

Whole body cryotherapy in cryo-chamber for treating primary insomnia

The prominent features of this sleep disorder are usually relatively easily recognizable:

- a permanently raised activity level with inner unrest and anxiety that also extends into the night with long wake phases
- futile and strained attempts to fall asleep, fear of night
- worrying and anxious thought patterns that prevent falling asleep and often fill up long periods of wakefulness,
- physical unrest, muscle tension and vegetative symptoms such as tachycardia,
- defective stress processing with an increased release of stress hormones and finally
- fatigue during the day with reduced overall performance.

If at all possible, the diagnosis should be supported by a somnopolygraphic examination performed in a sleep laboratory. Amongst other things electroencephalograms and eye movements are recorded while in bed. The sleep profile can then be determined from these parameters.

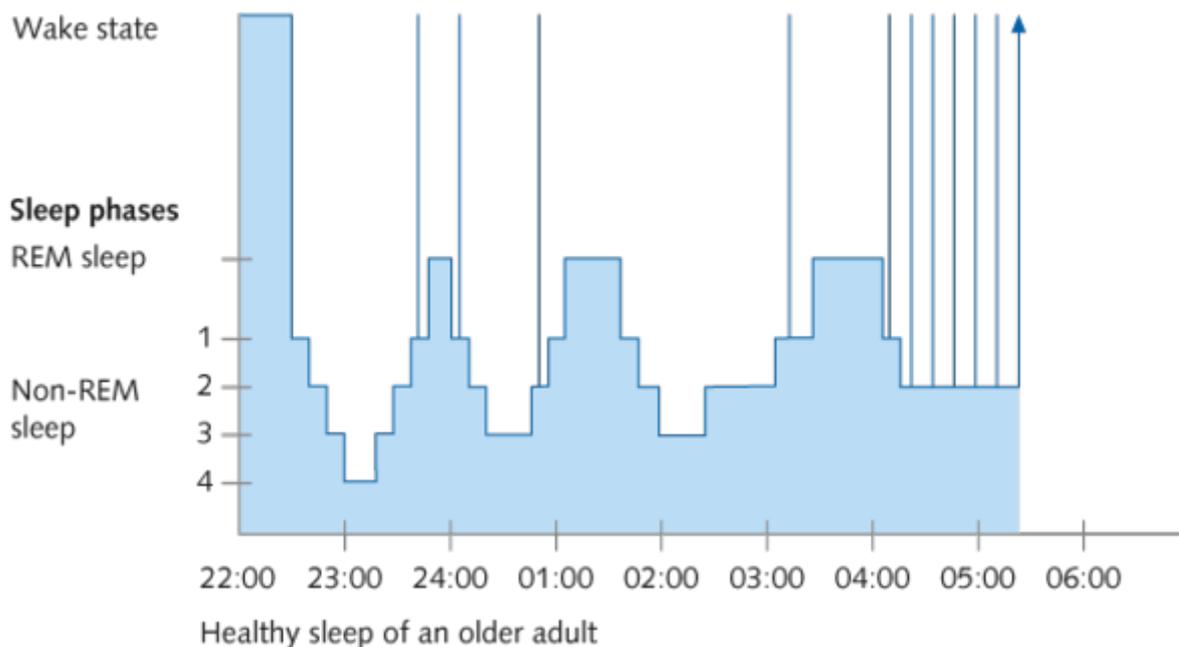
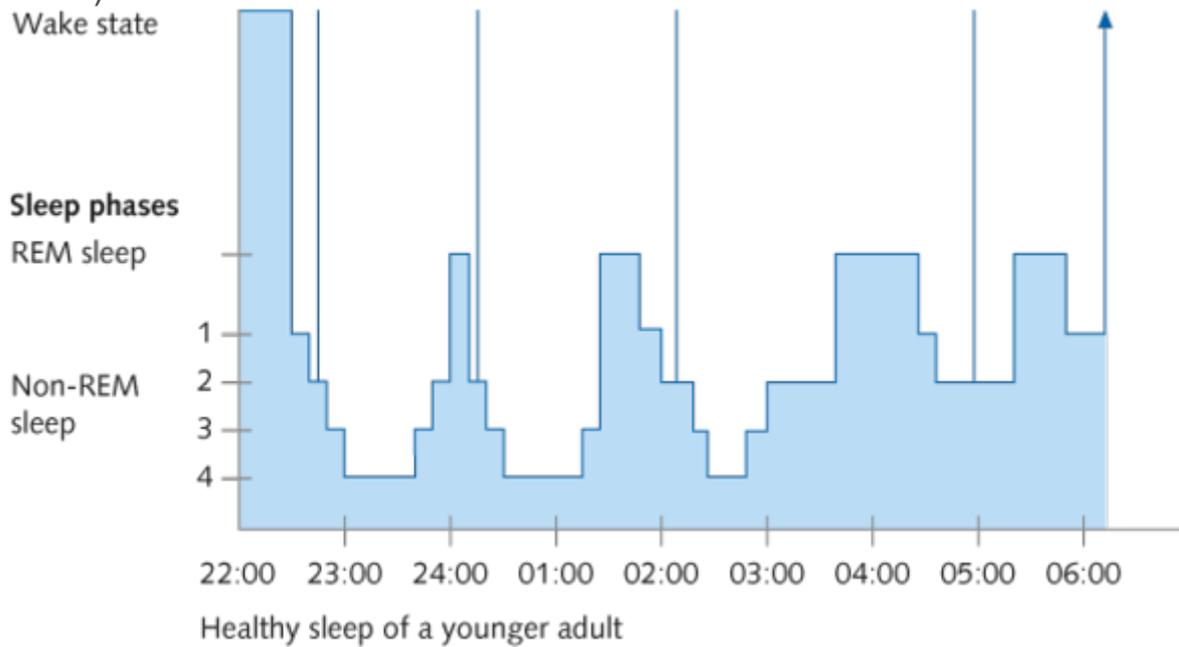
In figure 4.8 two such profiles are schematically depicted, as are typical for younger and older sleepers who enjoy a healthy and restful sleep (see also the explanations in the glossary under the terms “sleep profile” and “somnopolygraph”):

- The time needed to fall to sleep is short and the duration of sleep is adequate.
- The sleep phases run normally in cycle and the sleep cycles occur three to four times in the night.
- The deep sleep phases are recorded mainly during the first night half and the dream sleep phases are prolonged in the second night half.
- No frequent awakening can be detected.

With increasing age the sleep profile changes. This process is physiologically conditioned and is of no clinical relevance:

- Little deep sleep is present, the deep sleep phase 4 is hardly or no longer achieved. Also the overall time of deep sleep phase 3 is shortened.
- Sleep duration in total is decreased and short periods of wake occur more frequently.

Fig. 4.8 Sleep profiles of healthy sleepers (for explanation see glosary of book)



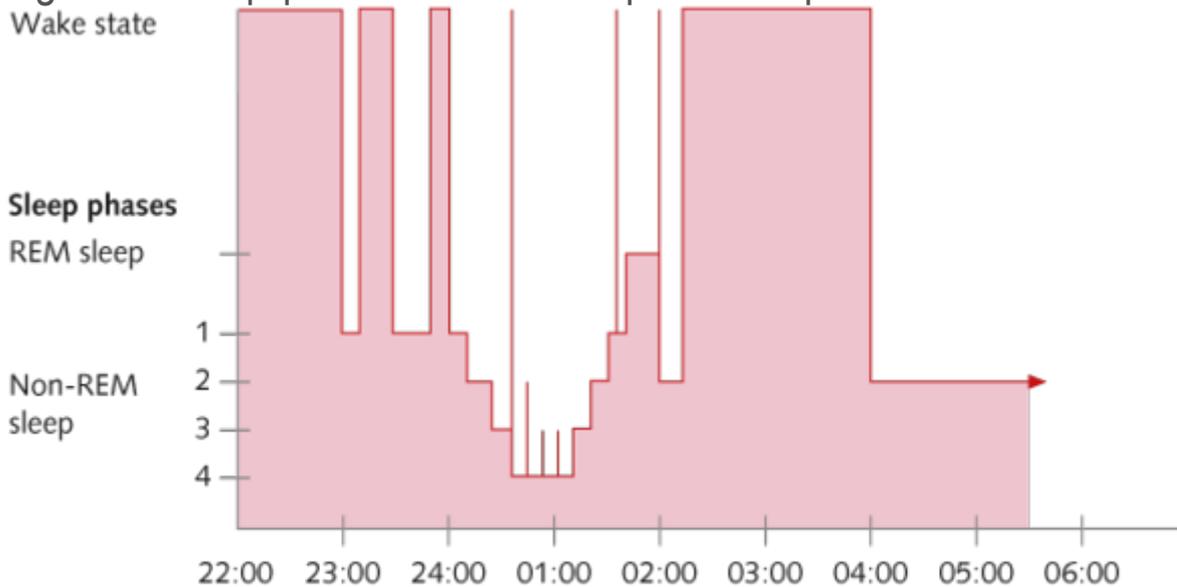
If these features are present, one can assume that sleep is restful and improves performance. Now let's look at figure 4.9 as a comparison. This shows the typical features of an insomnia, e.g.:

- The time to fall asleep is extended.
 - Only little deep sleep is achieved that is often interrupted.
 - There are large periods of wakefulness and the individual often awakens.
- This sleep is only a little bit restful for the individual and can only contribute to a minor extent to daily psycho-physical regeneration (see also chapter 2).

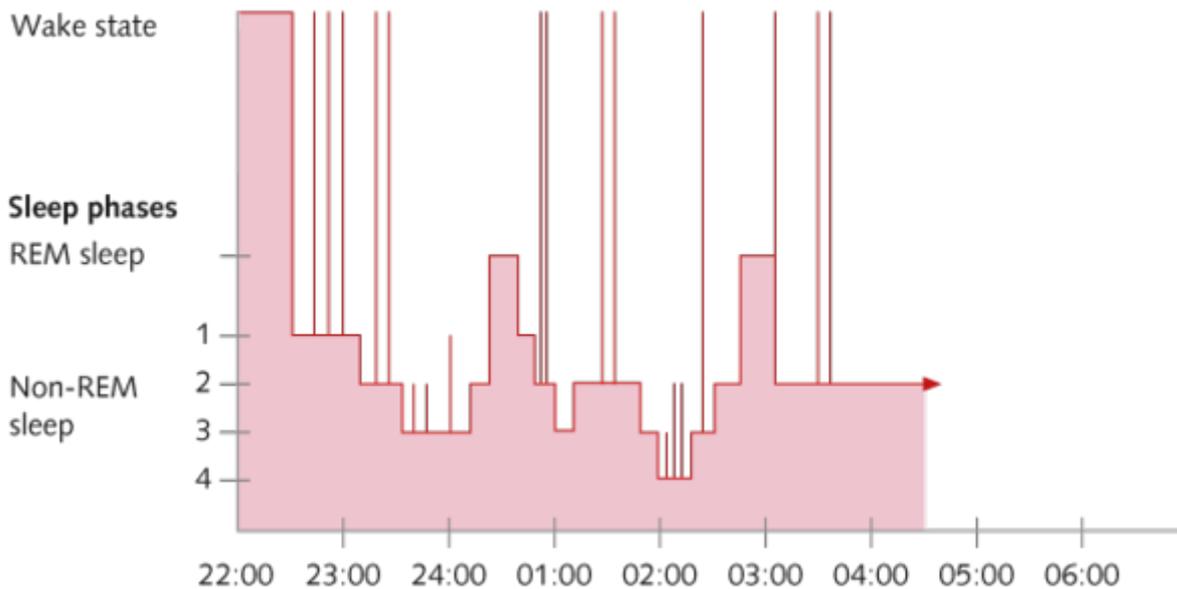
There are enough behavioral-therapeutic concepts for redirecting a disrupted sleep behavior to a normal course without having to resort to the use of sleeping tablets. In one such treatment concept whole body cryotherapy can be added as an adjuvant because it can help restore the disrupted homeostasis in central activity levels.

Already after a one week cold therapy a clear improvement in sleep behavior can be achieved so that sleep becomes more restful and performance improves. Here one should not make the mistake of only resorting to cold to induce the desired change. The causes are too complex to allow this. An elucidation of the often very individualized causes is indispensable for an effective and enduring improvement of disrupted sleep behavior.

Fig. 4.9 Sleep profiles with disrupted sleep



Extended time to fall asleep, long periods of lying awake, little and disrupted deep sleep



Frequent short awakening, little and disrupted deep sleep