EBIA
european bedding industries' association

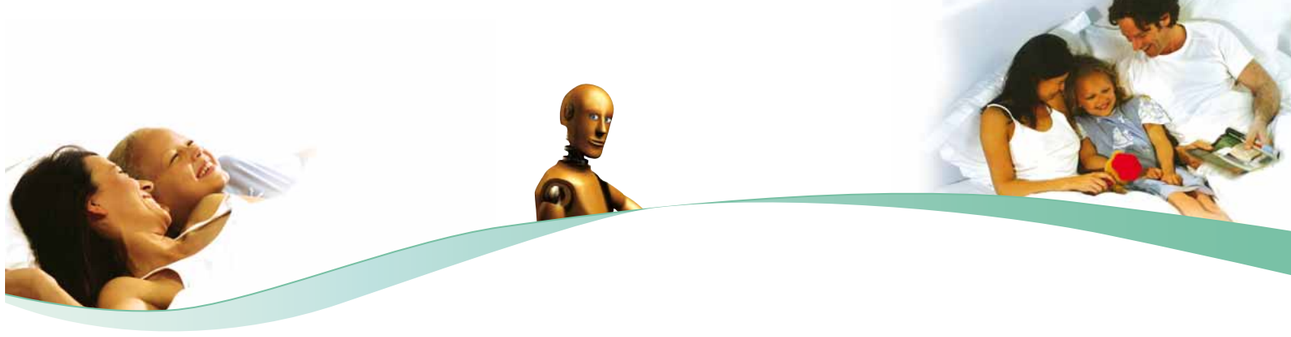
Essence of Scientific Truth About Sleep

Experts Speak

2008







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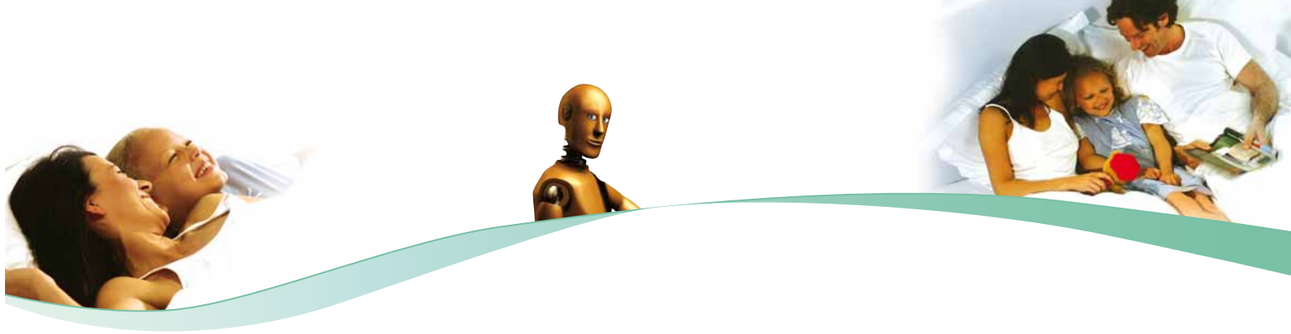


Introduction

SOME SCIENTIFIC TRUTHS ABOUT SLEEP: THE FINDINGS OF FIVE INTERNATIONAL RESEARCHERS

We spend one third of our lives asleep. But worldwide, every night, millions of people find themselves affected by a lack of sleep, making it one of the most frequent health problems of today's society. Bedding, especially qualitative bedding, can have a huge impact on this phenomenon.

The bedding business is not just about selling bed bases and mattresses. It is primarily about providing the consumer a good night's rest. And that is a tremendous challenge, for the good health and well-being of any person is driven by sound sleep. People who suffer from sleep deficiency will find that this interferes with their life, whether physically (back pain, etc.) or mentally (higher stress, reduced work productivity, concentration issues, mood swings, etc.). Often the result is reduced work productivity, chronic absenteeism and, in a worst case scenario, even accidents.

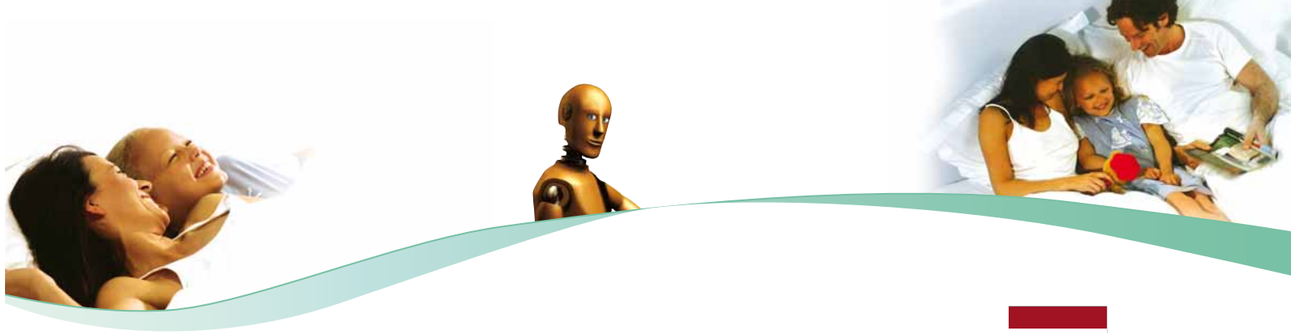
It is clear that, next to a lot of other factors and circumstances that play a major role in ensuring the vital sleep, a good and high quality bedding system is an absolute prerequisite to achieving a wholesome and effective sleeping comfort. However, there is still a lot that even the bedding business needs to learn about the intriguing functioning of sleep. It is therefore that EBIA, the European Bedding Industries' Association, sees it as one of its major tasks to encourage, sponsor and engage in various research and study projects that can improve our insights into the process of sleep.

In a world where the consumer is being bombarded with too many incorrect, often too commercial and occasionally conflicting messages, EBIA honestly strives to provide the consumer with correct, relevant and useful information.

To that extent, this press kit brings you extracts of major research studies and the recent findings and opinions of the world's most renowned experts in this field.

A small but contributory step to achieving this goal.

Frank Verschuere
EBIA President



1. Professor Anton Coenen: Uncovering the relationship between sleep and memory tracing

Professor Coenen works at the University of Nijmegen, the Netherlands, where he teaches Biological Psychology in the university's Department of Psychology. He holds a PhD in biology with a dissertation on 'The relation between input and output of single units of cat optic tract and lateral geniculate nucleus'. He subsequently specialised in anaesthetics and undertook extensive medical research concerning animals. Eventually, his focus shifted to humans, and the different sleep phases of humans. He is currently working on trying to uncover the relationship between sleep and memory tracing.

Anton Coenen frequently serves as a lecturer on sleeping issues by various organisations and institutions. He also works as a consultant for a Dutch pillow manufacturer, providing a Monday morning lecture on sleep theory for salesmen; he also advises mattress manufacturers and the national bedding federation. He was the first recipient of the EBIA (European Bedding Industry Association) award for research into the topic of sleep.

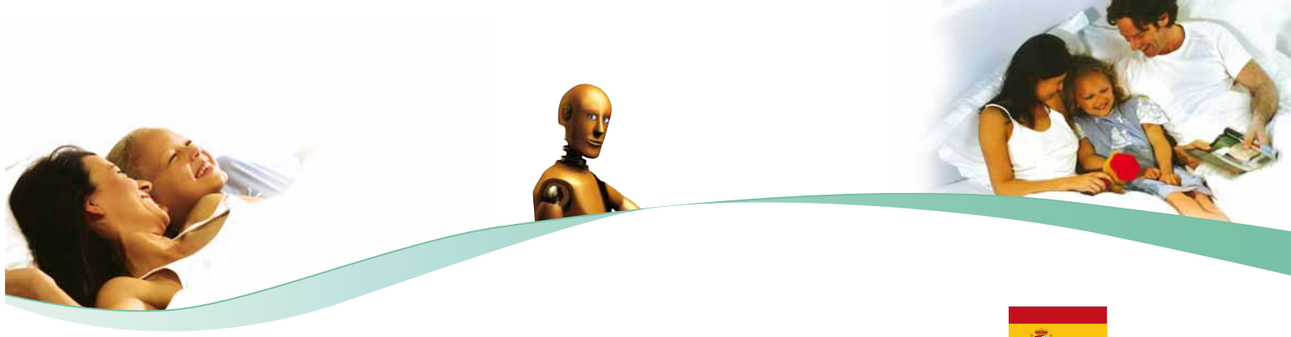
Professor Coenen has published a huge number of scientific papers (more than 300) and a number of books, among which the first monograph on sleep in The Netherlands (In Morpheus' Armen). Other relevant papers are 'The sleep and the bed', a report on pillows, and a report on aircraft noises and nightly awakenings. Moreover, he is often consulted as an expert in sleep-related problems by reporters of national newspapers and magazines, as well as radio and television.

Research into memory tracing

The scientific research of Professor Coenen delves into the state of the brain in relation to cognitive processes and information processing, in particular the role of vigilance in learning and memory processes.

His work explores the two major theories about memory tracing. One has to do with the fact that our memory storage is multi-layered and the quality of memory tracing is related to the moment of the day or the night. The other theory relates to the famous REM-sleep stages, which asserts that the active memory storage mechanism takes place during rapid eye movement sleep. What we know for sure is that the deep sleep, in the beginning of the night, is of life importance. The more sleep we get, the longer our REM-intervals last. The theory of the REM-sleep as the major memory restorer is gaining ground recently.

An important issue in Professor Coenen's research is the 'transfer ratio', the amount of incoming information in sleep-wake states. The concept of the 'transfer ratio' also called 'sensory gating' is considered a breakthrough in sleep research and is part of the classic literature. This concept includes the reduction of information taking up in sleep, which is due to an active closure of the pathways in the brain during sleep.



2. Dr Eduard Estivill: Helping children (and their parents) sleep better

Eduard Estivill received his medical degree from the University of Barcelona, and subsequently went on to train in sleep medicine at the Henry Ford Hospital, Sleep Disorders Unit, in Detroit (MI), USA. He worked as a consultant physician in the Sleep and Chronobiology Laboratory at the Santa Creu y Sant Pau Hospital, Barcelona; the center for Biological Research into Fetal and Neonatal Development, Port-Royal, Paris and the Sleep Disorders Center of the Henry Ford Hospital, Detroit (MI), USA.

He specialised in pediatrics, neurophysiology and sleep medicine. He is especially known for his books on sleep disorders and the bestseller, «5 days to a perfect night's sleep for your children".

He is a member of professional societies and organizations including the American Sleep Disorders Association, the European Sleep Research Society, the Latin American Sleep Society and the French EEG and Clinical Neurophysiology Society.

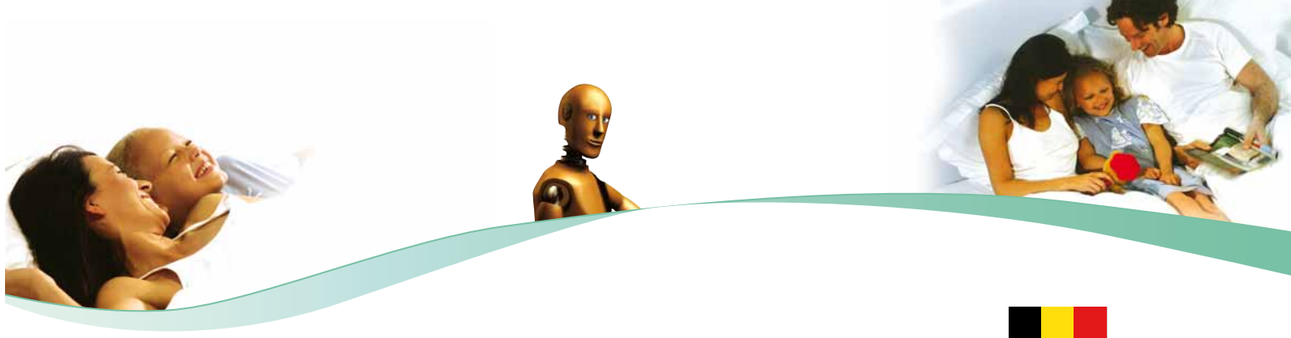
A good routine is the first step on the road to a full night's sleep

Dr Estivill has been studying childhood insomnia for more than 11 years now.

Sleep disorders affect at least 30% of the children's population aged between 6 months and 5 years.
In adults, the causes of insomnia are varied, including illness, sleep apnea, snoring, depression, anxiety, etc. In children, insomnia can largely be attributed to the wrong habits. Sleep patterns and sleep issues in children are not only influenced by a large number of biological and psychological factors, but also by cultural and social factors.

Based on his research, Dr Estivill developed a method, known as the Estivill method: a simple set of rules that is easy to apply for anyone who chooses to use it. Preparation, sleep cues, a proper schedule for mother and baby and a firm confident attitude of the parents are essential to be successful.

Dr Estivill also provides parents with a number of techniques for teaching a child to sleep well starting from day 1. These include ensuring that an infant remains awake during and after feeds (digestion), and creating an environment with elements that a baby will associate with sleep.



3. Dr Raymond Cluydts: Studies the effects of sleep deprivation

Belgian researcher Dr. Raymond Cluydts is a prominent researcher in the field of fundamental sleep research. Doctor Cluydts specialized in sleep science at the University of San Diego, which is famous for its research on behalf of the US Navy.

Dr Cluydts is currently leading the Centre of Experimental Sleep Research at the Brussels University (VUB); he is also a co-founder of the Centre for Clinical Sleep Research at the University in Antwerp and teaches biological psychology at the VUB University in Brussels.

Dr Cluydts specializes in fundamental research on healthy people and epidemiological investigation of sleep disorders. He is mainly interested in the effect of sleep deprivation and is often asked to share his findings with the car and the pharmaceutical industry.

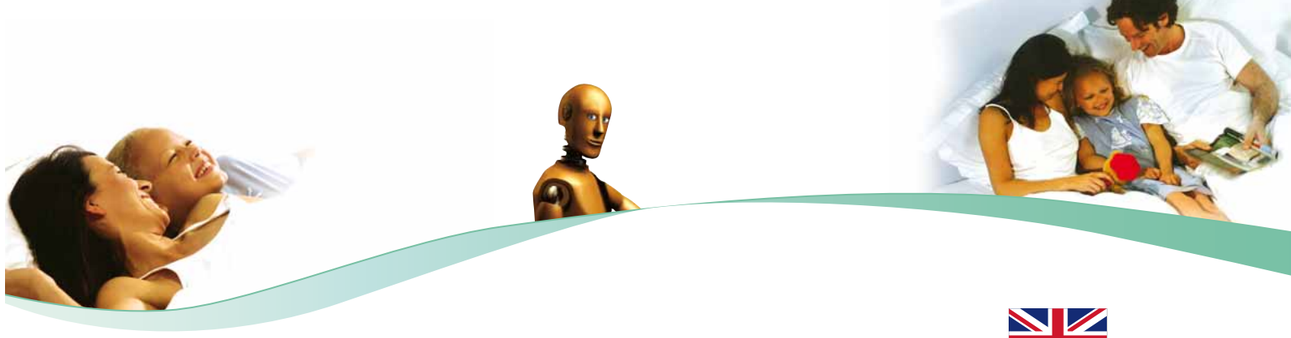
Doctor Cluydts mainly researches the sleep/wake rhythm ('cercadanian' and 'homeostatical' rythm) of healthy people, mostly students who receive a small fee for being a volunteer in the sleeping lab. He observes REM sleep, brain activity, breathing and audiovisual perception, during different sleep phases.

By inducing insomnia, he tries to find out what are the possible consequences of sleep deprivation. "By bringing about insomnia, test subjects feel sleepy during the day and become moody. Some forms of depressions are caused by disturbed sleep or sleep deprivation", says Cluydts. "Other areas of my activity have to do with epidemiological sleep disorders, how people become sleepy during the day, how sleep deprivation leads to cognitive distortions (memory and attention problems) and how this results in mood swings of different levels, from feeling irritable to being depressed due to a lack of sleep".
Raymond Cluydts also tries to help people with severe sleeping problems. This therapy can be pharmaceutical or behavioural. He investigates people's sleep environment as regards the quality and quantity of sleep: impact of light, noise, temperature and humidity.

Accidents as a result of a lack of sleep

" A lot of accidents are caused by sleep deprivation", says Dr. Raymond Cluydts. "That is why insurance companies are becoming more aware of the importance of sleep. In the USA and Australia, it is very common for insurance companies to rely on the findings of sleep research departments of universities to make their point. It has been proven that the disaster with the Herald of Free Enterprise in the North Sea was caused by somebody who forgot to shut the ship doors, as a result of a lack of sleep. In the past, they used to have 24-hour guard systems in the army. I can tell you at what exact moment you can pass along the guards, without being noticed."

" Bad sleep or a lack of sleep can lead to grave errors or a person's attention being badly disturbed. Recently, in Belgium, there was a case of a woman who forgot to put off her baby at the day-care facility. In the evening she returned to pick up her child, only to find that she had never dropped it off. The baby was found dead in its car seat, dehydrated. These types of accidents are typical for people who suffer from sleep deprivation."



4. Dr Chris Idzikowski: The effects of a new bed on sleep

Dr Chris Idzikowski has been involved in sleep research and medicine for more than 20 years. He originally worked with Professor Ian Oswald in Edinburgh on the restorative hypothesis of sleep. Subsequently, he went on to Cambridge to study anxiety and fear, and then to the Janssen Research Foundation, Oxfordshire where he ran, at its time, the UK's largest sleep laboratory. This work led to his book: Serotonin, Sleep and Mental Disorder (1991).

He is a member of the US Sleep Research Society and the European Sleep Research Society, is the former chairman of the British Sleep Society, board member of the US Sleep Medicine Foundation, a member of the clinical and educational sub-committees of the European Sleep Research Society and runs the Sleep Assessment and Advisory Service which provides support for general practitioners and primary care physicians both in the UK, Ireland and Europe. He set up a working group of patient self-help groups so that these groups could exchange information.

Over the years he has researched into many drugs, hypnotics, antidepressants, and antipsychotics, aromatherapy, and has looked at disturbed sleep in insomniacs, dementia, chronic fatigue syndrome (M.E), cancer patients, AIDS, depression and many other areas. His professional background of clinical pharmacology and psychology provides him with a unique insight into sleep and its disorders.

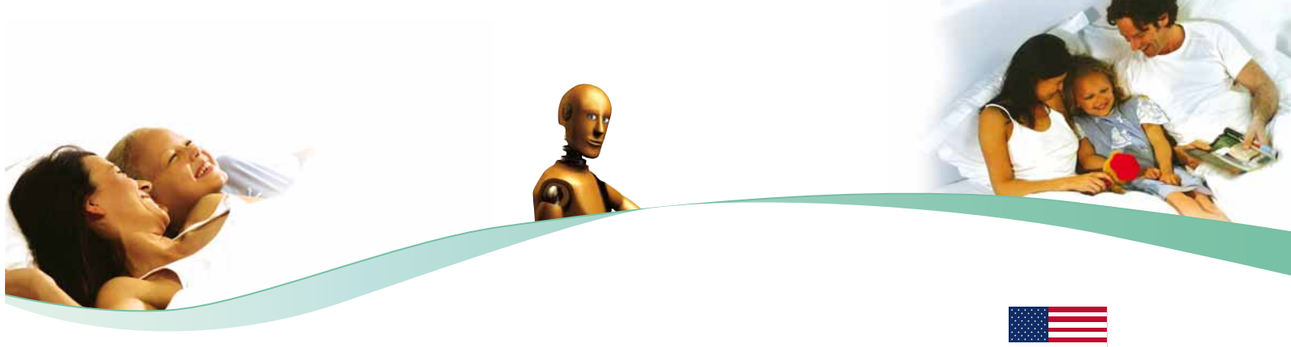
The effects of a new bed on sleep

Sleep surfaces vary across but not within cultures. The bed and mattress combination is common in the UK. A study by Dr Idzikowski investigated the effects on sleep of sleeping in a new bed at home.

Volunteers were asked to participate in the study after they had purchased a new bed. For a small fee they were required to wear an ActiWatch (actigraph) for two 24-hour periods on their old bed, two 24-hour periods when their new bed first arrived and for two 24-hour periods three weeks later. Volunteers were also required to complete a comprehensive diary and sleep & health status questionnaire.

After three weeks, people sleeping in their own homes were found to sleep longer on their new beds. People sleeping in an uncomfortable bed slept about one hour less than those not complaining. Subjects aged between 30-48 years old slept more than 30 minutes longer in their new beds. Over-the-counter sleeping pills and herbal remedies have less of an effect.

The conclusion was that a new bed, particularly for anyone sleeping on an uncomfortable bed, has a profound effect on sleep duration. It is likely that long-term insomniacs, particularly the conditioned insomniacs and those with inadequate sleep hygiene would benefit most.



5. Dr Bert Jacobson: Timely replacement and quality of mattress have a solid impact on sleep

Dr. Bert Jacobson joined the Oklahoma State University faculty in 1986. He has served as professor, as Health and Human Performance Program Coordinator, and as Coordinator of Research and Graduate Studies while at OSU. He has also been a member of the Institutional Review Board, the Termination Hearing Board, and has chaired the Academic Appeals Board. Prior to joining the OSU faculty, he served as an assistant football coach and strength-and-conditioning coordinator for the Athletic Department as OSU. He is currently the Head of the School of Educational Studies in the College.

Dr. Jacobson is a Fellow of the American College of Sports Medicine and has published well over 100 refereed research articles and abstracts and has an equal number of peer reviewed presentations. Dr. Jacobson holds an Ed.D. from Oklahoma State University in Health, Physical Education & Recreation, an M.Ed. from Northwestern State University and a B.S. degree from Oklahoma State University.

When mattress quality starts to make a difference

“ Grouped comparisons of sleep quality for new and personal bedding systems” provides solid scientific evidence of the critical link between health and sleep benefits and mattress quality, and underscores the importance of a regular assessment of one’s mattress. Improvements from pre- to post-test in specific variables were reported by significant percentages of study participants. These included reduced back pain (62.8%), shoulder pain (62.4%), and back stiffness (58.4%) as well as improved sleep quality (64.4%) and sleep comfort (69.6%).

“ Our work showed that new mattresses have a considerable impact on reduced back pain and improved sleep quality, among other benefits,” said Bert Jacobson, EdD, and lead researcher at Oklahoma State University. “Based on our research, there is no question that a new mattress can sustain these benefits for just about anyone, regardless of age, weight or gender.”

This latest study represents fresh analysis of work published by the Journal of Chiropractic Medicine in 2006. Conclusions are based on findings from a control group of 59 healthy participants who contrasted their sleep on their own mattresses (at least five years old or older) to their sleep on a new bedding system. The study also reported that back pain was more prominent in participants originally sleeping on the cheapest category of beds than in those sleeping on moderately or higher priced beds.

“ As concluded by both this and previous studies, mattresses have a life expectancy related to sleep comfort and quality,” Jacobson said. “Timely replacement and mattress quality can have a very positive impact on sleep and overall quality of life.”