

# Actigrafie bij bipolaire stoornis

*Het meten van activiteit, slaap en stemming*



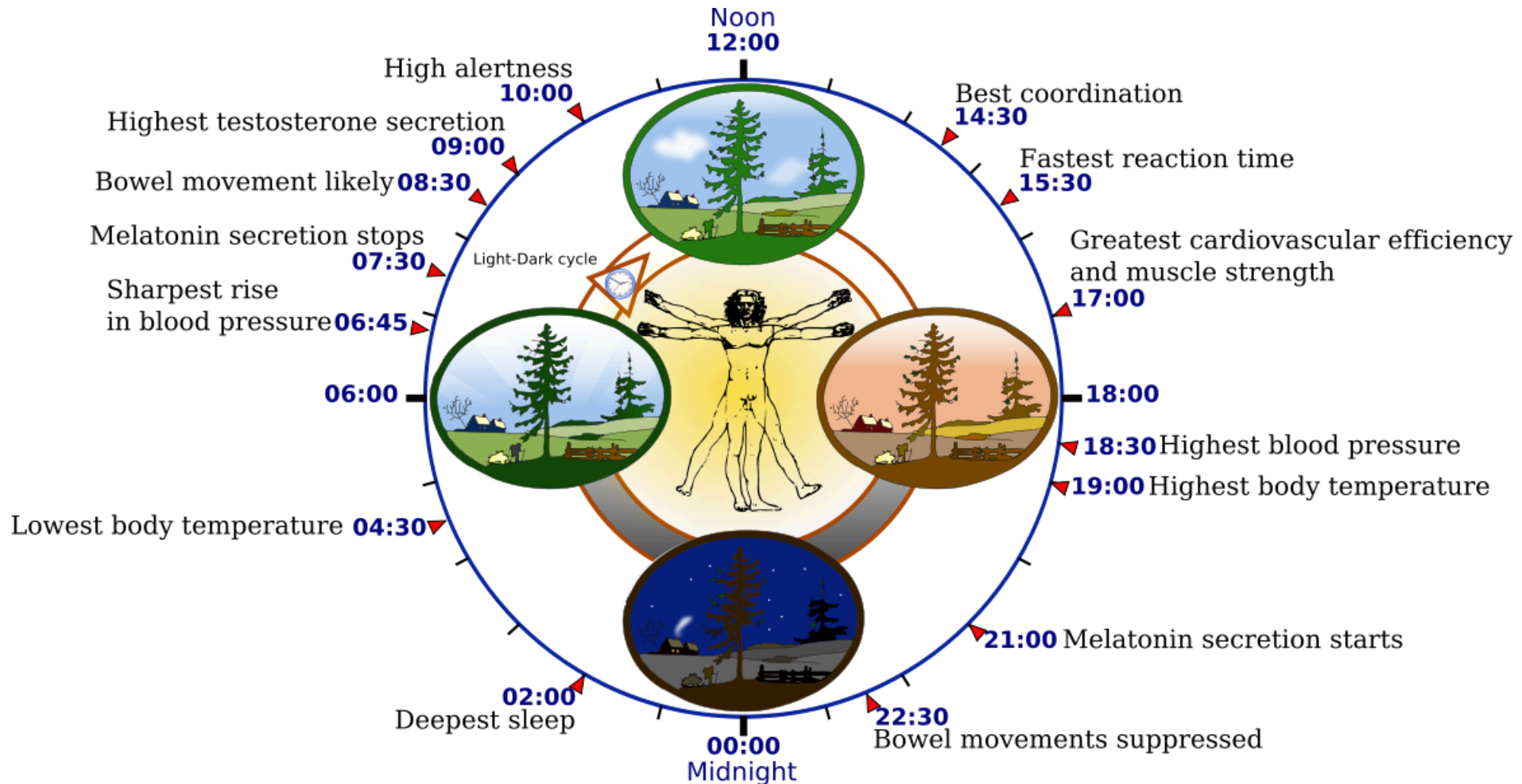
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# Disclosure belangen

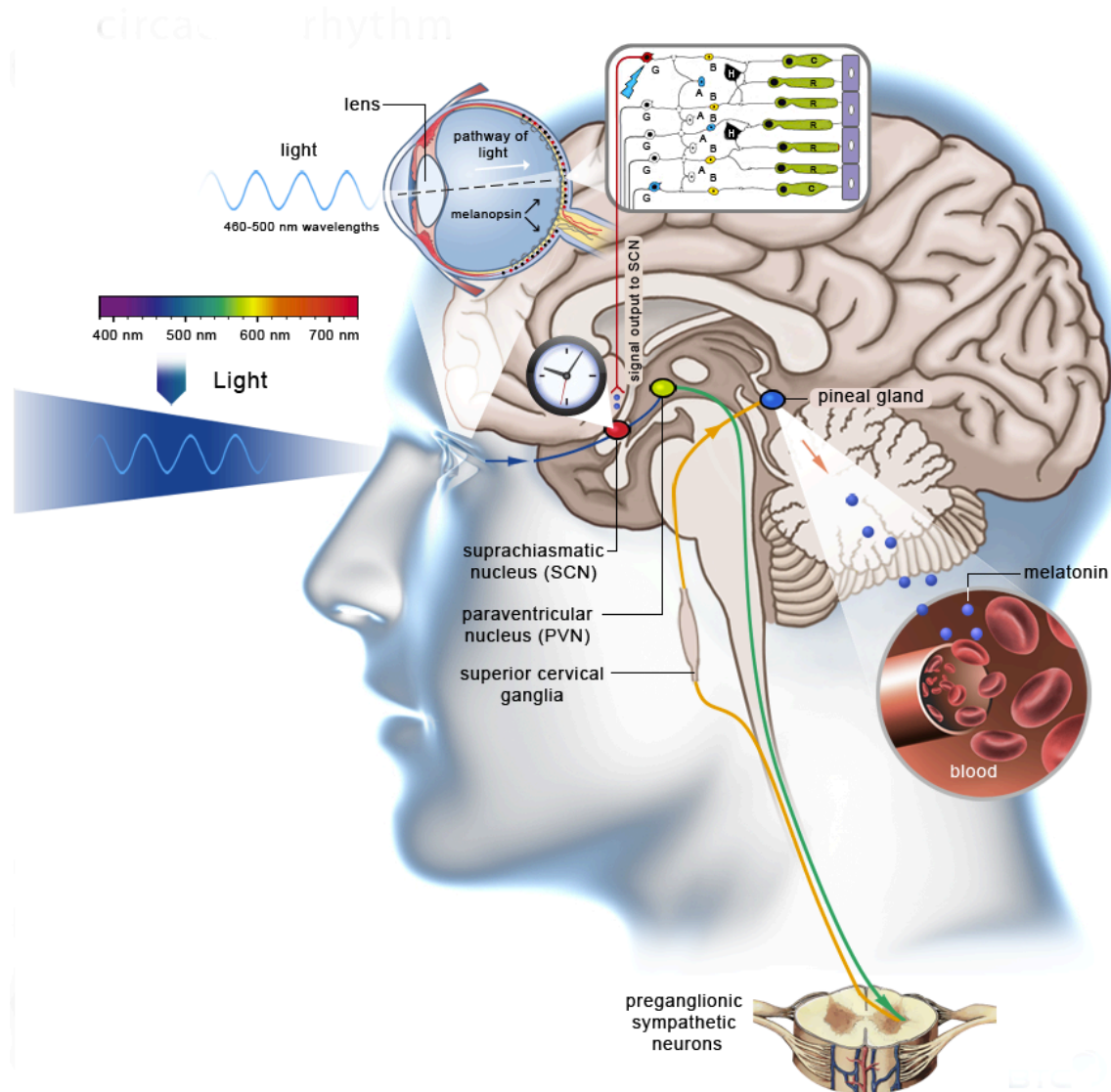
# Inhoud

- De biologische klok
- De klok en de bipolaire stoornis
  - Slaap systemen
  - Ritme systemen
- Relatie tot stemming

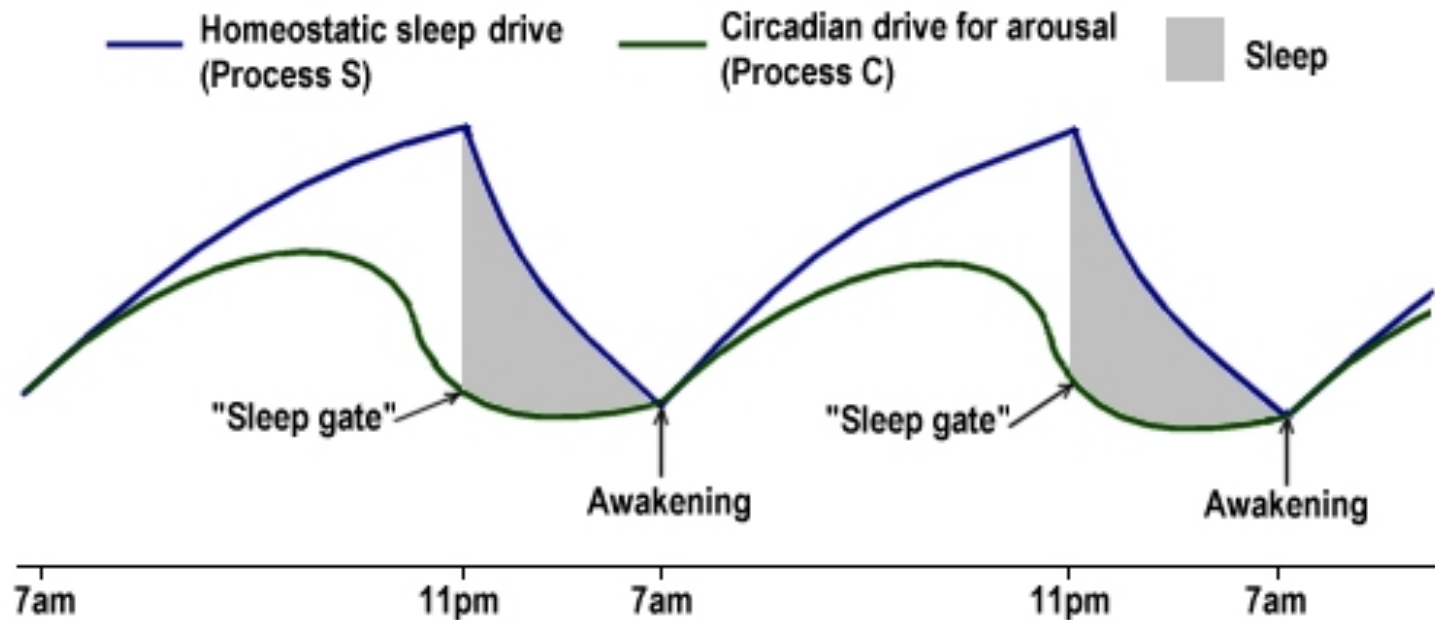
# Het circadiane ritme



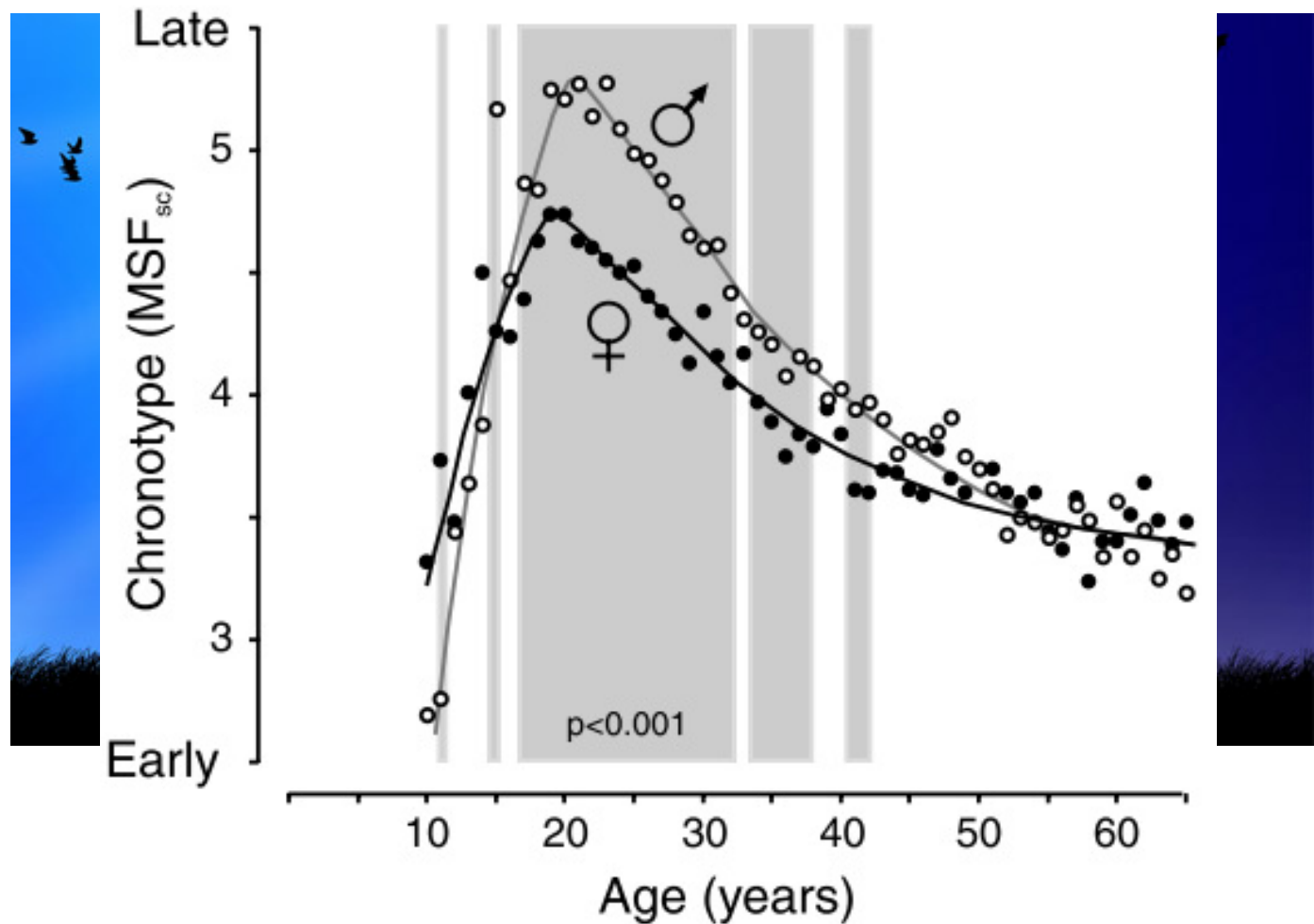
# Licht en het biologische ritme



# “Two-process model of sleep regulation”



# Verschillende mensen – verschillende ritmes





# Bipolaire stoornis

## 3. Bipolar Episode and Bipolar Disorder

Go to: ☒

Bipolar disorder is characterized by more than one bipolar episode. There are three types of bipolar disorder:

1. Bipolar 1 Disorder, in which the primary symptom presentation is manic, or rapid (daily) cycling episodes of mania and depression.
2. Bipolar 2 Disorder, in which the primary symptom presentation is recurrent depression accompanied by hypomanic episodes (a milder state of mania in which the symptoms are not severe enough to cause marked impairment in social or occupational functioning or need for hospitalization, but are sufficient to be observable by others).
3. Cyclothymic Disorder, a chronic state of cycling between hypomanic and depressive episodes that do not reach the diagnostic standard for bipolar disorder ([APA, 2000](#), pp. 388–392).

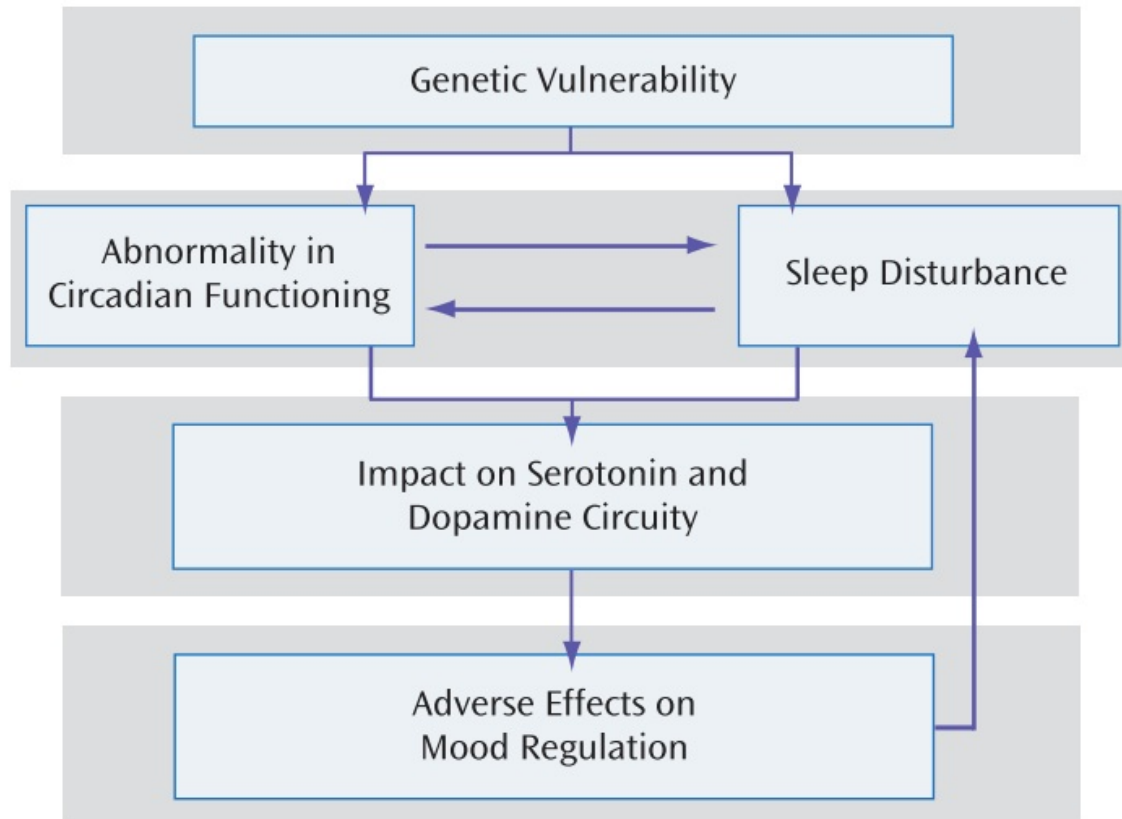
Manic episodes are characterized by:

- A. A distinct period of abnormally and persistently elevated, expansive, or irritable mood, lasting at least 1 week (or any duration if hospitalization is necessary)
- B. During the period of mood disturbance, three (or more) of the following symptoms have persisted (4 if the mood is only irritable) and have been present to a significant degree:
  - (1) increased self-esteem or grandiosity
  - (2) decreased need for sleep (e.g., feels rested after only 3 hours of sleep)
  - (3) more talkative than usual or pressure to keep talking
  - (4) flight of ideas or subjective experience that thoughts are racing
  - (5) distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli)
  - (6) increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation
  - (7) excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments)" ([APA, 2000](#), p. 362).

Depressive episodes are characterized by symptoms described above for Major Depressive Episode.



**FIGURE 1. Bidirectional Relationships Between Sleep, Circadian Functioning, and Mood Regulation in Bipolar Disorder**



# Tijdens een episode

**TABLE 1. Summary of Studies Reporting Sleep Disturbance Across Manic, Depressive, and Mixed Episodes in Bipolar Disorder**

Authors and Reference Number	Sleep Disturbance	Polysomnography or Self-Report
<b>Mania</b>		
Clayton and Pitts (3)	Reduced need for sleep in 94%	Self-report
Winokur and Tanna (4)	Reduced need for sleep in 90%, initial insomnia in 34%, terminal insomnia in 24%	Self-report
Loudon et al. (5)	Reduced need for sleep in 69%	Self-report
Carlson and Strober (6)	Reduced need for sleep in 78%	Self-report
Cassidy et al. (7)	Decreased sleep present but of minimal severity in 90%, indisputably present in 78%	Self-report
Serretti and Olgiati (8)	Bipolar I: reduced need for sleep in 99%; bipolar II: reduced need for sleep in 97%	Self-report
Hudson et al. (9)	Relative to healthy non-patients, decreased time spent asleep, increased time awake in the last 2 hours of recording, shortened REM sleep latency, increased REM activity, increased REM density	Polysomnography
Linkowski and Mendlewicz (10)	Relative to healthy comparison subjects, later time of sleep onset (mean of 12:34 a.m. compared with 11:50 p.m.), reduced time from sleep onset to final morning awakening (378 minutes vs. 457 minutes); trend for short REM latency	Polysomnography
Hudson et al. (11)	Relative to healthy non-patients, bipolar and unipolar patients exhibited disturbed sleep continuity, increased percentage of stage 1 sleep, shorter REM latency, increased REM density	Polysomnography
<b>Bipolar depression</b>		
Winokur et al. (12)	Insomnia in 100%, difficulty falling asleep in 58%, early morning awakening in 27%; hypersomnia in 23%	Self-report
Detre et al. (13)	Hypersomnia in 78%, hyposomnia in 17%, restless sleep in 29%	Self-report
Casper et al. (14)	Global sleep disturbance in 85%, early morning awakening in 77%, difficulty falling asleep in 60%, hypersomnia in 23%	Self-report
Duncan et al. (15)	Relative to unipolar patients and healthy nonpatients, greater fragmentation of REM periods	Polysomnography
Gillin et al. (16)	Relative to healthy nonpatients, lower REM latency	Polysomnography
Giles et al. (17)	No differences between bipolar I and bipolar II patients; relative to patients with unipolar depression, longer REM latency and greater total sleep time in bipolar II patients	Polysomnography
Jernjaczyk (18)	Reduced REM latency, greater standard deviation in activity and density of eye movements	Polysomnography
de Maertelaer et al. (19)	Compared with patients with unipolar depression, longer sleep onset latency; trend toward greater number of spindles	Polysomnography
Thase et al. (20)	Relative to healthy non-patients, fewer minutes in stage 1; did not observe shorter mean REM latency, poor sleep continuity, or low stages 3 and 4	Polysomnography
Lauer et al. (21)	Relative to healthy non-patients, both unipolar and bipolar patients exhibited prolonged slow-wave sleep latency, reduced REM latency, and increased REM density	Polysomnography
Fossion et al. (22)	Relative to patients with unipolar depression, trend toward higher percentage of awakenings in bipolar I patients; relative to bipolar II patients, trend toward greater fragmentation of REM sleep in bipolar I patients	Polysomnography
<b>Mixed mood state</b>		
Cassidy et al. (7)	Decreased sleep present but of minimal severity in 100%, indisputably present in 91%	Self-report

# Slaapproblemen – Tussen episodes

Gemeten:

- Meer verschillen in slaapduur
- Vaker wel of niet wakker worden 's nachts

Zelf-gerapporteerd:

- Langer wakker liggen
- Langer slapen
- Meer veranderingen tussen deze maten

# Ritme veranderingen

	Bipolar (n = 19)		Control (n = 19)	
	Mean	SD	Mean	SD
<i>Circadian activity</i>				
Intradaily variability <sup>a</sup>	0.811	0.25	0.67	0.12
Interdaily stability <sup>b</sup>	0.57	0.10	0.63	0.09

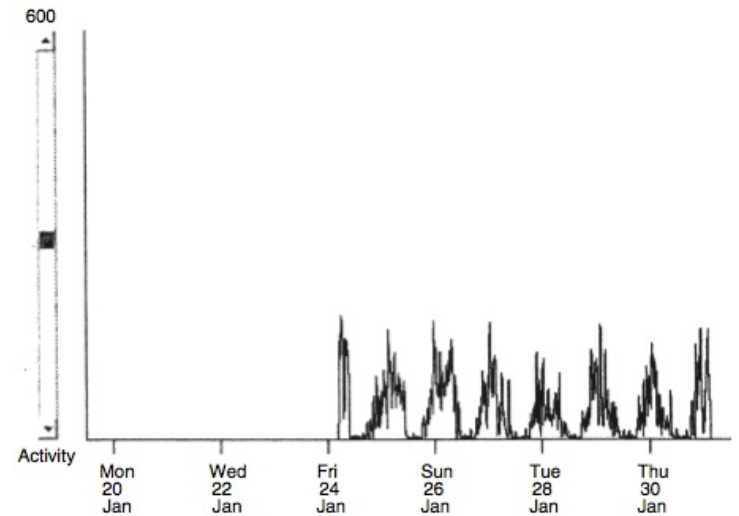
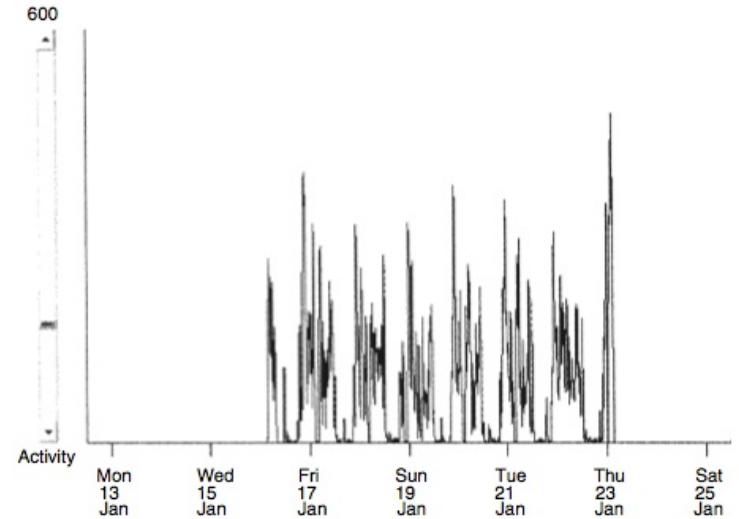
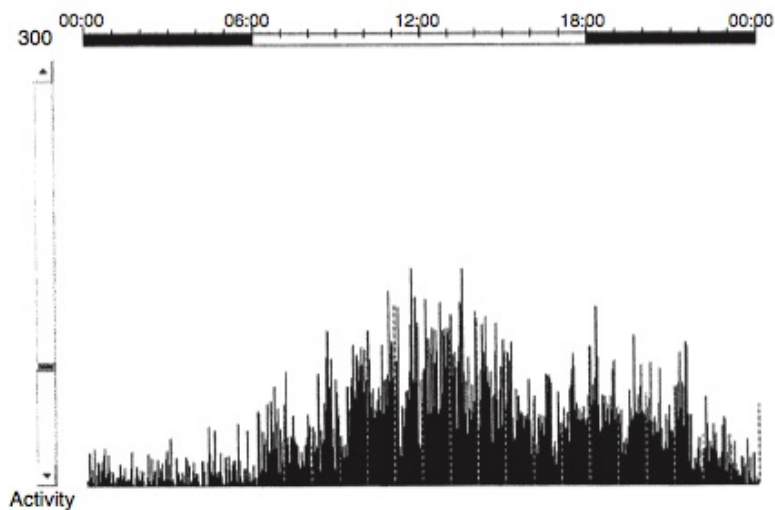
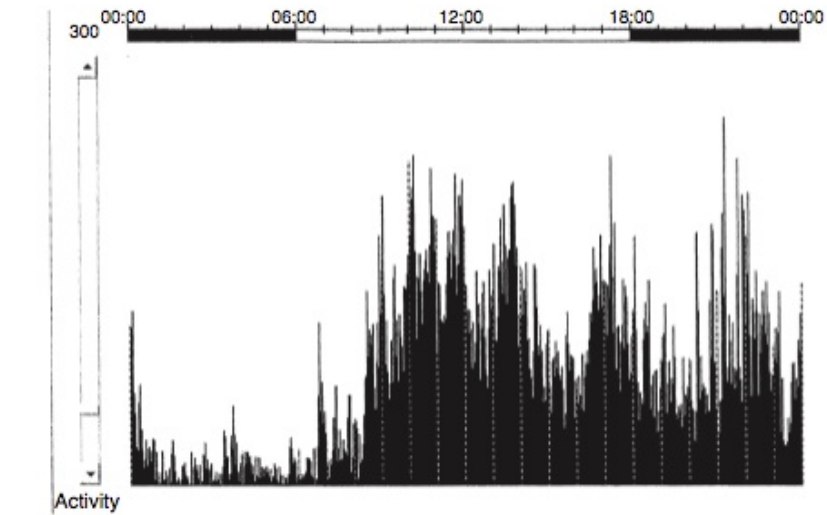
BD = bipolar; C = control

<sup>a</sup>BD > C,  $t(36) = 2.21$ ,  $p < 0.03$

<sup>b</sup>C > BD,  $t(36) = 1.94$ ,  $p < 0.03$

- Meer variabel binnen de dag
- Minder stabiel tussen dagen

# Ritme veranderingen



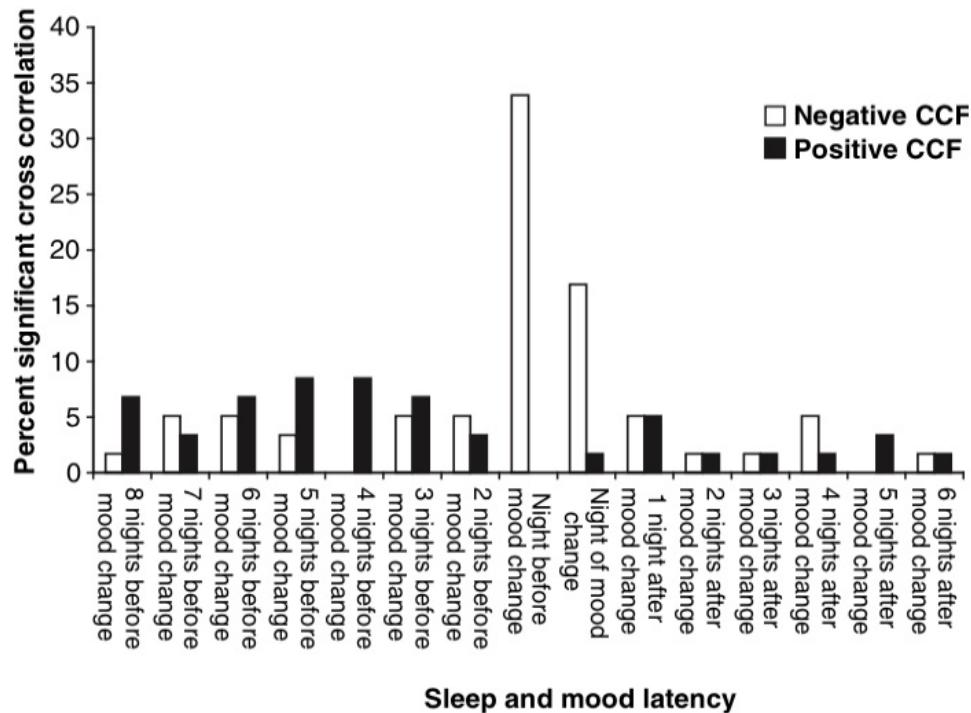
# Slaapproblemen ook mogelijk voorspellend?

Table 3  
Early symptoms identified in bipolar disorder

	Early symptoms	Range of sample size	% of individuals identifying this early symptom	Median (%)
Bipolar depression	Mood change	20–40	10–88	48
	Psychomotor symptoms	20–40	10–86	41
	Increased anxiety	20–40	18–59	36
	Appetite change	20–40	10–53	36
	Suicidal ideas/intent	20	29–64	29
	Sleep disturbance	20–40	17–57	24
	Other	20	14–29	22
Mania	Sleep disturbance	20–206	53–90	77
	Psychotic symptoms	20–206	7–80	47
	Mood change	20–206	14–100	43
	Psychomotor symptoms	20–206	10–100	34
	Other	20	20–35	30
	Appetite change	20–206	12–67	20
	Increased anxiety	20–40	11–20	16

Data from Molnar et al. (1988), Sclaire and Creed (1990), Smith and Tarrier (1992), Lam and Wong (1997), Wong and Lam (1999).

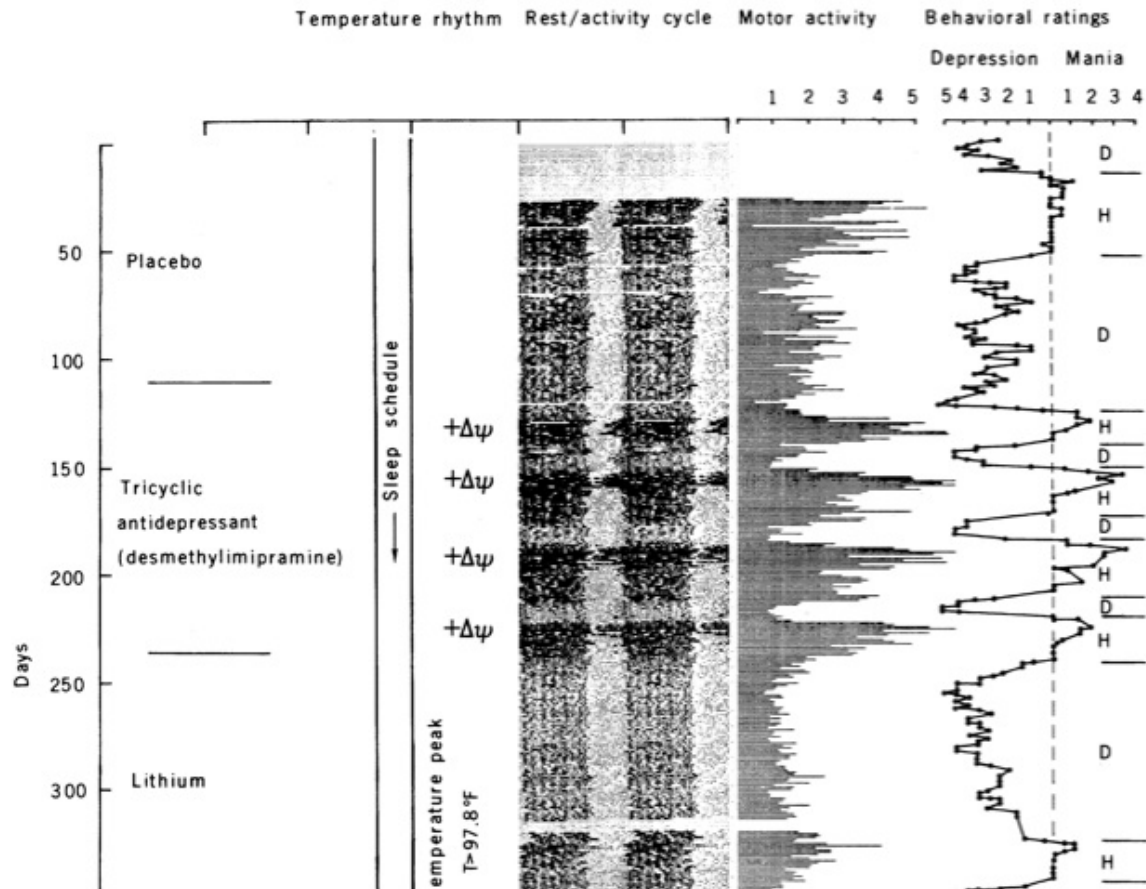
# Langdurig: dagboeken



- Nacht voor stemmingsverandering minder slapen!



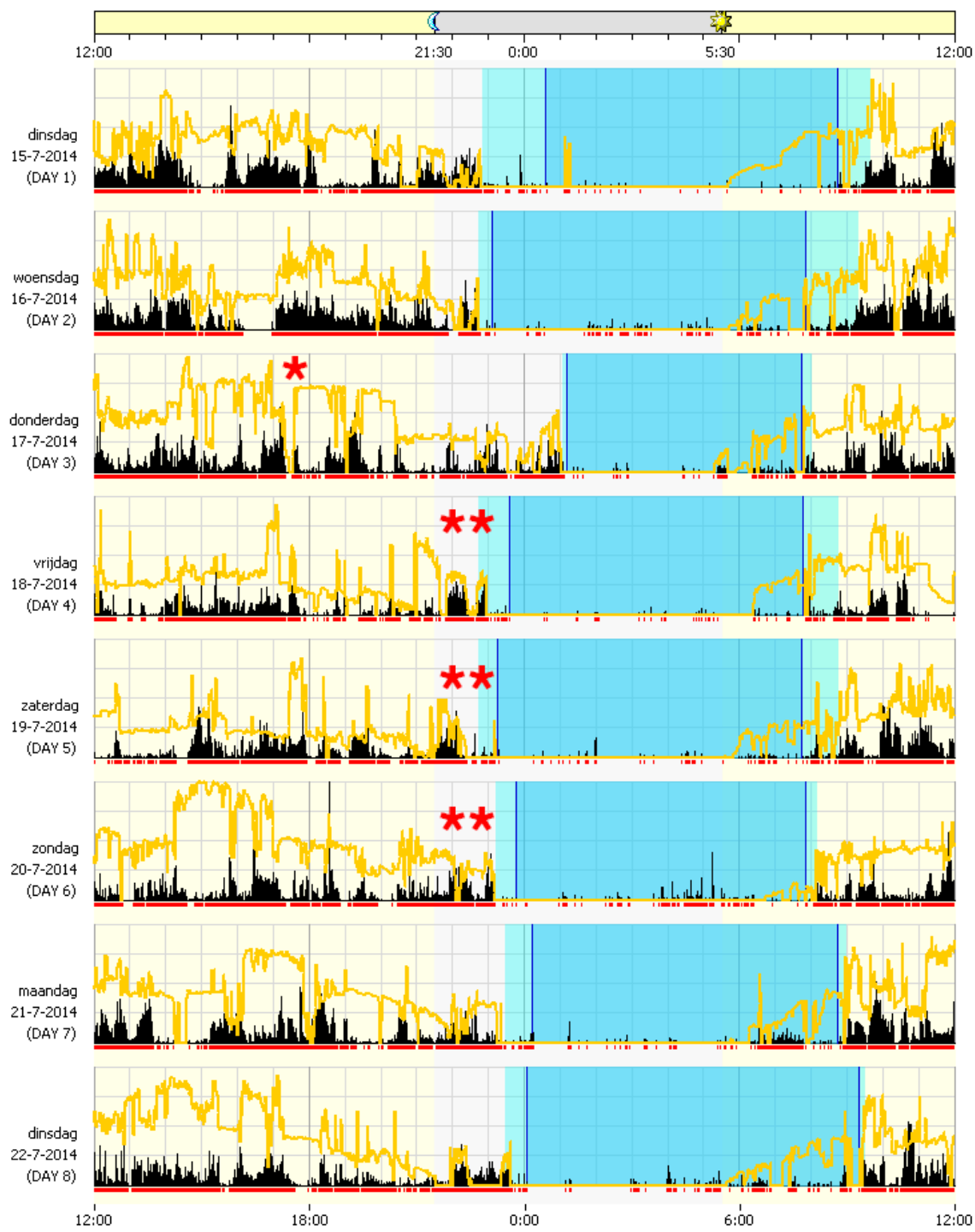
# Langdurig: gemeten



# Terug naar de kliniek

- Pt D, 36j m
- Bipolaire stoornis I, sinds 2003
- Opname 2003, 19 maanden
- Maandag goed nieuws (goede sollicitatie, gezondheid goed)
- 4 nachten weinig tot geen slaap
- Vrijdag presentatie met manische klachten
- *Je holt er altijd achteraan*

- Pt H,
- Bipo
- Life €
- Adec
- 1 r



d mee

# Wat zijn wij van plan?

- Langdurige studie
- 2x10 patiënten met bipolaire stoornis type I
- 180 dagen meten

patiënt1 

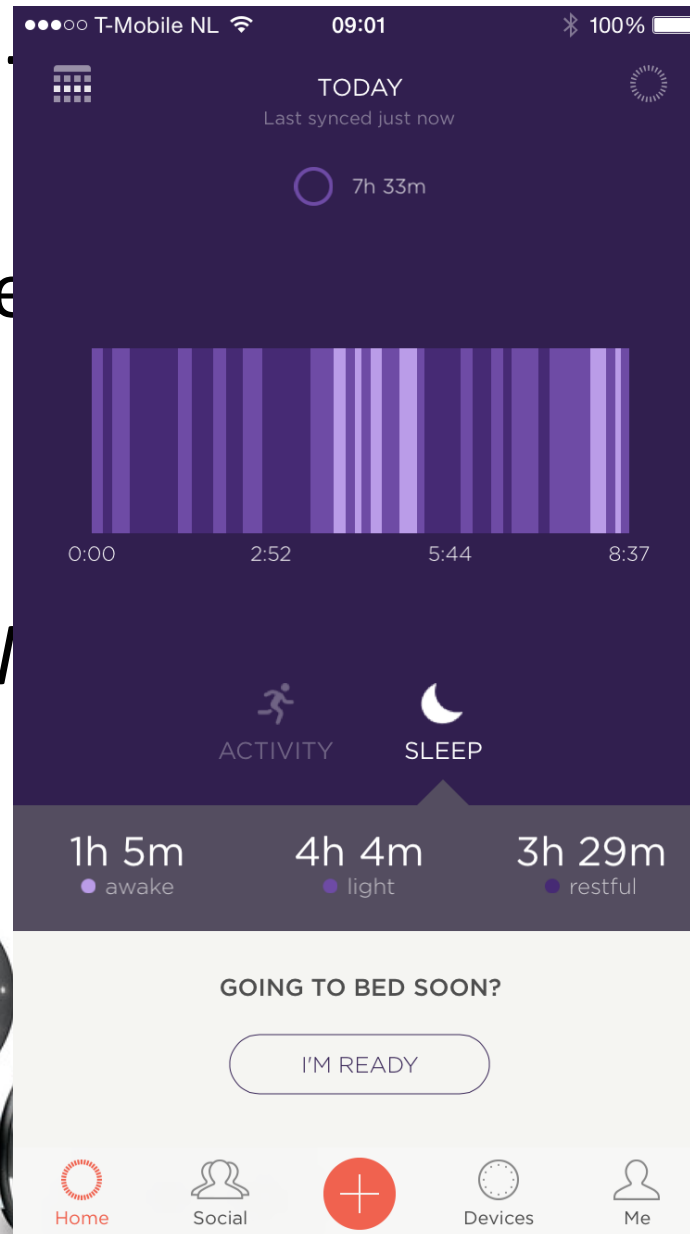


Wat

en?

- Slaapdagboek

- "Pittsburg Sl



# Vragen?

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