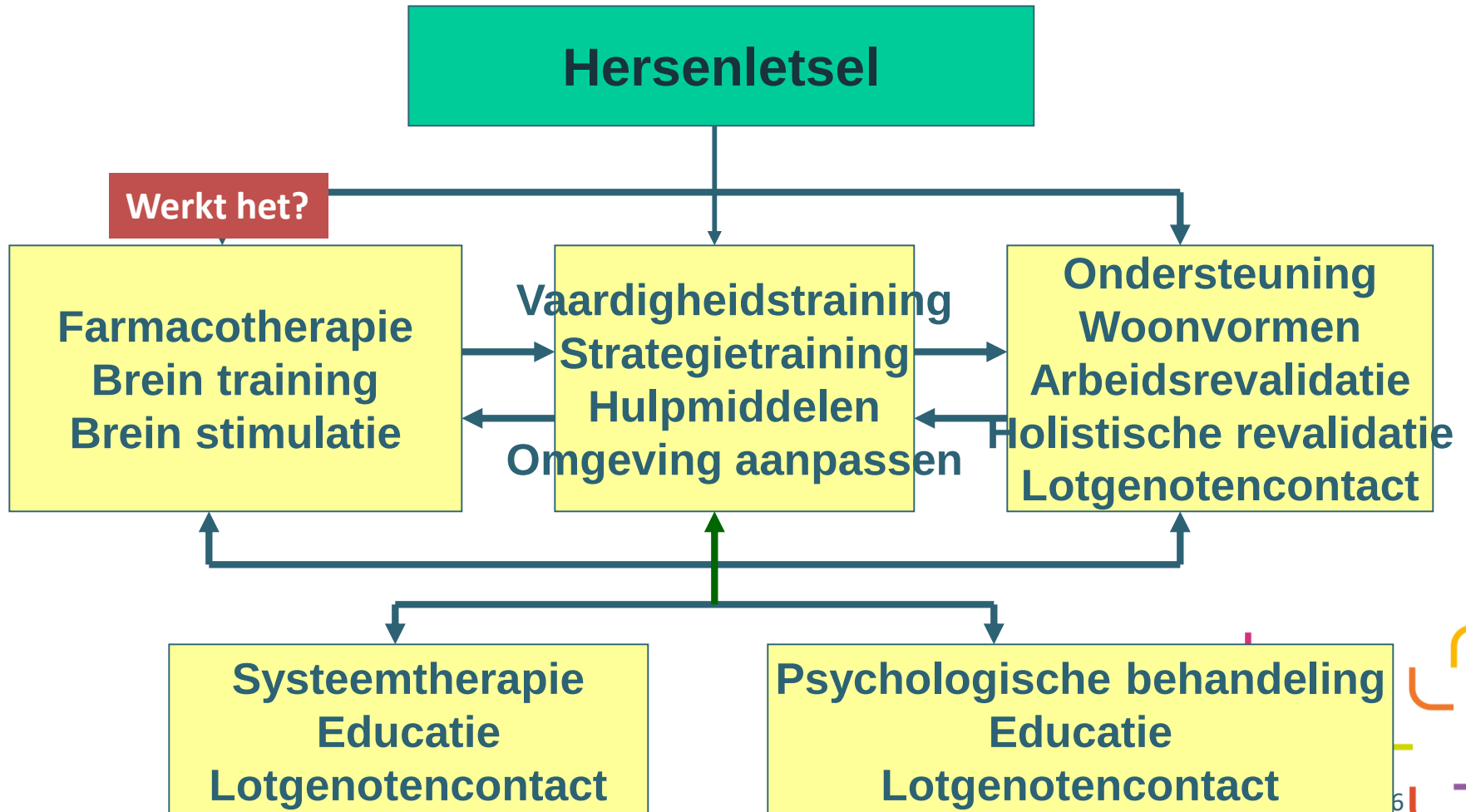
Combinatie met cognitieve training

Adjuvant aan revalidatie

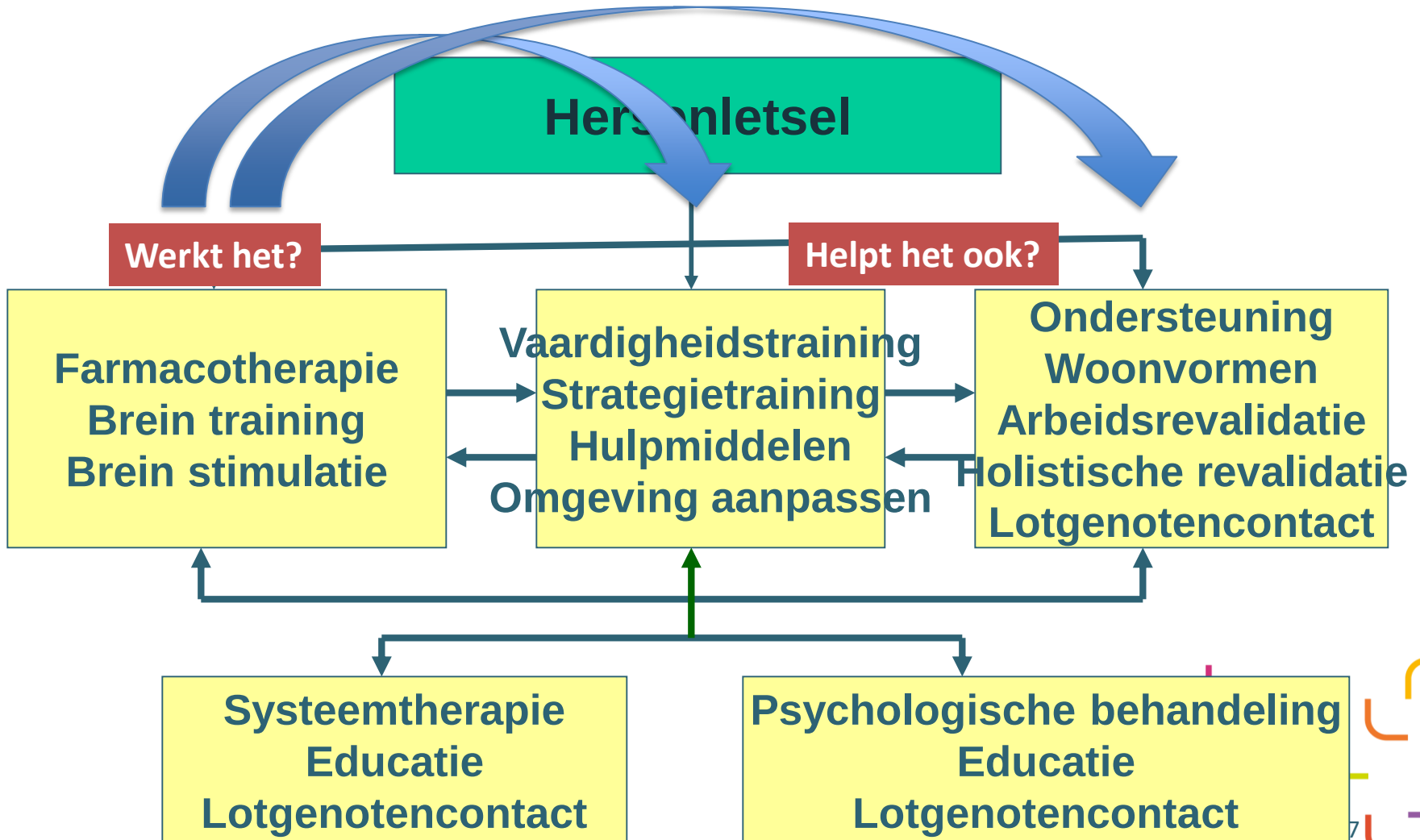
Verhogen van de gevoeligheid van de hersenen om te kunnen leren?



Cognitieve neurowetenschappen: Patiënt van morgen



Cognitieve revalidatie: Patiënt van vandaag



Wat is cognitieve revalidatie? (Wilson, 1997)

The term “cognitive rehabilitation” can apply to any intervention strategy or technique which intends to enable clients or patients, and their families, to live with, manage, by-pass, reduce or come to terms with cognitive deficits precipitated by injury to the brain.

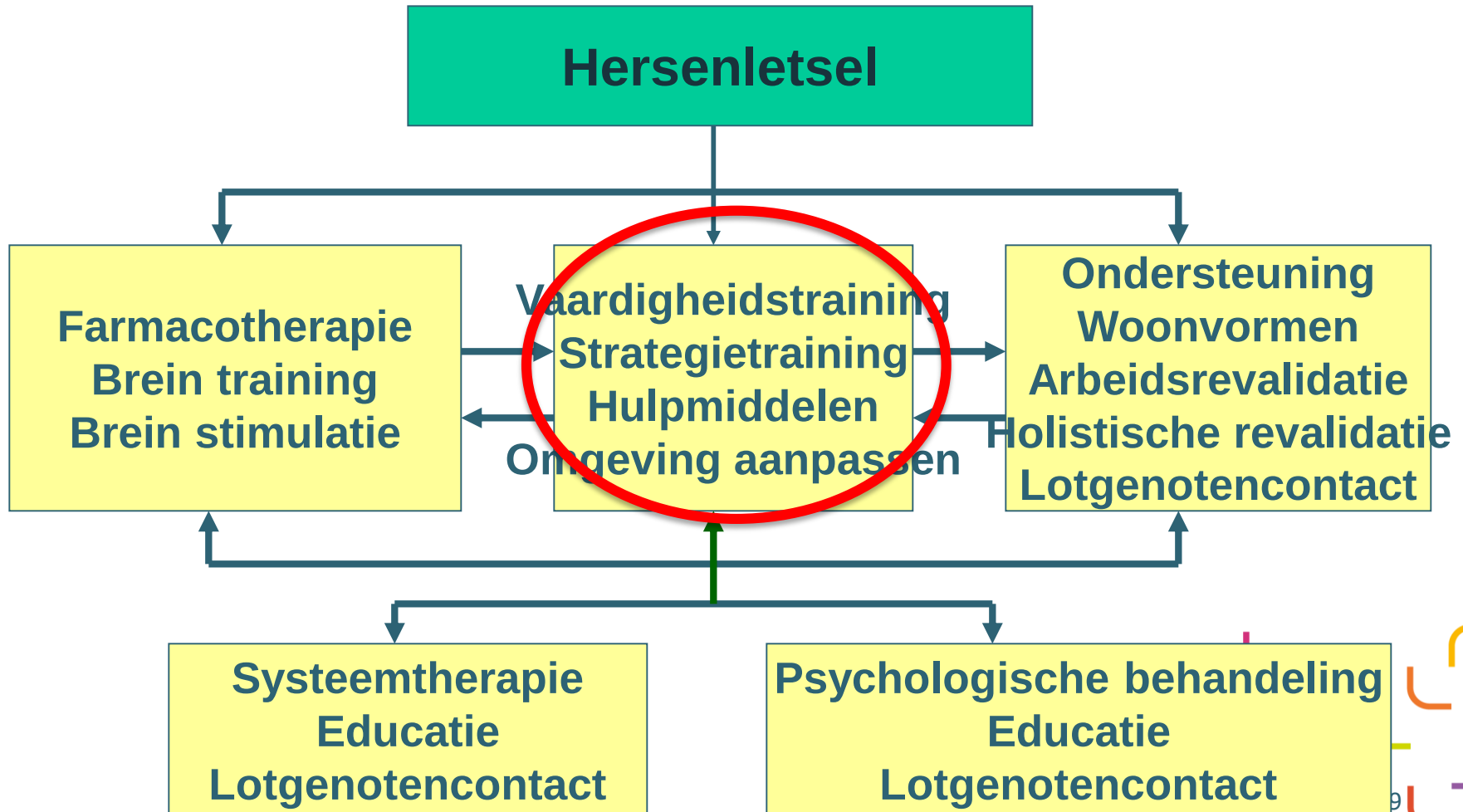


- * **Herlearn** van oude vaardigheden
- * **Leren** van nieuwe vaardigheden
- * **Leren** compenseren
- * **Leren** omgaan met veranderingen
- * **Leren** aanpassen aan veranderingen
- * **Leren** accepteren van een veranderd leven

= ervaringsafhankelijke veranderingen

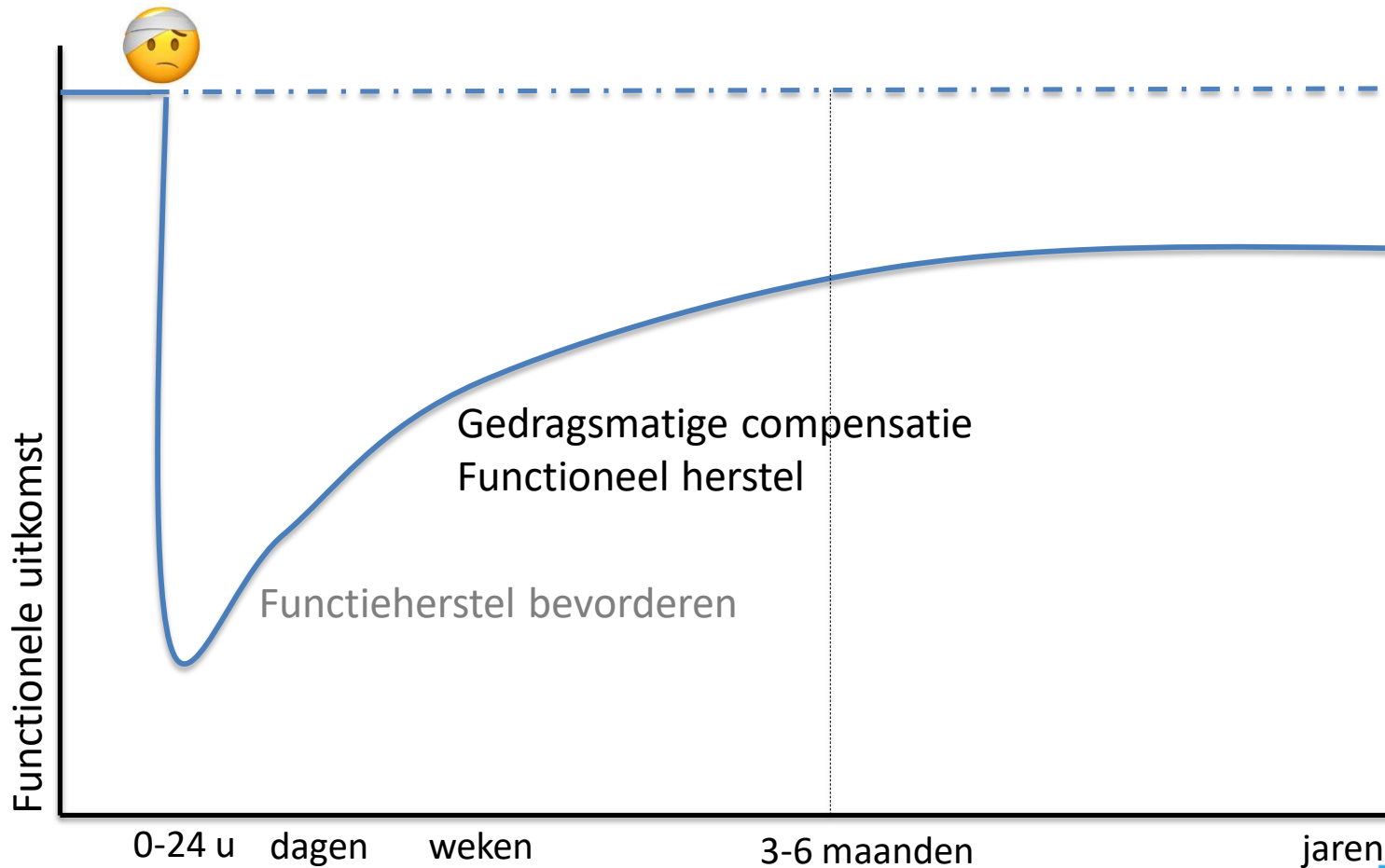


Cognitieve revalidatie: dagelijks functioneren verbeteren



Behandelmogelijkheden:

2. (cognitieve) revalidatie



Cognitieve revalidatie (Cicerone et al, 2019)

491 studies tot 2014

Bewijs voor effectiviteit:

Aandacht

Mentale snelheid

Geheugen

Visuospatieel neglect

Executieve functies

Taal

Sociale communicatie

Doel:

Verminderen van cognitieve
en functionele beperkingen

Compensatoire strategieën



Archives of Physical Medicine and Rehabilitation

journal homepage: www.archives-pmr.org

Archives of Physical Medicine and Rehabilitation 2019;100:1515-33



SYSTEMATIC REVIEW

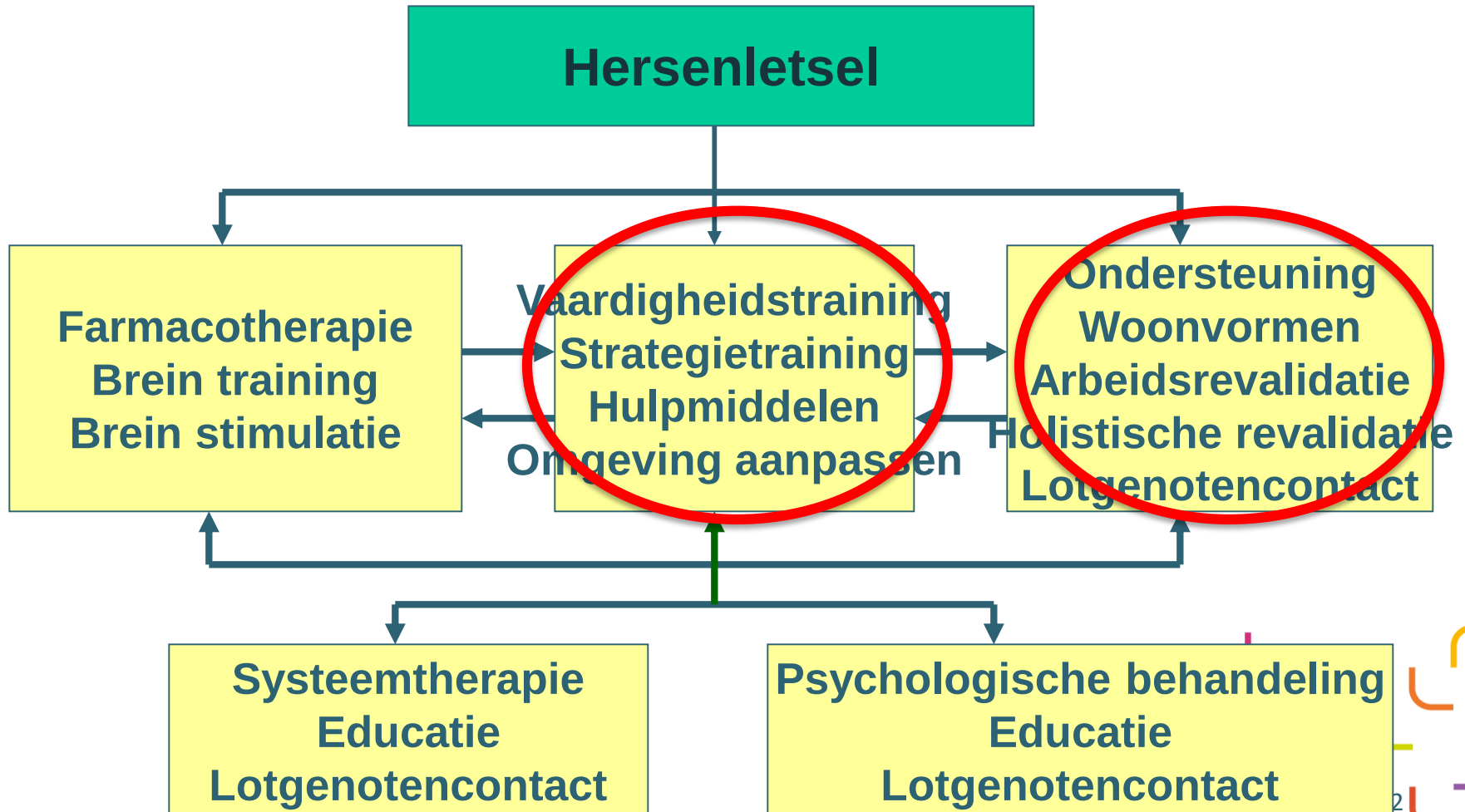
Evidence-Based Cognitive Rehabilitation: Systematic Review of the Literature From 2009 Through 2014



Keith D. Cicerone, PhD,^{a,b} Yelena Goldin, PhD,^{a,b} Keith Ganci, PhD,^c
Amy Rosenbaum, PhD,^d Jennifer V. Wethe, PhD,^e Donna M. Langenbahn, PhD,^{f,g}
James F. Malec, PhD,^{e,h} Thomas F. Bergquist, PhD,^e Kristine Kingsley, PsyD,^{f,g}
Drew Nagele, PsyD,^{i,j} Lance Trexler, PhD,^{h,k} Michael Fraas, PhD,^l
Yelena Bogdanova, PhD,^{m,n} J. Preston Harley, PhD^o

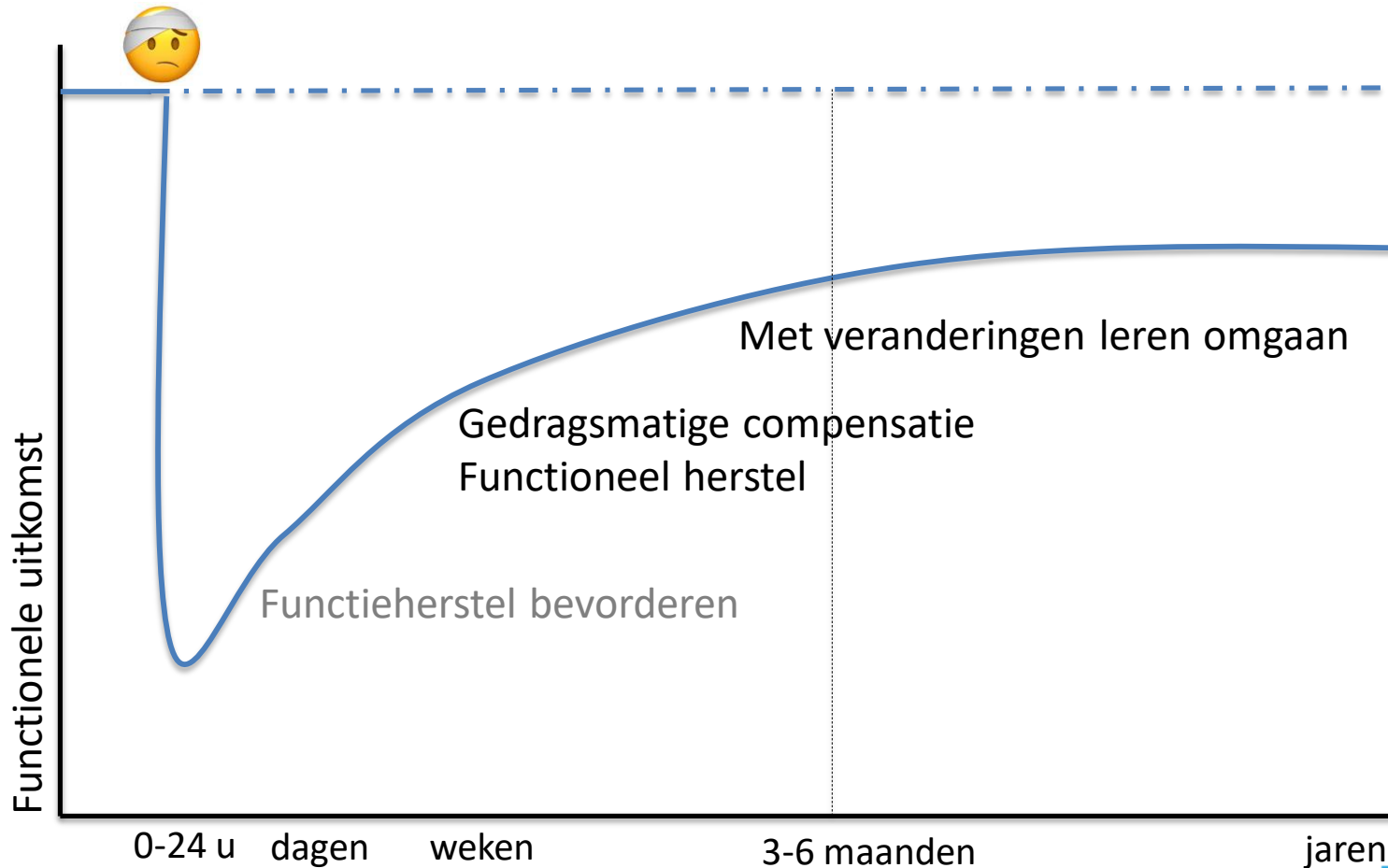
From the ^aCognitive Rehabilitation Department, John F. Kennedy Johnson Rehabilitation Institute, Hackensack Meridian Health System, Edison, New Jersey; ^bDepartment of Physical Medicine and Rehabilitation, Robert Wood Johnson Medical School, Rutgers University, New Brunswick, New Jersey; ^cCharlotte Center for Neuropsychological Services, Charlotte, North Carolina; ^dTraumatic Brain Injury Program, Park Terrace Care Center, Rego Park, New York; ^eDepartment of Psychiatry and Psychology, Mayo Clinic College of Medicine and Science, Rochester, Minnesota and Phoenix, Arizona; ^fRusk Rehabilitation New York University Langone Health, New York City, New York; ^gNew York University School of Medicine, New York City, New York; ^hDepartment of Physical Medicine and Rehabilitation, Indiana University School of Medicine, Indianapolis, Indiana; ⁱBeechwood NeuroRehab, Langhorne, Pennsylvania; ^jDepartment of Rehabilitation Neuropsychology, Rehabilitation Hospital of Indiana, Indianapolis, Indiana; ^kA. Philadelphia College of Osteopathic Medicine, Philadelphia, Pennsylvania; ^lDepartment of

Verbeteren van activiteiten en participatie



Behandel mogelijkheden:

3. cognitieve revalidatie + psychosociale interventies



Neuropsychologische interventies

NEUROPSYCHOLOGICAL REHABILITATION
2010, 20 (5), 760–777

Psychology Press
Taylor & Francis Group

Effectiveness of a low intensity outpatient cognitive rehabilitation programme for patients in the chronic phase after acquired brain injury

S. N. *Neuropsychological Rehabilitation*, 2013
Vol. 23, No. 2, 202–215, <http://dx.doi.org/10.1080/09602011.2012.734039>

Routledge
Taylor & Francis Group

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1
Effectiveness of a process-oriented patient-tailored outpatient neuropsychological rehabilitation programme for patients in the chronic phase after ABI

I. M. H. Brands^{1*}, S. F. M. Bouwens^{2,3*}, G. Wolters
Gregório², S. Z. Stapert⁴, and C. M. van Heugten^{2,4}

ORIGINAL ARTICLE

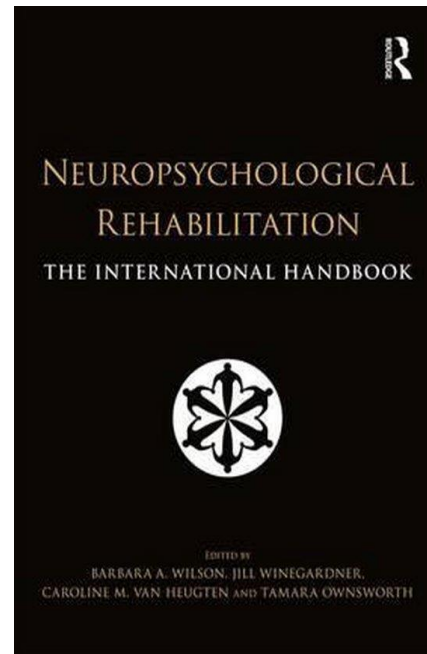
A Prospective Study to Evaluate a Residential Community Reintegration Program for Patients With Chronic Acquired Brain Injury

Gert J. Geurtsen, MSc, Caroline M. van Heugten, MSc, PhD, Juan D. Martina, MD,
Antonius C. Rietveld, MSc, PhD, Ron Meijer, MD, PhD, Alexander C. Geurts, MD, PhD

ABSTRACT. Geurtsen GJ, van Heugten CM, Martina JD, Rietveld AC, Meijer R, Geurts AC. A prospective study to evaluate a residential community reintegration program for patients with chronic acquired brain injury. *Arch Phys Med Rehabil* 2011;92:696-704.

Objective: To examine the effects of a residential community reintegration program on independent living, societal participation, emotional well-being, and quality of life in patients

F_{36,557} 134.9; $P=.000$). There was no spontaneous recovery during the waiting-list period. The effect sizes for the CIQ, Employability Rating Scale, work hours, and GAF were large (partial $\eta^2=0.25, 0.35, 0.22$, and 0.72 , respectively). The effect sizes were moderate for 7 of the 8 emotional well-being and quality of life (sub)scales (partial $\eta^2=0.11-0.20$). The WHO-QOL-BREF environment subscale showed a small effect size (partial $\eta^2=0.05$). Living independently rose from 25.4% be-

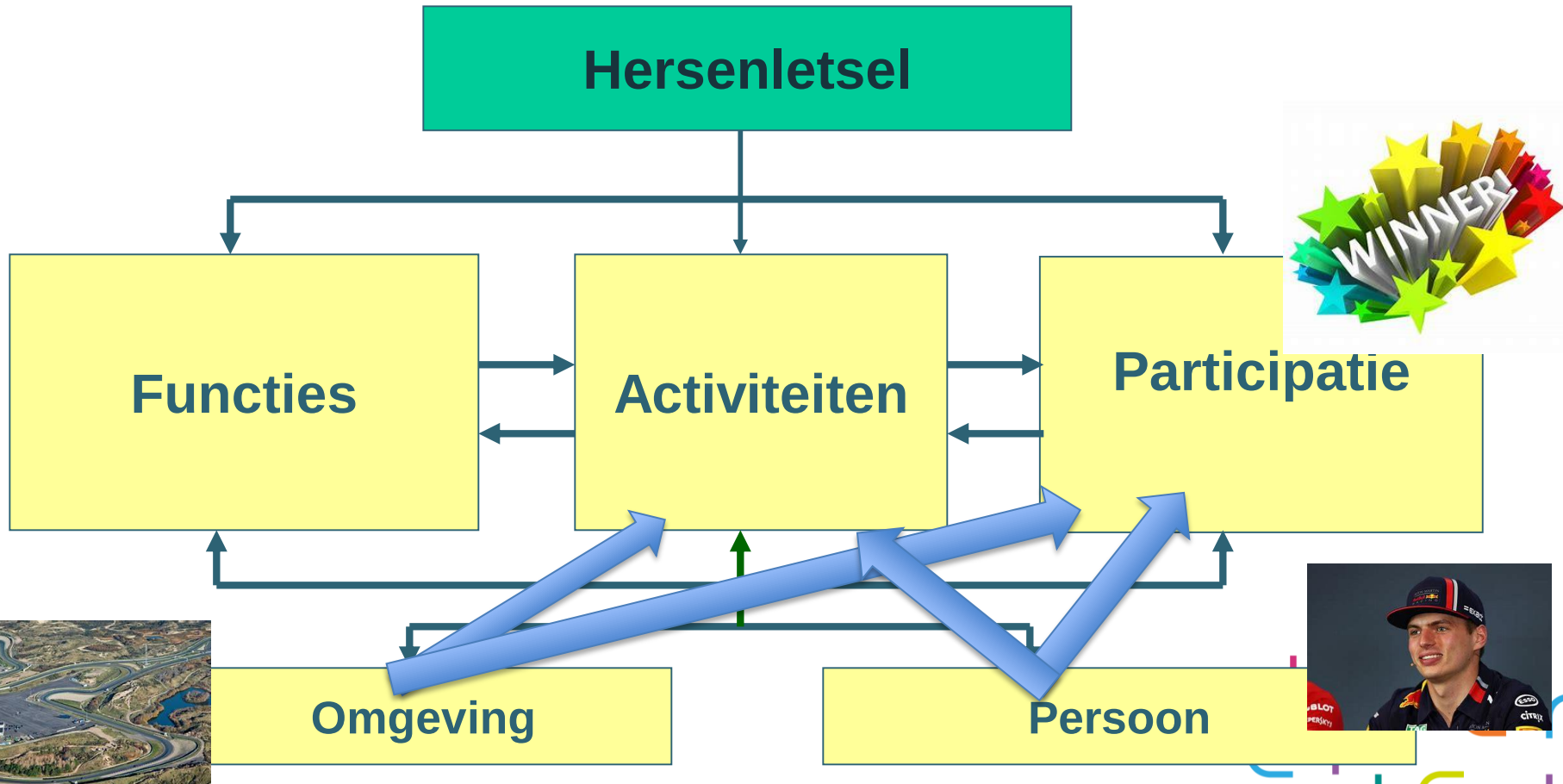


Cognitieve revalidatie in combinatie met:

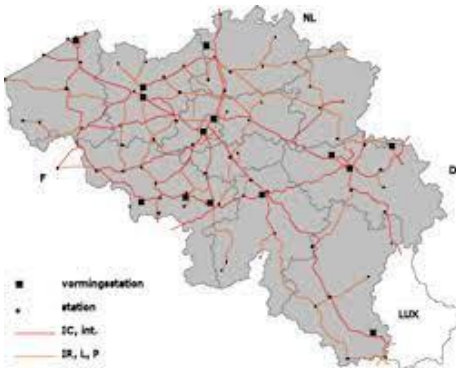
- Informatie
- Educatie
- Psychotherapie
- Family support
- Arbeidsrevalidatie
- Hulpmiddelen
- Zelfstandig leren wonen

Cognitief
Emotioneel
Gedrag
Sociaal
Familie/naasten

Welke factoren beïnvloeden het dagelijks leven en participatie?



Persoons en omgevingsfactoren?



Er staat een koe op de rails!

Herstel = de koe wordt van de rails gehaald, er is geen beschadiging

Reorganisatie = de trein rijdt over het naastliggende spoor

Functioneel herstel = de NMBS adviseert een andere route

Compensatie = de NMBS regelt busvervoer

Persoon = oplossingsgerichte coping, positieve houding, optimistisch, flexibel

Omgeving = goede communicatie, probleemeigenaar, gratis koffie of thee





nos.nl

Dumoulin stopt voor onbepaalde tijd met wielrennen: 'Mezelf beetje vergeten'

ZA 23 JANUARI, 13:30



Dumoulin stopt voorlopig met

“....de druk die erbij komt kijken, de verwachtingen van verschillende partijen. En ik wil het gewoon heel graag heel goed doen voor heel veel mensen. Ik wil graag dat de sponsors blij zijn, de ploeg blij is, mijn vrouw en mijn familie blij zijn.

Ik wil het voor iedereen goed doen maar ben dardoor de afgelopen jaren mezelf een beetje vergeten.”



Psychologische factoren voorspellen uitkomsten

Rehabil Med 2021; 53: jrm00205

ORIGINAL REPORT



Neuropsychological Rehabilitation, 2015
<http://dx.doi.org/10.1080/09602011.2015.1065280>

TEMPORAL EVOLUTION AND PREDICTORS OF SUBJECTIVE COGNITIVE COMPLAINTS UP TO 4 YEARS AFTER STROKE

Britta NIJSSE, MD, PhD¹, Daan P. J. VERBERNE, MSc, PhD^{2,3}, Johanna M. A. VISSER-MEILY, MD, PhD^{4,5}, Marcel POST, PhD^{5,6}, Paul L. M. DE KORT, MD, PhD¹ and Caroline M. VAN HEUGTEN, PhD^{2,3}

DISABILITY AND REHABILITATION, 2017
<http://dx.doi.org/10.1080/09638288.2017.1292320>



ORIGINAL ARTICLE



Trajectories of health-related quality of life after stroke: results from a one-year prospective cohort study

Maria van Mierlo^a, Caroline van Heugten^{b,c}, Marcel W. M. Post^{a,d}, Trynke Hoekstra^{e,f} and Anne Visser-Meily^a

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ABSTRACT

Purpose: To identify trajectories of physical and psychosocial health-related quality of life (HRQoL) from two months to one-year post stroke and to determine the factors that are associated with trajectory membership.

Method: Multicenter prospective cohort study in which 351 stroke patients were followed up at 2, 6, and 12 months post stroke. Latent class growth mixture modeling was used to determine trajectories of physical and psychosocial HRQoL. Multinomial regression analyses were performed to predict trajectory membership. Potential predictors were demographic, stroke-related, and psychological factors.

Results: Four trajectories were identified for both physical and psychosocial HRQoL: high, low, recovery, and decline. Comparing the low and recovery trajectories, the groups with low HRQoL were more likely to have higher scores for neuroticism. Comparison of the decline and high trajectories yielded the following predictors of physical HRQoL: discharged to a rehabilitation setting, less acceptance and more neuroticism, pessimism, helplessness, and passive coping. Predictors of psychosocial HRQoL were: discharged to a rehabilitation setting, less self-efficacy, and proactive coping, and more helplessness and passive coping.

Conclusions: The present study identified four distinct trajectories of physical and psychosocial HRQoL. The findings indicate that psychological factors are the most important factors in identifying stroke patients at risk of unfavorable HRQoL trajectories. Using these factors will help to identify vulnerable patients and guide rehabilitation in the early stages post stroke.

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Health-related quality of life; longitudinal studies; rehabilitation; stroke

Psychological factors are associated with subjective cognitive complaints 2 months post-stroke

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The aim of this study was to investigate which psychological factors are associated with subjective cognitive complaints 2 months post-stroke, taking into account the influence of demographic and stroke-related characteristics, cognitive and emotional problems. In this cross-sectional study, 350 patients were assessed at 2 months post-stroke, using the Checklist for Cognitive and Emotional Sequences following stroke (CLCE-24) to identify cognitive and emotional problems. Psychological factors were: proactive coping, passive coping, optimism, pessimism, extraversion, and neuroticism. Associations between CLCE-24 cognition score and psychological factors, emotional

Persoons en omgevingfactoren

Geen invloed als behandelaar

- Persoon:
 - leeftijd
 - opleiding
 - cognitieve reserve
 - zelf inzicht
- Extern:
 - locatie
 - wetten/verzekeringen/
sociaal systeem

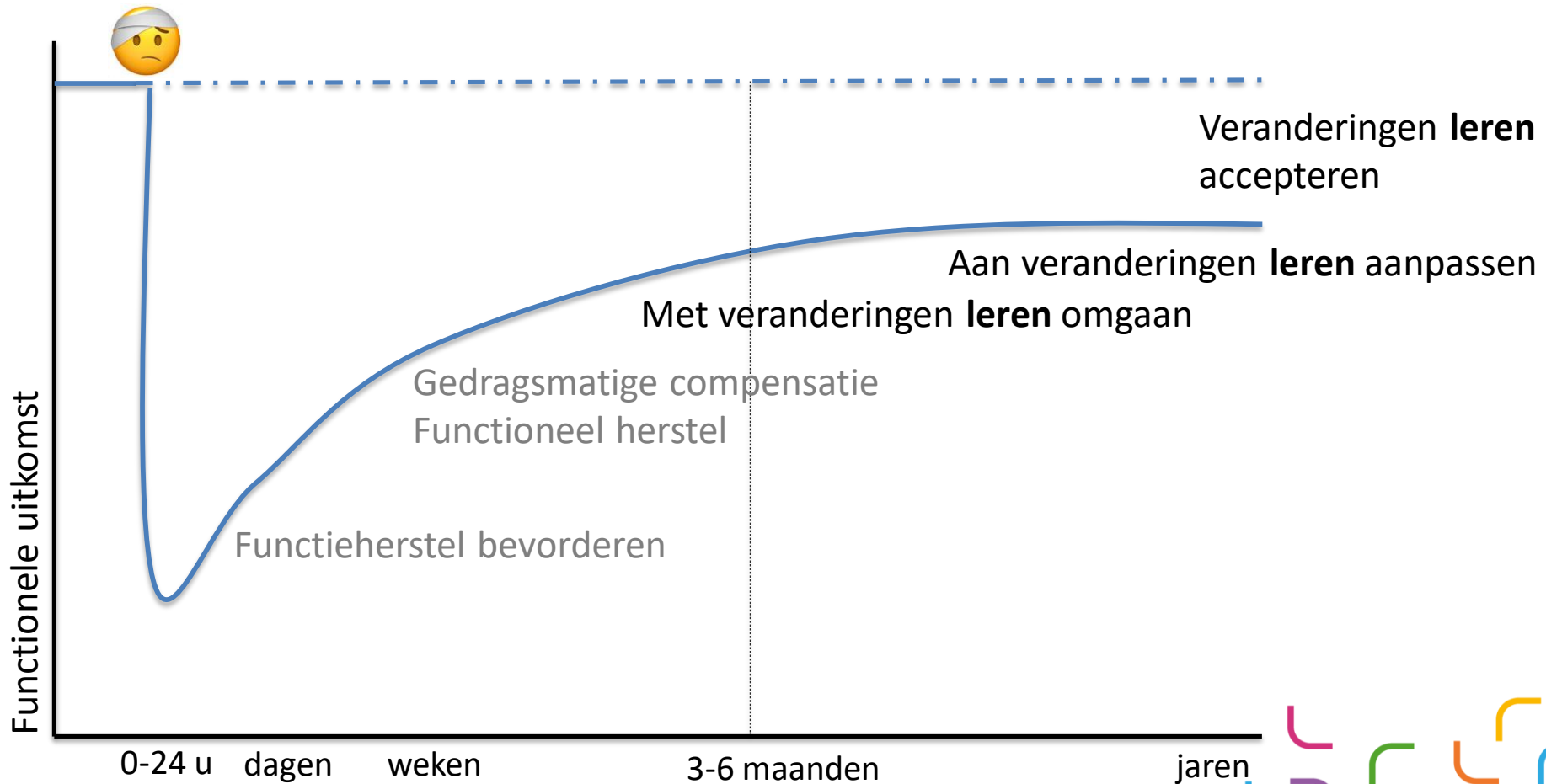
Mogelijke invloed dus hulp

- Persoon:
 - stemming
 - stress
 - coping stijl
 - psychologische flexibiliteit
 - veerkracht
- Extern:
 - draagkracht/last familie
 - sociale steun
 - publieksinformatie

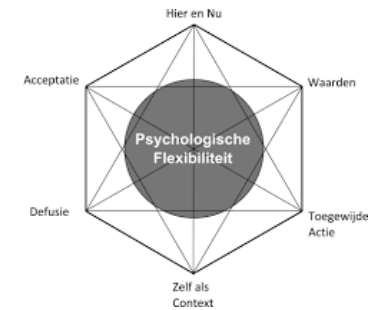
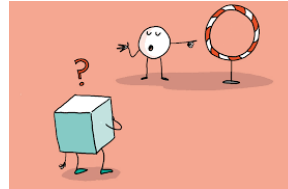


Behandelmogelijkheden:

4. psychosociale interventies, begeleiding en ondersteuning

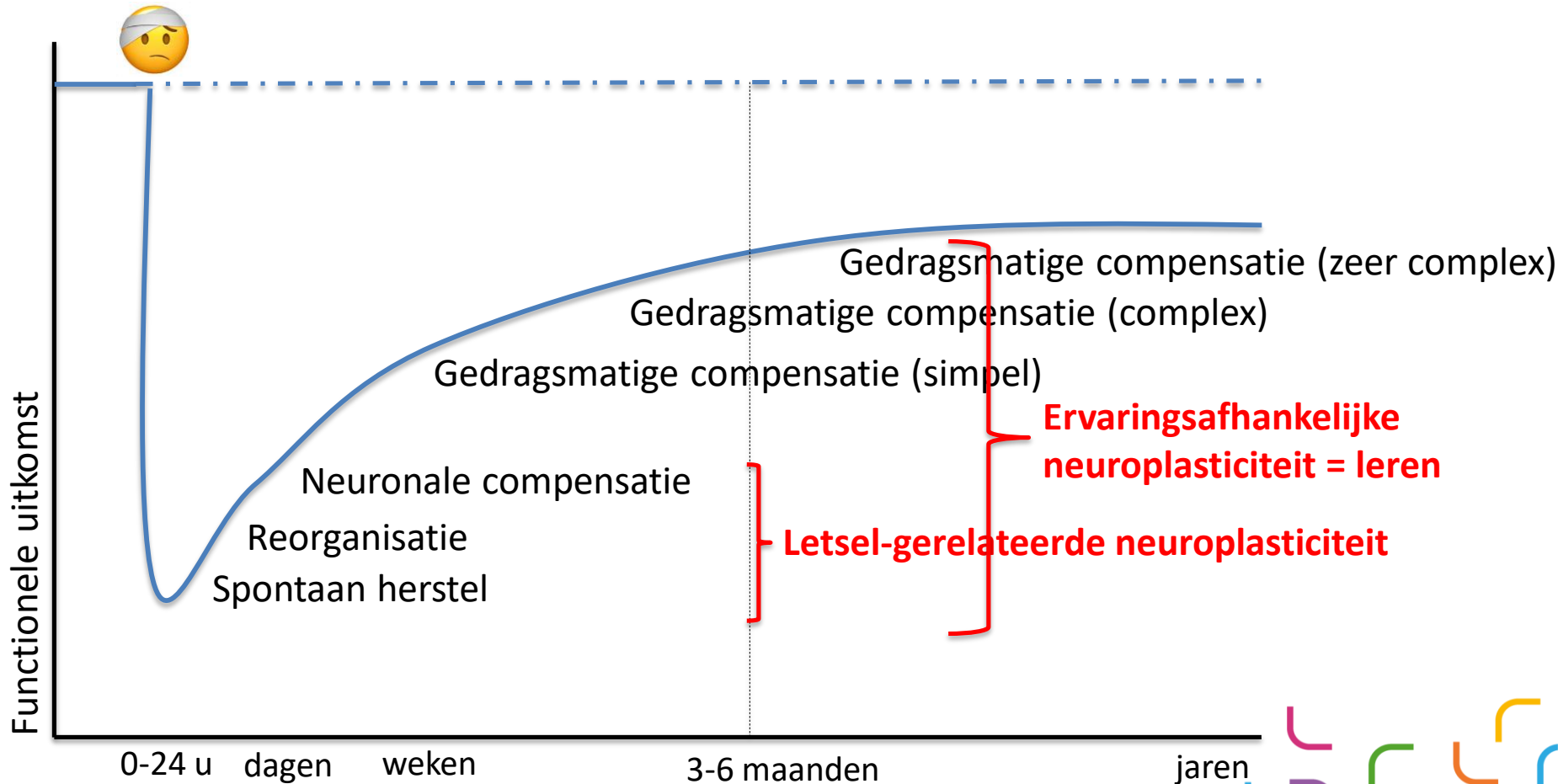


Psychosociale zorg



Neuroplasticiteit:

het vermogen van de hersenen om zich aan te passen qua structuur en functie en te veranderen gedurende ons leven en in reactie op ervaring of interactie met de omgeving

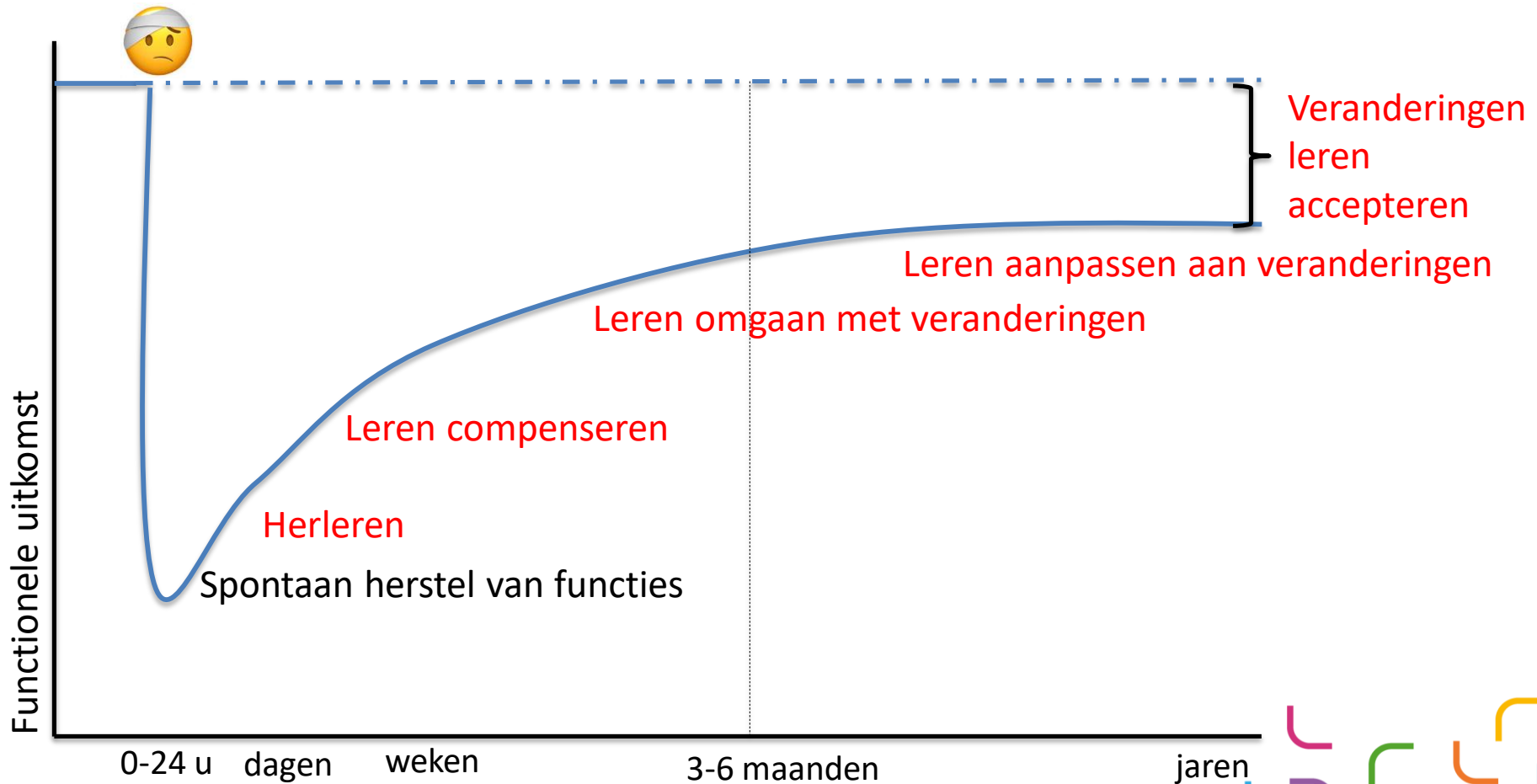


Wat is de beste behandeling?

- Volledig herstel van cognitieve functies is meestal niet mogelijk
- Er is niet één beste behandeling of aanpak
- Er is nog geen behandeling die cognitieve stoornissen kan verminderen
- Compenseren, managen, aanpassen en accepteren kun je leren
- Een combinatie van behandelmogelijkheden is waarschijnlijk het beste
- Afhankelijk van soort en ernst van het letsel
- Afhankelijk van de tijd sinds letsel
- Afhankelijk van het inzicht van de patient
- Afhankelijk van de persoonsfactoren
- Afhankelijk van omgevingsfactoren
- Spontaan herstel gaat vanzelf
- Compenseren moet je leren
- Aanpassen en accepteren gaat niet bij iedereen vanzelf
- Er kunnen steeds nieuwe vragen ontstaan



Leren leven met NAH: neurowetenschappen, revalidatie en psychosociale zorg





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