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Energising Inhaled Air

A new method of treating sleep disorders

# Energising Inhaled Air

## A new method of treating sleep disorders

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*Sleep disorders are a common symptom. About 10 percent of the total population suffer from chronic insomnia and around 50 percent of the over 60s complain to their doctor about sleeping badly and not feeling refreshed on waking. 50 percent of all Austrians do not feel fully functional or wide awake when they get up, with two thirds not waking of their own accord but being woken by an alarm clock. This also applies particularly to young people, as clearly shown by the fact that 62 percent of 15 to 20 year olds awoken by mobile phones are also at their grumpiest in the mornings.*

Scientific thinking tends to reject any connection between daily activity levels and the need for sleep. The time spent sleeping appears to be less important than the quality of sleep. The time spent in deep sleep declines with increasing age, as do the REM or dream stages, which are important for cerebral regeneration.

### Definition

Sleep disorders group together disruptions to the sleep process which affect the ability to fall asleep and/or to sleep through, result in excessive sleep or take the form of abnormal sleep behaviour.

Four different categories can be distinguished:

1. **Insomnia:** difficulty in falling asleep/ sleeping through or disturbed sleep patterns which lead to sleep deficit.
2. **Hypersomnia:** time spent sleeping increases abnormally by at least 25 percent.
3. **Sleep apnoea:** a group of disorders in which the person stops breathing while asleep for at

least 10 secs usually more than 20 times per hour.

4. **Parasomnia:** a group of disorders in which (temporary) dysfunction of the cerebral cortex occurs, often due to lack of oxygen or following alcohol consumption (sleep-walking, night terrors, nightmares, leg cramp, restless leg syndrome).

### Physiology of sleep

Man's latent vitality is subject to periodic fluctuations. Functional capacity is generally greatest in the early part of the morning and the late afternoon, while an initial drop in performance occurs around midday with a second more marked drop after midnight. This second drop in performance in particular is generally not noticed since the person is asleep and recuperative processes restore functional capacity during this phase. The central nervous system is responsible here for inducing sleep and maintaining it for sufficient time (depending on the individual) until regeneration is complete. Sleep is therefore a vital active process during which regenerative and restorative actions take place in virtually every organ.

The brain's receptivity sinks as the body falls asleep. Consciousness fades and contact to the outside world largely stops. Only "key stimuli" are still perceived. Many bodily functions alter their functional state as the body falls asleep. Muscle tone declines while at the same time synchronous neuronal discharges often cause generalised muscular twitching. The parasympathetic nervous system dominates and recuperative processes are aided. The heart

rate drops as does arterial blood pressure, breathing becomes slow and deep, at times even irregular. The reduced impulse to breathe leads to a rise in CO<sub>2</sub> partial pressure. Despite the dominating impulse of the parasympathetic nervous system, the motor system and secretion in the gastro-intestinal tract and tonus of the urinary bladder are reduced.

As sleep becomes deeper the neuronal activity of the brain alters, as indicated by electroencephalograms (EEG). During the orthodox sleep phase sleep deepens from stage 1 (process of falling asleep) through stage 2 (light sleep) and stage 3 (moderate depth) to stage 4 (deep sleep). In the paradoxical phase sleep is certainly particularly deep yet the EEG equates to the waking state. In these stages of sleep muscle tone is completely absent, interrupted by violent twitching especially of the facial muscles (rapid eye movement (REM phase) in contrast to the NREM (non-REM) phase of orthodox sleep). Paradoxical sleep leads to further physical reactions such as raised heart rate and blood pressure, penile erection, normalising of the cerebral blood flow after a drop in the NREM phase and dreaming).

"Healthy sleep" generally produces 3 to 5 NREM cycles each lasting between 1.5 and 2 hours. Maximum depth of sleep decreases with each cycle while the REM phases accumulate until the person wakes. The time spent asleep, especially in deep sleep phases, usually declines with increasing age. Six hours' sleep is usually sufficient for older people with often less than 30 minutes of this in deep sleep, while the time spent in REM sleep drops especially in early childhood, evidence of its significance for creating the necessary bio-

electrical activity patterns for ontogenetic development.

The mechanisms which periodically determine sleep have been systematically researched and largely explained in recent years. The reticular formation, a central part of the brain stem which runs from the midbrain to the medulla oblongata, is not only involved in motor control functions and complicated coordinated movement, in pain perception, in regulating breathing, heart rate and blood pressure, it also contains the centres for consciousness, alertness and sleep. Its large cells with their widely ramified branches control the sleep cycle and play a crucial part in regulating the sleeping-waking rhythm. Its metabolism is high, in line with its activity level, and its associated ATP requirement is characterised by a high oxygen supply and utilisation. The raphe nuclei, in particular, produce serotonin, locus coeruleus noradrenaline, whose release may determine orthodox and paradoxical sleep phases according to experiments on animals.

In addition, certain neurons (nucleus of the tractus solitarius) which inhibit the activation system ascending from the peripheral tissues (ARAS) and thereby reduce the level of wakefulness are involved in NREM sleep. Additional regions of the brain which are relevant to sleep are found in the basal forebrain and in the hypothalamus.

The suprachiasmatic nuclei (nuclei cranial of the optic chiasma), which cause spontaneous sleeping and waking at adequate times without themselves influencing the period of sleep, are particularly important for the sleeping-waking rhythm. In addition they influence water intake, body temperature, reproductive behaviour as well as the activity of the pineal gland, the production site of melatonin. They generate a synchronised (circadian) rhythm which equates to approximately 24 hours and

operates as an endogenous oscillator. This should be distinguished from external time indicators such as eating, drinking and working rhythms, light conditions and habits. Under certain conditions (e.g. flights with a time difference) the various time indicators may drift apart causing numerous different temporary physical and psychomental problems (jet lag).

## Aetiology - pathogenesis

Insomnia in particular, the most frequent sleep disorder, generally represents a primary essential problem, i.e. it exists for a long time without any identifiable connection to acute physical or psychological problems. It can however occur as a secondary condition in persons under severe mental stress, in pain,

energy supply which can also be caused by electrolyte disturbance, acid overload and electromagnetic imbalance (organic diseases, stress, effect of drugs/medication).

## Clinical features

Problems falling asleep are frequently characterised by emotional sensations such as anxiety and depression, pain, respiratory problems, irregular bedtimes, taking or withdrawing from medication as well as restless leg symptoms, sleep apnoea and shift in the sleeping-waking rhythm. The falling asleep phase is usually not affected in persons who wake early in the morning. They wake up early however and are unable to get back to sleep again or they fall into a very restless sleep until rising which is not recuperative from a



## Case study

Mrs R.H., aged 61, stewardess, unable to work for 21 years; unspecified illness in Mexico in 1983 when aged 39, has suffered sleep disorder since then; not been able to sleep through for a number of years, problems concentrating, extensive loss of memory; can only spend 15 minutes maximum shopping, then she has to lie down through exhaustion, sometimes even in shops or on the street; getting up in the morning is an ordeal.

Following extensive investigations, at times under clinical conditions, chronic fatigue syndrome was diagnosed. The cause was assumed to be melatonin deficiency particularly affecting the suprarenal glands too.

Since administration of energised inhaled air (Airnergy), at times also while being clinically monitored, almost unbelievable improvement observed following 20 minutes application twice each day.

Above all Mrs R.H. is now able to sleep. She falls asleep more quickly, gets back to sleep quickly after waking during the night and sleeps much more deeply, usually for 6 hours uninterrupted. She has regained her former strength and feels like a "normal" person once more.

with physical disorders, those taking or withdrawing from drugs, especially alcohol and as a side-effect of medicinal treatment. Since the sleeping-waking rhythm is so complex to regulate, disruptions to this rhythm can take many varied forms (post-traumatic conflict which has not been emotionally resolved, pain, irregular routine, extreme physical stress, strong emotions, medication, drug abuse, jet lag and cerebrovascular failure).

Circulatory disturbances in the brain, especially of the reticular formation, occur primarily in the elderly or sick. This results in delayed, diminished or inoperative sleeping-waking autoregulation in the vagotonic night phase. Whether the cause lies in reduced oxygen level in the blood, diminished cardiac output, cardiac dysrhythmia, athero/arteriosclerosis of the arteries supplying the brain or disruption to oxygen utilisation in the cell is ultimately of little importance to the affected brain cells. What is crucial is insufficient ATP generation in the mitochondria and the resulting inadequate

subjective viewpoint. This sleep pattern is generally restricted to the elderly and/or the depressive. The symptoms are intensified by feelings of anxiety and self accusation. Reversal of the sleeping-waking rhythm indicates underlying disruption of the circadian rhythm, for example with jet lag or with dysfunction of the hypothalamus (brain trauma, encephalitis), misuse of medication or the consequences of shift work.

Sleep apnoea can also trigger such reversal (sleepiness in the mornings through to afternoons, irregular interrupted sleep phases at night).

## General therapy

With a condition as complex as sleep disorder it is only an "accidental" stroke of luck if monocausal treatment is successful. As a rule "polypragmasy" is required whereby naturopathic and psychotherapeutic methods should be the first priority. Exceptions to this are organically conditioned and psychotic



sleep disorders which require specific therapy and also respond well to such treatment.

Chronohygiene could represent an initial step to regulating the sleeping-waking rhythm. A regular lifestyle that includes eating at set times, maintaining the same sleep and work and relaxation times also helps in many cases. Harmonising the person's surroundings represents a second possible step. Strange surroundings, unaccustomed noises, heat, TV in bed and light are definitely not conducive to

opportunities for overcoming stressful conflicts, especially unresolved dreams and about individual differences as regards sleep required and sleep duration and analysis of sleep disorders.

The optimal circadian rhythm for the particular individual has been disrupted and must be restored. It is important for the person to live in the present (here and now) and not constantly be thinking all day about (the lack of) sleep and during the night about how tired

A new method (energising the inhaled air) has been used very successfully for a number of years with sleep disorders.

### How energised inhaled air (Airnergy) operates with sleep disorders

The body's cells all rely on a constant supply of oxygen. This applies especially to the brain cells which need oxygen to produce energy to maintain and control all the vital functions which are, without exception, regulated by the brain. This requires the right amount of oxygen at the right time in the right place. It is not just the absolute quantity of oxygen supplied which is important but also its distribution throughout the entire body and its utilisation.

At night (dominating vagotonus) and when lying down (protective/recuperative phase) the amount of oxygen offered to the brain cells may drop in the elderly in particular, especially if organic vascular damage and reduced cardiac ejection output have already led to a fall in the oxygen supply. This appears in many cases to be the reason for dysfunction of the brain stem (centre for heart rate, blood pressure and respiratory regulation, centre for sleeping-waking rhythm).

The development of Airnergy was partly inspired by the discovery that oxygen contained in the inhaled air is present in the relatively inert, non-reactive molecular form and therefore its reactivity (exchange process with tissue) must be increased by short term activation. In Airnergy this takes place through the production of singlet oxygen, a stimulated but non-radicalised form.

This active state lasts only fractions of seconds. The activated oxygen reverts to its original (normal) state even before the air is inhaled. As a result the energy previously absorbed is released again and given off to the surrounding water through which the inhaled air is directed. Inhaling atmospheric oxygen also supplies the respiratory tract with energised water due to the inhaled air being saturated with water vapour and this leads to the desired improved oxygen utilisation. Two underlying biochemical reactions in the cells have so far been detected through this energy transfer. Others are currently being systematically analysed.

Consequently there is an increase in 2,3-diphosphoglycerate (2,3-DPG), an important catalyst of the intermolecular phosphate group make-up in the conversion of 3-PG into 2-PG as part of glycolysis, anaerobic energy production. The concentration of 2,3-DPG is generally low. Airnergy can be seen to increase it significantly. As a result 3-PG can be transformed more quickly into 2-PG, as can the transition from 1,3-DPG into 3-PG with, at the same time, increased production of ATP especially in erythrocytes with the result that the oxygen binding curve is shifted to the right.



sleep. Psychoreactive disruptions should be eliminated, such as particularly stressful conflicts like sorrow, worry, feelings of guilt and anxiety. Counselling by specially trained staff helps in these cases. Anticipatory anxiety and abnormal behaviour, if they persist for some time, also require psychotherapeutic treatment. If children suffer from sleep disorders, the parents frequently require counselling.

Psychovegetative disorders occur frequently especially with increasing age, often in connection with onsetting or manifest cerebral failure. Disturbed vasomotor regulation or relevant circulatory disturbances with an organic background play an important part here. Measures to stimulate the blood flow, medication and intracellular improvement of oxygen utilisation by energising the inhaled air could help here.

Recommended individual measures for treating such disorders include discussions about physiological and pathophysiological aspects of sleep, about reasons for insomnia,

they will be the next day. Waking periods at night could also be interpreted positively, without getting annoyed. In the morning the person should wake quickly and determinedly, similar to the way autogenic training sessions are ended by getting the muscles working. Spending time on a hobby in the hour prior to going to sleep and reducing the lunchtime nap (not relaxing while lying down) are additional ways of inducing sleep.

The Kneipp form of hydrotherapy offers additional options such as applying water before going to bed or when waking up during the night (washing the lower extremities with cold water), altering the diet (no heavy meals which are difficult to digest in the evenings, limited or no alcohol), breathing exercises (exhaling deeply and slowly to activate the vagus), relaxation methods (autogenic training, Jacobson, yoga or even acupuncture).

If all these methods do not bring about the desired effect, phytotherapy offers further options but "Mite" preparations should not be taken for prolonged periods due to the danger of addiction.

This increases the pO<sub>2</sub>, at the same O<sub>2</sub> saturation or, at lower O<sub>2</sub> saturation, the pO<sub>2</sub> remains constant and so increased oxygen is given off into the atmosphere, equivalent to increased utilisation of oxygen, which also manifests itself in a rise in AVDO<sub>2</sub>.

Not only do the mitochondria, the cell's powerhouse, receive more oxygen through increased oxygen release from the erythrocytes, more ATP is produced by the same mechanism as in the erythrocytes (2,3-DPG). As a result they can operate more actively, i.e. provide more energy for the various functions of the body.

A second proven effect of Airnergy on the biochemical processes in the body relates to the activity of NADPH oxidase, which mainly generates the production of superoxide anions (radicals) and whose activity is significantly reduced by Airnergy. The NAD<sup>+</sup>/NADH or the NADP<sup>+</sup>/NADPH system represents the most important electron transport chain in living cells, necessary for hydrogenase reactions in glycolysis, in the citric acid cycle and in fatty acid oxidation. NADPH oxidase is expressed to an increased extent with stress and illness, especially in the endothelial cells, smooth vascular muscle cells, fibroblasts and myocardial cells. This results in NO inactivation and a decrease in endothelium-dependent vasodilation. Airnergy prevents this effect by reducing NADPH oxidase production. In reverse, Airnergy leads to better circulation and increased local oxygen supply while at the same time reducing O<sub>2</sub> radicals.

Both processes can explain why sleep disorders improve when energised inhaled air is applied. A third mechanism has also been



observed but no results from scientific studies are available yet for this. It is known from Indian yoga teaching that energy can be absorbed from outside into the body through the nose (breathing) and the nerve endings in the upper wings of the nose are believed to act as "receptors" here. The energised inhaled air apparently then transfers its energy to nerves which transmit it directly into the brain centres, especially the vegetative control points, thus inducing the much described harmonisation processes in the vegetative, hormonal and immunological area.

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## Individual accounts

### 1. Racing, using Airnergy for 6 months:

The first noticeable improvements were sleeping better, needing less sleep and feeling better overall. Although I was aware that I was fit, the way my condition improved even more surprised me.

### 2. Chief editor, no particular medical condition, heavily stressed:

... under so much stress the whole day, both physical and mental, that I used sometimes to fall into bed completely worn out. Since using, I no longer feel exhausted like this, I feel much better. I can also concentrate much better during the day, sleep "more deeply", and consequently more healthily, at night and am able to use this new found energy to good effect during the day.

### 3. Sports reporter, no particular medical condition, heavily stressed:

... I'm able to concentrate better. At last I'm not just able to sleep 3 - 4 hours at a time, but 7 - 8 hours regularly. With the result that I am more motivated and in better shape for the jobs I've got to tackle during the day; I've become calmer and approach problems with a composure I've never had before.

### 4. Racing driver, no particular medical condition:

... able to compensate for low spirits from exertion and lack of sleep. I can cope with getting up early or during the night and with less than 5 hours sleep (due to 2 children) quite readily. I feel fresh and rested.

### 5. Business consultant, hay fever, no particular medical condition:

... as I sleep more soundly and peacefully through using the device and I need much less sleep than without it, I feel this is a very positive effect.

### 6. Scientific study (Prof.):

... 48 patients, user study, all patients' sleep disorders improved (problems falling asleep and sleeping through), increased mental lucidity. Particularly effective in patients with apoplexy and paresis as well as patients with previous cerebral haemorrhaging.

### 7. Office manager/ director's secretary, tremendous stress, no particular medical condition:

Before I began breathing therapy I felt flat as a pancake but after a certain time I became more alert, livelier and more active...admittedly I haven't enough energy to be a high flier but I'd suddenly become tired in the evenings and would sleep soundly and deeply and would wake up refreshed and rested.

### 8. No particular medical condition:

... overall state good to very good, no longer any depressive moods, recuperative deep sleep.

### 9. Dentist, stress, no particular medical condition:

... after the first few times when I was still sceptical, I was astonished at how little sleep I need to feel refreshed and fully functional. The first four nights I spent less than 3 hours in bed. Now, after a little time, I sleep much better and for a normal 6 to 8 hour period, at last I can now sleep through. I snore much less when I sleep, I now sleep much deeper and am not so easily disturbed by the slightest noise...also I hardly ever stop breathing (apnoea) now.

### 10. No particular medical condition:

... have more stamina, can sleep better at night and feel better.

### 11. Boeck's sarcoid, disease of the thyroid (?):

I was very ill, I had lost 10 kilos. I only slept for 2-3 hours at night, then the night was over for me. It's great, fantastic. Since I've been using the breathing therapy regularly, I no longer have an overactive thyroid, I don't need medication any more. My lungs are in good shape again. I can sleep through once more, it's incredible!... ..

### 12. Teacher, chronic fatigue syndrome (CFS), viral infection in nasal/palatal area, dysbiosis:

... easily exhausted by the slightest exertion, severely weakened immune system, sweated heavily at night, insomnia. First my recuperative capacity improved while I was asleep, I was able to sleep through until the alarm went off. My state of mind



quickly improved as well and my vitality increased.

**13. Businessman, stress, burn-out syndrome:**

... positive changes right from the first time I used the technique. after just a few minutes my body completely relaxed, I became calm and was able to switch off... although the circumstances surrounding my problem haven't changed and I'm not sleeping for any longer, I now wake up completely rested and full of energy. my energy reserves are restored much quicker and in a more focused manner. I'm able to concentrate better and maintain this concentration until late into the evening. I'm more resilient.

**14. Racing driver, accident:**

... serious aquaplaning accident at 235 km/h while on a test run. alongside physical care by the medical team, immediate psychological help was considered essential to process the experience but it was not taken up. in the difficult days after the accident slept relatively well after using the device in the evening..

**15. Health farm operator, aged 55, previous abdominal cancer surgery, intervertebral disk surgery, pelvic fracture, sudden loss of hearing with 80 % and 60 % loss:**

... after using for just 1 day more energy and better state of health and more well-

balanced, from 6th day slept deeper and longer, from 14th day hearing improved, from 40th day huge increase in functional capacity.

**16. Study/experiment: ...**

... 34 participants, no side effects, good acceptance and improvement in overall state of health, improvement in sleep disorders and healing promoted when used topically.

**17. Macular degeneration, heel spur, sleep apnoea:**

... days when I can see and read noticeably better, especially in the close or reading range, i.e. with fewer letter and number deficiency symptoms. sleep apnoea in the clinic's sleep lab. certifies. since using Airnergy no longer stop breathing when asleep. I feel fresh and recuperated when I wake up. My previous typical apnoea symptoms such as tiredness during the day, problems with short term memory, etc, are all now a thing of the past.

**18. TV actress, nicotine abuse: ...**

made giving up smoking much easier. ..fewer occurrences of disturbed sleep..

**19. Stroke, aged 77: .**

..sleep improved after a short time and, as a result, the patient's state of health.

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