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# Toevoeging van actigrafie metingen aan **chronotherapie** als behandeling tegen depressie



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Stella Druiven – MD/PhD student  
Rijksuniversiteit Groningen, Universitair Centrum Psychiatrie, UMCG

Robert Schoevers, Harriëtte Riese, Benno Haarman, Ybe Meesters, Jeanine Kamphuis



## Circadiaan ritme

- ☉ 'Circa' = rond/bij benadering
- ☉ 'Diem' = dag

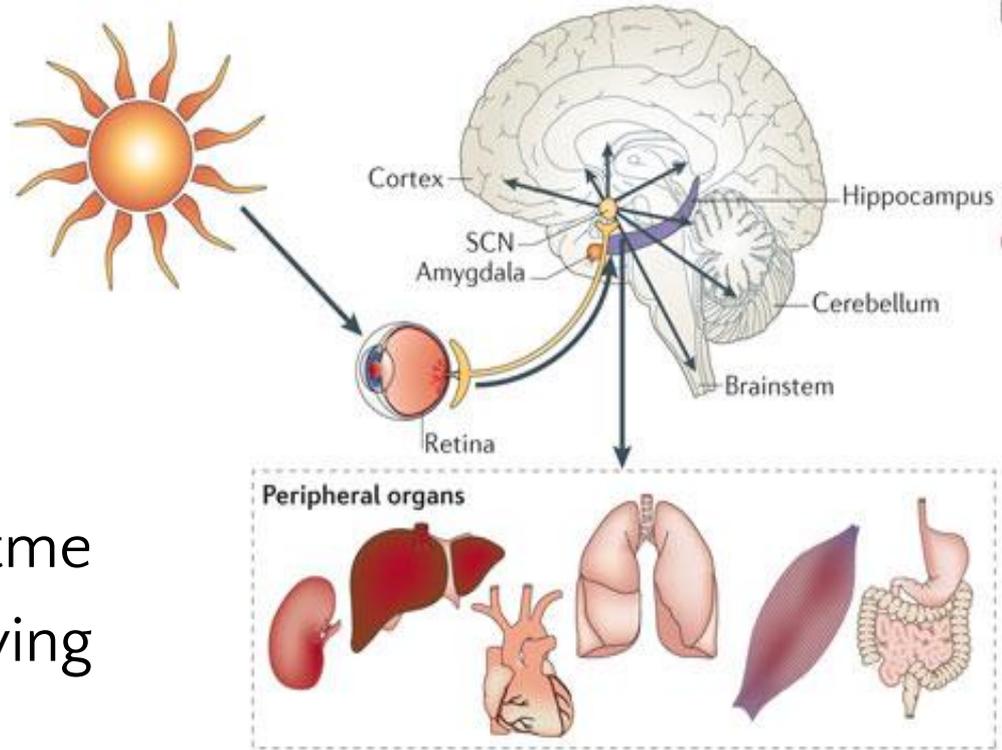
≈ 24 uur



## ● Dag/nachtritme in de mens

- Interne + externe signalen
- Suprachiasmatische nucleus

**Synchronisatie** interne ritme  
met omgeving





## Chronotype

- Timing van ritme



Ochtend type

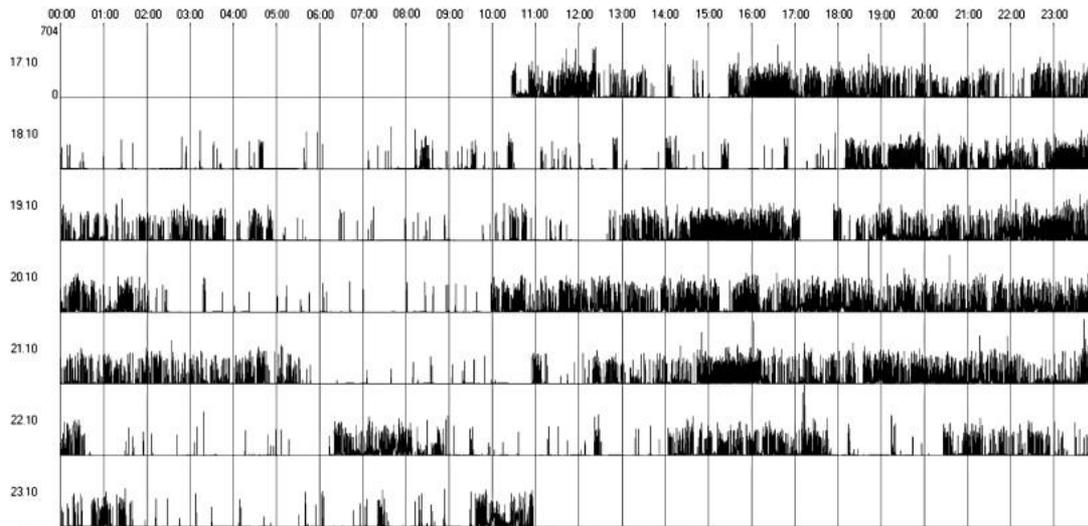


Avond type



## Circadiane ritme meten

Actigrafie





## **Circadiane ritme en depressie**

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- ⦿ Depressie
- ⦿ Slaapklachten
- ⦿ Verstoringen in circadiane ritme



## **Chronotherapie**

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Elke therapie die aangrijpt op het circadiane ritme

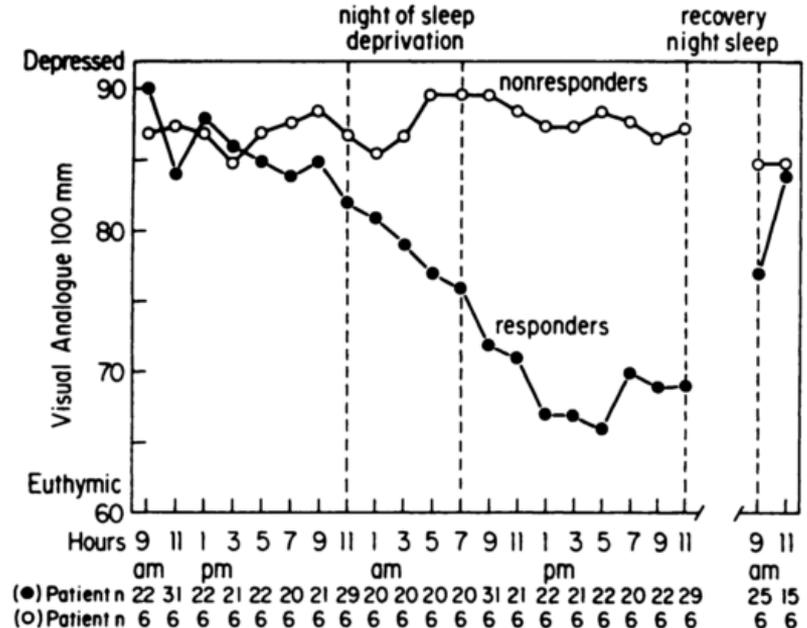
- ⦿ Lichttherapie
- ⦿ Slaapdeprivatie therapie
- ⦿ Combinatie

# The Biological Basis of an Antidepressant Response to Sleep Deprivation and Relapse: Review and Hypothesis

Joseph C. Wu, M.D., and William E. Bunney, M.D.

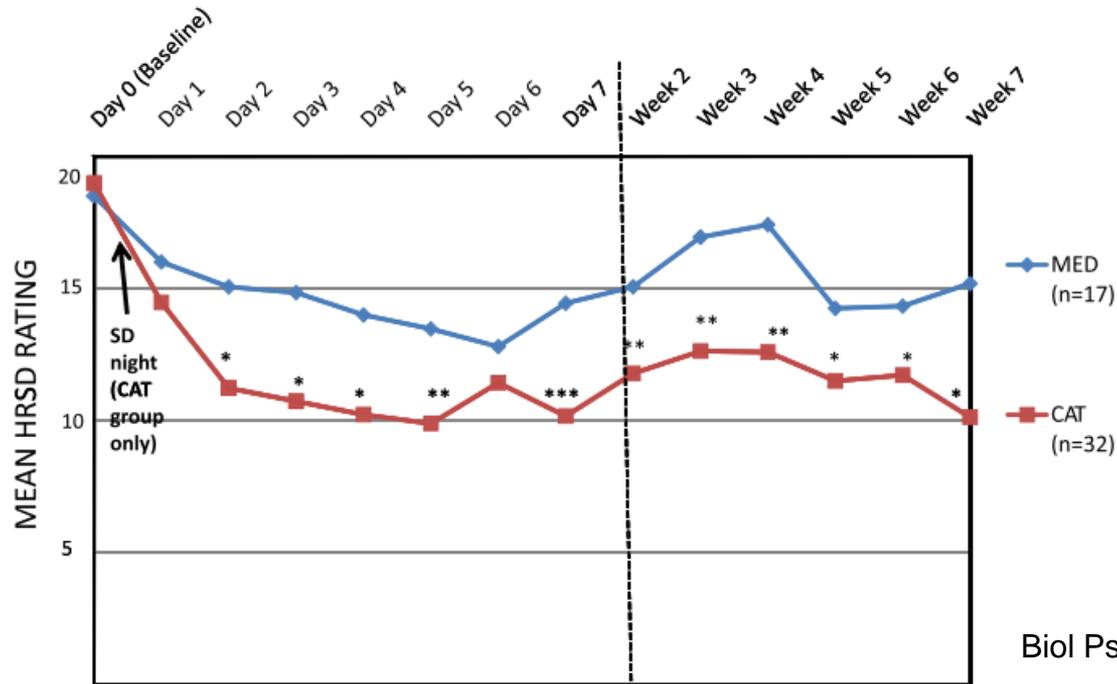
- Slaap deprivatie
- Herstel in 40-60%
- Terugval na slaap

**FIGURE 2. Mean Change in Mood Rating With One Night of Total Sleep Deprivation in Depressed Patients<sup>a</sup>**



# Rapid and Sustained Antidepressant Response with Sleep Deprivation and Chronotherapy in Bipolar Disorder

Joseph C. Wu, John R. Kelsoe, Carol Schachat, Blynn G. Bunney, Anna DeModena, Shahrokh Golshan, J. Christian Gillin, Steven G. Potkin, and William E. Bunney



Biol Psychiatry 2009;66:298–301.

**Figure 1.** Significant reduction in mean depression (19-item Hamilton Rating Scale for Depression [HRSD]) ratings over baseline in subjects treated with chronotherapeutic augmentation treatment (CAT) within 48 hours of sleep deprivation (SD) compared with medication-only (MED) subjects. Significant improvement was maintained for Weeks 1–7 (with the exception of Day 6). \* $p \leq .05$ ; \*\* $p \leq .01$ ; \*\*\* $p \leq .001$ .



## Chronotherapie - UCP

Slaap  
deprivatie  
therapie

+

Lichttherapie





# Protocol - UCP



Slaap deprivatie



Lichttherapie

ZO MA DI WO DO VR ZA



ZO MA DI WO DO VR ZA





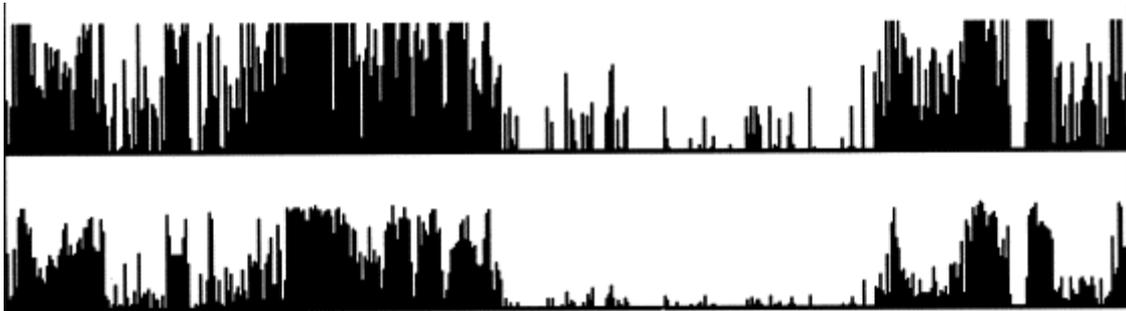
## Plaats van chronotherapie

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- ⦿ Promotieonderzoek
- ⦿ Actigrafie + vragenlijsten
  
- ⦿ Plaats van therapie
  - Therapie resistent
- ⦿ Voorspellers van succes
  - Stemmingsschommelingen

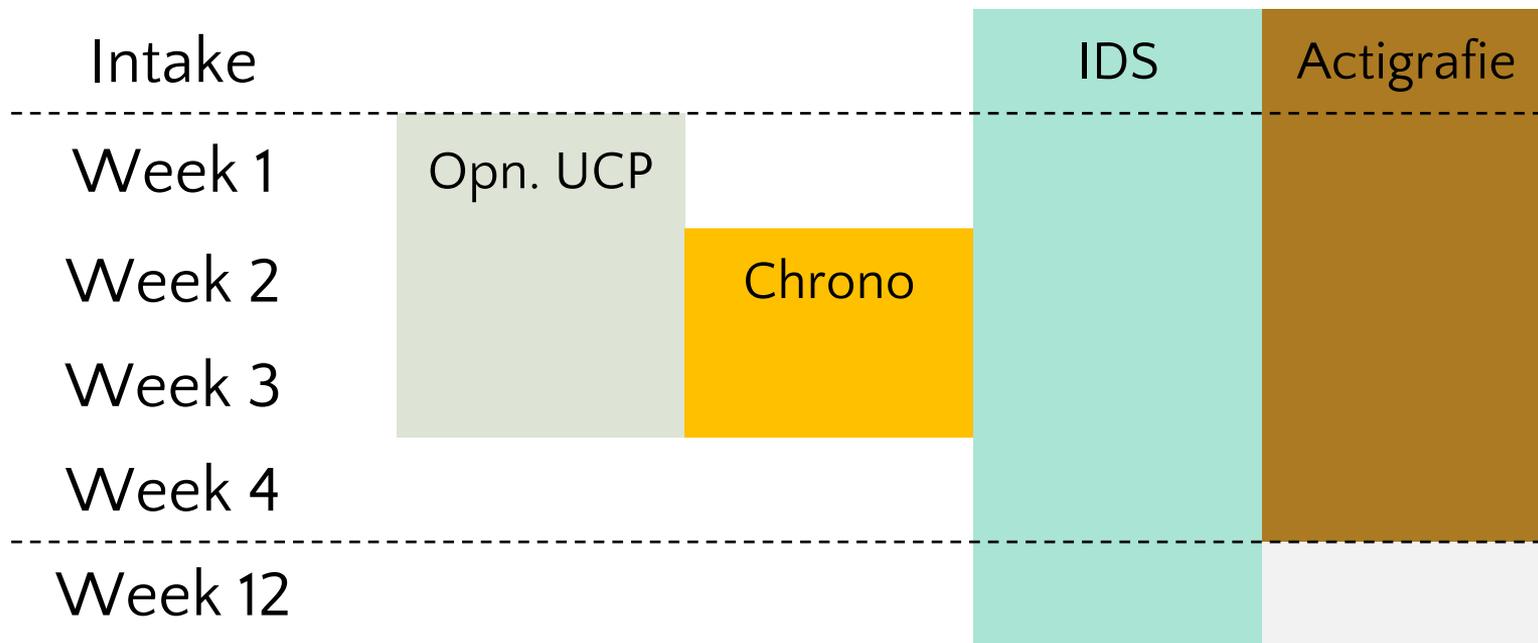


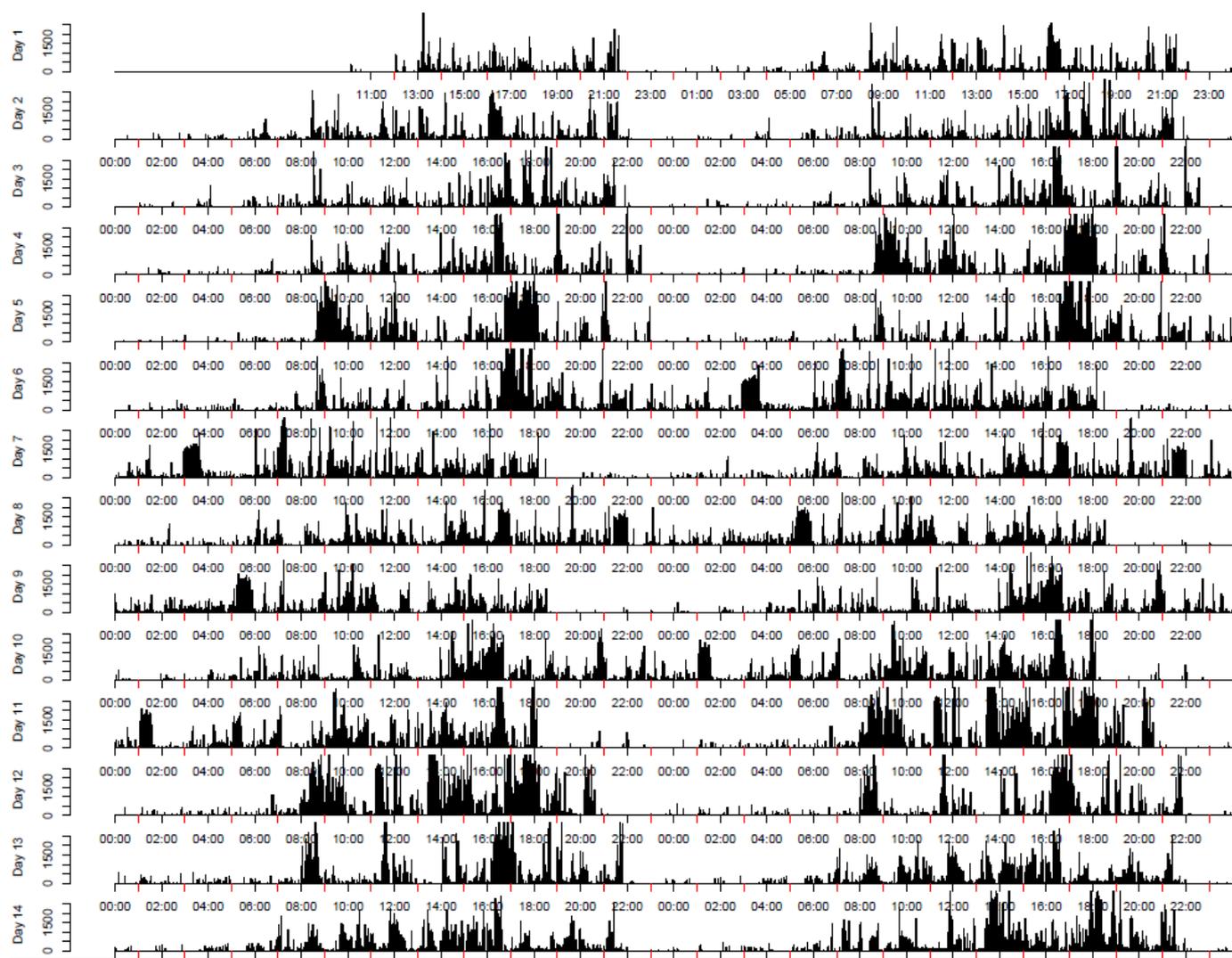
# Actigrafie





## Aangepast protocol







## **Analyseren data**

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- ⦿ Slaapritme
- ⦿ Interdaily stability – ‘sterkte’ van een ritme
- ⦿ Intradaily variability – verstoring ritme
- ⦿ L5 – 5 uur laagste activiteit
- ⦿ M10 – 10 uur meeste activiteit



● Tot nu toe..

● Komend jaar nog includeren

● ±10 geïncludeerd





# Bedankt

Voor verder vragen chronotherapie of geschikte patiënten?

Benno Haarman ([b.c.m.haarman@umcg.nl](mailto:b.c.m.haarman@umcg.nl))

Jeanine Kamphuis ([j.kamphuis01@umcg.nl](mailto:j.kamphuis01@umcg.nl))

Stella Druiven ([s.j.m.druiven@umcg.nl](mailto:s.j.m.druiven@umcg.nl))



## Referenties

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- WIRZ-JUSTICE A, VAN DEN HOOFDAKKER RH. Sleep deprivation in depression: What do we know, where do we go? *Biol Psychiatry* 1999;**46**:445–453.
- WU JC, KELSOE JR, SCHACHAT C et al. Rapid and Sustained Antidepressant Response with Sleep Deprivation and Chronotherapy in Bipolar Disorder. *Biol Psychiatry* 2009;**66**:298–301.
- WU JC, BUNNEY WE. The biological basis of an antidepressant response to sleep deprivation and relapse: review and hypothesis. *Am J Psychiatry* 1990;**147**:14–21.
- LIEVERSE R, RIEMERSMA-VAN DER LEK RF, VOERMANS JM, HOOGENDIJK WJG. Chronotherapie bij stemmingsstoornissen. *Tijdschr Psychiatr* 2012;**54**:527–537.