

## Rocking Benefits For Sleep: Various Study Excerpts, General Info

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### Vestibular Dreams: The Effect of Rocking on Dream Mentation

Kenneth Leslie and Robert Ogilvie

*Dreaming: Journal of the Association for the Study of Dreams.* Vol 6(1) 1-16, Mar 1996.

The study investigates the proposed link between vestibular activation (rocking) and dream lucidity. A rocking by time interaction was found: rocking increased lucid mentation during early morning REM periods... These results suggest that vestibular activation during REM sleep can influence dream mentation, specifically, dream self-reflectiveness and vestibular imagery.

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### Rocking bed and prolonged independence from nocturnal non-invasive ventilation in neurogenic respiratory failure associated with limb weakness

<http://pmj.bmjournals.com/cgi/content/abstract/80/944/360>

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### Effect of a rocking bed on apnoea of prematurity

SJ Tuck, P onin, C Duvivier, T May and P Vert

<http://adc.bmjournals.com/cgi/content/abstract/archdischild;57/6/475>

We describe a rocking bed for use in incubators. Its effect was studied in 12 preterm infants with idiopathic apnoea, using each as his own control. All but one had less apnoea when the bed was rocking than when it was still. Apnoea associated with a significant fall in transcutaneous PO2 was less frequent, and fewer interventions were needed to terminate apnoeic attacks.

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### Sudden infant death syndrome and possible relation to vestibular function.

**Farrimond T.**

University of Waikato, New Zealand.

Some infants seem to be born with a degree of respiratory centre immaturity which in combination with other problems such as illness, head colds, exposure to cold, air or smoke, may result in cessation of breathing. **Vestibular stimulation by rocking has been shown to be beneficial for premature babies in reducing apnea. There also appear to be other benefits**, resulting in more rapid maturation of the nerve cells of the cerebellum which is still developing during the first six months of life. The suggestion is made that crib deaths may be reduced by the use of automatically rocking cribs, particularly during the night when most deaths occur.

PMID: 2251079 [PubMed - indexed for MEDLINE]

Pediatrician. 1989;16(1-2):39-44.

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From PubMed

## Use of the rocking bed in the treatment of neurogenic respiratory insufficiency.

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list\\_uids=7922294&dopt=Abstract](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=7922294&dopt=Abstract) QJM. 1994 Jul;87(7):423-9

Chalmers RM, Howard RS, Wiles CM, Spencer GT.  
Lane-Fox Unit, St Thomas' Hospital, London, UK.

We describe 53 patients who received ventilatory support with a rocking bed. Diagnoses included previous poliomyelitis (30), muscular dystrophy (12), motor neurone disease (4), adult-onset acid maltase deficiency (4) and a miscellaneous group (3). Patients presented with respiratory insufficiency characterized by diaphragm weakness, progressive nocturnal hypoventilation and/or acute or chronic respiratory failure. Domiciliary rocking beds were used by 43 patients for a mean of 16.0 years (range 1 month to 35 years). Most patients were able to breathe adequately by day when sitting or standing, but needed assistance by rocking bed for 6-11 h when lying down for sleep. The rocking bed was well-tolerated, and associated with both symptomatic relief and amelioration of arterial blood gas abnormalities. Seventeen of these 43 patients discontinued its use, either because of discomfort (9) or increasing respiratory insufficiency (8). The rocking bed is a valuable adjunct in the management of the respiratory insufficiency associated with neuromuscular disease.

PMID: 7922294 [PubMed - indexed for MEDLINE]

## Reduction in Obstructive Breathing Events During Body Rocking: A Controlled Polygraphic Study in Preterm and Full-Term Infants

<http://pediatrics.aappublications.org/content/96/1/64.abstract>

1. [J. Groswasser](#),
2. [M. Sottiaux](#),
3. [E. Rebuffat](#),
4. [T. Simon](#),
5. [M. Vandeweyer](#),
6. [I. Kelmanson](#),
7. [D. Blum](#),
8. [A. Kahn](#)

± Author Affiliations

1. *Pediatric Sleep Unit, University Children's Hospital, Free University of Brussels, Belgium*

### Abstract

*Objective.* To investigate the effect of body rocking on infant respiratory behavior during sleep.

*Methods.* Eighteen infants with documented obstructive sleep apneas were studied. There were eight premature infants with persistent bradycardias and 10 infants born full-term, admitted after an idiopathic apparent life-threatening event. No cause for the obstructive apneas was found. The infants were recorded with polygraphic techniques during two successive nights. They were randomly assigned to a rocking or a nonrocking mattress. The conditions were reversed the following night, in a crossover design.

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*Results.* In both groups of infants, no significant difference was seen between the two consecutive nights for most of the variables studied: total sleep time, the proportion of non-rapid-eye-movement and rapid-eye-movement sleep, the number of arousals, the number and maximal duration of central apneas, the frequency of periodic breathing, the level of oxygen saturation, and heart rate. During the nonrocking nights, all infants had repeated obstructive breathing events. In seven of the eight preterm infants and in nine of the 10 full-term subjects, body rocking was associated with a significant decrease in the frequency of obstructive events. During rocking, in the preterm infants the obstructions fell from a median of 2.5 to 1.8 episodes per hour ( $P = .034$ ). In the full-term infants, rocking reduced the obstructive events from a median of 1.5 obstructions per hour to 0.7 ( $P = .005$ ). No difference was seen for the duration of the obstructive episodes.

*Conclusion.* In preterm and full-term infants prone to obstructive sleep apneas, gentle side-to-side body rocking is associated with a significant decrease in the frequency of upper-airway obstructions.

- Received April 20, 1994.
- Accepted September 30, 1994.
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[Sleep](#). 1990 Dec;13(6):533-7.

### **Effects of otolithic vestibular stimulation on sleep.**

<http://www.ncbi.nlm.nih.gov/pubmed/2281251>

[Woodward S](#), [Tauber ES](#), [Spielmann AJ](#), [Thorpy MJ](#).

### **Source**

Department of Psychiatry, Wayne State University School of Medicine, Detroit, Michigan.

### **Abstract**

This study evaluated the effects of otolithic vestibular stimulation in the form of a linearly accelerated parallel swing on nighttime sleep parameters and daytime sleep tendency in eight normal subjects. The protocol consisted of one adaptation night following by two motion nights, one adaptation night followed by two stationary nights, and two Multiple Sleep Latency Tests (MSLT), one motion and one stationary. On the motion nights, there was a decrease in stage 2 percentage as well as a facilitative effect on sleep latency on the last night. In addition, an increase in the number of rapid eye movements (REMs) per night was found without a significant alteration of REM sleep amount or latency. No significant differences were found between the motion and stationary MSLT days.

PMID:

2281251

[PubMed - indexed for MEDLINE]

[J Clin Sleep Med](#). 2010 Aug 15;6(4):315-21.

### **The effect of vestibular stimulation in a four-hour sleep phase advance model of transient insomnia.**

<http://www.ncbi.nlm.nih.gov/pubmed/20726278>

### **Note: elec stim, unclear results.**

[Krystal AD](#), [Zammit GK](#), [Wyatt JK](#), [Quan SF](#), [Edinger JD](#), [White DP](#), [Chiacchierini RP](#), [Malhotra A](#).

### **Source**

Duke University School of Medicine, Durham, NC 27710, USA. kryst001@mc.duke.edu

## Abstract

### STUDY OBJECTIVES:

To determine if vestibular stimulation is an effective therapy for transient insomnia in a sleep phase advance model.

### DESIGN:

Multi-site, double-blind, randomized, parallel-group, sham-controlled trial

### SETTING:

This study was carried out at 6 sites in the United States.

### PARTICIPANTS:

198 healthy normal sleepers.

### INTERVENTIONS:

Bilateral electrical stimulation of the vestibular apparatus of the inner ear via electrodes on the skin of the mastoid process at a frequency of 0.5 Hz vs. sham stimulation.

### RESULTS:

We did not find a significant effect of treatment on our primary outcome variable, latency to persistent sleep onset (LPS). However, our planned analysis identified that the mean latency to sleep onset on the multiple sleep latency test was a significant covariate. This led us to carry out post hoc analyses, which showed a significant effect of treatment on LPS in those subjects with a mean MSLT sleep onset latency  $\geq$  14 minutes.

### CONCLUSIONS:

Vestibular stimulation did not have a therapeutic effect in a model of transient insomnia in the overall population studied. However, this study provides preliminary evidence that vestibular stimulation may shorten sleep onset latency compared with sham therapy in the subset of subjects with mean MSLT sleep onset latency  $\geq$  14 minutes.

### PMID:

20726278

[PubMed - indexed for MEDLINE]

PMCID: PMC2919660

Free PMC Article

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## Extending the functional cerebral systems theory of emotion to the vestibular modality: a systematic and integrative approach.

<http://www.ncbi.nlm.nih.gov/pubmed/19254081> unclear - must read.

[Carmona JE](#), [Holland AK](#), [Harrison DW](#).

## Source

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, USA.  
jcarmona@vt.edu

## Abstract

Throughout history, vestibular and emotional dysregulation have often manifested together in clinical settings, with little consideration that they may have a common basis. Regarding vestibular mechanisms, the role of brainstem and cerebellar structures has been emphasized in the neurological literature, whereas emotion processing in the cerebral hemispheres has been the focus in psychology. A conceptual model is proposed that links research in the 2 disparate fields by means of a functional cerebral systems framework. The claim is that frontal regions exert regulatory control over posterior systems for sensation and autonomic functions in a dense, interconnected network. Impairment at levels within the system is expected to influence vestibular and cognitive processes depending on the extent of frontal regulatory capacity. M. Kinsbourne's (1980) shared cerebral space model specifies the conditions under which dysfunction of the vestibular modality will influence higher cognitive levels. A position on laterality and associative relations within the right hemisphere is proposed to explain links among dizziness, nausea, and negative emotion.

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PMID:

19254081

[PubMed - indexed for MEDLINE]