

# *Falling Asleep*

## *Yoga, science and sleep*

*by Vigyanananda*

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Statistics show that 1/3<sup>rd</sup> of the population declare that they have difficulty falling asleep. For the past 50 years, the average time of sleep has decreased by 1 and a half hours. Western people, particularly the youth, endure a chronic lack of sleep. This is due to the release of the growth hormone, which tends to further delay their time of sleep. With an increase of the time spent awake in social habits, school and work, the invariable outcome is reduced time for sleep, as one is later to bed but still having an early rise.

Irregularity in the time to go to bed is a prominent disturbing factor. This has bad consequences, not only for youth falling asleep while driving and having serious accidents, but also for the damage to the cardiovascular system. There is a major increase in cardiovascular pathologies among the youth, and that is not only caused by an imbalanced nutrition due to the excessive intake of saturated fat, omega 6 in proportion with omega 3, and too much salt; there is also a lack of sleep as a causal factor. Such factors will cause the release of the intestinal fat C re-active protein and interleukin which has an inflammatory effect on the walls of the arteries and will increase the risk of cholesterol deposit and plaque. One who is deprived of sleep is at a higher risk for cancer. A Japanese study has shown that woman who sleep 8 hours at night decrease the risk of breast cancer by 28%, in comparison with those who slept only 7 hours a night. A British study has shown the one who sleeps six hours or less has a 12% higher chance of early death. Another study showed that the one which slept 5 hours or less increased 50% their risk of death by cardiovascular disease, type 2 diabetes, i.e. the adult diabetes, which is insulin dependent. For cardiovascular diseases, the pathology explained above begins to give a sufficient explanation. For diabetes, there is a stimulation of the pancreas by the vague nerve which fatigues the production of insulin. Further studies show that having regular sleep of 8 hours or more can aid in an integrative prevention and treatment of child obesity. More generally, according to the EEG records, 7 hours of sleep seems to be the average physiological sleep.

Here, we should also take into account a more specialized study: that of the experience of sleep in caves. Volunteers spent 3 weeks a month in a cave without a clock, which enabled them to decide when to sleep without any exterior facilitating factor. The rhythm of sleep that transpired is very interesting because it proved alternating bouts of short and long sleep. By short sleep, we mean 4 hours, and by long sleep, we mean 12 to 14 hours. The "days" were about normal, ie 12-15 hours of waking time. If we add the duration of sleep on two days, we obtain 16-18 hours which is 8 or 9 hours a day, this is quite sufficient. From these experiences, we can deduce quite practical advice; that during insomnia when one subsequently has badly slept for a night, it would behoove the person to combine the hours of sleep between 2 nights and if when added still amounts to 7 hours of sleep per night, this is normal.

A study has shown that people who work ten hours or more a day increase their chance of death by cardiovascular diseases by 60%. This is mainly attributed to the lack of sleep. After a long work day, most like to unwind socially and will undoubtedly take the time for this from their sleeping periods. All this results in a case of chronic sleep deprivation and the release of C re-active protein and interleukins by the abdomen fat.

One should also know that the brain records the depths of sleep. If the subjects are deprived, for instance, of half of their sleep during a fortnight, and then have limited sleep for 6 months, when they are able to sleep as they want they recuperate the quantity of sleep which they have been deprived of.

The one who sleeps much more than the average, for instance, 9 hours or more, are also susceptible to an earlier death. Here the causal factors are different. Excessive sleep may be the symptom of an underlying serious disease, and perhaps the beginning stages of cancer etc. It may also be the sign of depression. In this instance, there is a lack of motivation to get up in the morning. It is a known fact that depression can cause a decrease in immunity and can increase the risk of diseases, ie cancer, infections etc.; and in an even more obvious way, impedes the recovery of serious diseases, hence all and all contributing to the global mortality rate.

Let us come now to a Yoga method, little known in the west, which may help in falling asleep.

### **The yoga of the sides of the body and falling asleep**

We will speak of *svara yoga*, *svara* meaning the sound.

This comes from the observation that, generally speaking, one nostril is closed and that we mostly breathe by the use of the other nostril. There is dissymmetry between the sides. Not only does the perception of breath change, but also the sound passing through the nostrils. This is what the ENT specialist calls the alternating physiological rhinitis (nasal catarrh) of the nose. It is normal, that every other hour, there is a swelling of one of the vessels at the top of the nostrils and then a change of sides for the obstruction. Generally, most can feel a clear difference between the openness of either nostril. This difference becomes diminished even erased when one is active physically, when one speaks a lot, or when one feels a strong emotion. However, it inevitably comes back in a few minutes when one is again at rest. *Svara* means also the 'vowel of the heavens', so the *svara yoga* represents the state where one can perceive easily the sound of silence which is like a completely continuous vowel, and by this listening one can fully paralyze the mind. This elicits a new perspective and the possibility of experiencing intense happiness, and so "to be in the heavens"...

The practical explanation which I give below originates from certain texts of yoga like the *Svarodaya* ['The Dawn of Svara Yoga']. I have been helped by the edition puts on only commentaries, but if of Swami Satyananda, where he gives not only commentaries but presents the result of a group study on the alternating of nostrils with 80 people in his ashram. I also drew my conclusions from my personal experimentation, over the past ten years, on allowing "the brain to breathe". I have regularly communicated these practical results in seminars to groups numbering several thousand in all, and the feedback has been globally positive. Most people acknowledge that this method has helped them in finding sleep.

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During the beginning of sleep at night from 4 and a 1/2 hours-6 hours, the opening of the nostrils does not alternate. Often, it is a period during which people do not wake up. It is after this period that one might wake and go to the bathroom and must then try again to fall back asleep. In this occurrence, there is a simple law to understand: sleep for the brain is linked to the absence of change of sides, with the feeling that there is about five hours with a nostril open on the same side without movement; the brain directly links this to successful sleep. On the contrary, when we usually get up to start the day, there is an alternation of steps that provokes a quick change of sides, and the alternation of hands, ie we take the tooth brush with the right hand, and the glass with the left hand etc. Even the eye when we move must quickly go from left to right to evaluate and avoid obstacles. This basic law can be utilized for falling asleep, let us see now how.

Let us first and foremost notice, that practically speaking this method works better for those who sleep on their side. This is the case of the majority. However, it can still prove useful for those persons, particularly women, who like to sleep on their belly, where one cheek is on the bed and the other is oriented towards the ceiling, which can still be equated to sleep on one side. The one who sleeps on the back can simply concentrate on the sensation of the open nostril opening even more during breathing in, and that the closed nostril closes even more on the outgoing breathe. In this way, they will probably obtain equivalent results to the method when one is lying on one's side.

Practically speaking, let us take the example when the left nostril is fully open, and we choose, at the time of going to bed, to lie down on the right side. At this time, the right lung will be compressed against the mattress, while the left lung will naturally open without restriction. Out of reflex, the wider opening of the bronchial tubes on the left will correspond to a message of a greater opening for the left nostril. . So, there is no message of change of sides, and the brain will feel quiet because it does not perceive alternation and will then authorize a disconnection, in a sense will "close the light" and promote falling asleep. On the contrary, if we lie down on the left side, the right nostril which is closed will have the tendency to open, then, there will be a message of change of sides, which will be an obstacle to falling asleep. This represents the first law.

Now there is a second law, which is independent of the first law: when the left nostril is open, there is a calming affect and when the right nostril is open there is a stimulating affect. These observations were made by Yogis over the past millennium, and it is confirmed by neurology. We could wonder why at all this lateral distribution exists. Let us first understand there are two chronic lateralized sources of tensions in the body: one is permanent, the heart on the left of the chest, and the other is alternating every two hours, i.e., the closed nostril first. We could name these two sources "the two attractors", because the perception of tension there regularly attracts the subconscious physical attention. First, let us consider what happens if the closed nostril is on the left side: it adds to the sensation of the heart on the left, and intensifies the sensation of dissymmetry in the trunk as well as in the head, hence a tendency to be ill at ease, with a temptation to project this discomfort on others: this can be a causal factor of violence. This disposition, however, has a positive side also, one will feel more prone to action. When on the contrary it is the right nostril which is closed, there is a kind of balance in the body, between the tension on the right at the level of the sinuses and the face as well as on the left at the level of the chest, one feels more "pondered" and not only in the psychological sense, i.e., able to reflect better, but even in the physical sense, ie balanced

between right and left: In the positive aspect of this phenomena one will be more meditative, in the negative aspect, one will have tendency to feel guilt and to get enmeshed in one's own mental complications.

The third law which should be explained says the following: discomfort and suffering have a tendency to increase the sensation of tension on the side of the closed nostril, whatever it may be. This increased dissymmetry can spread from the level of the nostril to the face and head, and extend downwards to the level of the trunk. There is a tendency to the contraction of the para-vertebral muscles on the side of the closed nostril. Why it is so? Probably by a mechanism of regression in front of the difficulties met in outer life, which manifest as a need to escape into sleep. Let us detail the mechanism: the increased dissymmetry of the body leads to feel that one wants to come back to the fetal position. In it the baby during all his development until birth, is someone "mono-lateralized" in the sense that his brain is connected to placenta on one side only, and this is so for a long period of time. Both the baby and the sleeping adult feel "one-sided", hence the link between the two situations, and the tendency of psychological regression towards being also one-sided.

By the way, some researchers have made the following hypothesis: the side preference of the baby, ie right handed or left handed, could be determined in *utero* by the side of this intimate link between the brain and placenta, thanks to better developed blood vessels. Two thirds of the foetus have their left brain on the placenta side, hence it is better irrigated and developing more, and two thirds of babies also show a preference to use the right hand, which means the left brain. Actually, the correlation between the two facts could be a causal one.

For sleep to be successful, it makes sense that consciousness/sensations/subtle body must gather on one side of the body, absorbing self into it, to be able to "sink" successfully into sleep. This also explains the mechanism of regression, as we just said: When there is discomfort/suffering/conflict with the outer world, the difference between the sides increases. Concretely, the side of the closed nostril will become tenser, and at the level of the chest, tensions increase on the left side where the heart has quicker beats and is stressed. This intensifies the dissymmetry with the right side of the liver where nothing happens, no beats are perceived. The underlying mechanism is easy to understand, it is as if the body was saying: "I am fed up with the world, then I will go to sleep and when I wake it will all be better!" In this sense, the popular theory, that when there is a problem it is good to "sleep on it" usually proves right.

This law explains why for better sleep one must gather one's energy and sensation into a single side during the preparation phase of falling asleep. For instance, it is possible to visualize that the side against the bed becomes one with this bed and the side of the nostril towards the ceiling becomes so subtle, airy, ethereal, that it ends up nearly non-existent. These have a calming affect. By the way, this is this type of relaxing and self therapeutic effect a schizophren looks for, in order to calm his anguish: they express it by saying that only half of their body is perceived ... At the beginning, this represents more a reaction of defense against their own anxiety, a kind of self therapy than a cause for disturbance, but afterwards it becomes intimately associated to the disease itself and is then considered as a symptom.. Consequently, "the egg and the hen" the cause and the effect will be mixed up.

Conversely, this law may be utilized for better waking up in the morning, and during the day, to get not only a deeper meditation, but also intelligence that works better. In this case, the work to do will be on the contrary reducing the imbalance of the sides, and trying to rebalance them like the two trays of a scale. The spine represents the arrow of the central axis, it becomes well erected and vertical. This is the main point of yoga of the sides of the body. I previously spoke about it in the first chapters of my French book *The Inner Marriage*, as well as in my two texts written this year, *Walking on the path with Nagarjuna*, concerning this Buddhist sage which has developed this Middle path and in another text *The ornament of Raja-Yoga*. Raja Yoga is based on the opening of the central channel of the body, thanks to rebalancing of the lateral channels. This is a kind of Middle way too, but in the yogic sense, i.e., in relation to the subtle body.

To put all these developments in a nutshell, let us say this: one can be more awake during the day and sleep better at night by employing the same methods, but in one sense or the opposite.

To continue with this stimulating aspect of the open right nostril, it is very useful to know the following: when one wakes up after 4 or 5 hours, one often feels like falling asleep again to complete a nightly cycle of 7 or 8 hours of sleep, but there is usually a change in the nostril side of opening. For instance, if it happens that the left nostril is closing and the right nostril is opening, there will be a stimulating effect which will inhibit the desire of falling back asleep. One can still try to do so for ten or fifteen minutes, but if sleep does not come, it will be better to do what one has to do and to start a normal day. Probably one will not be tired during that subsequent day, and will, on the following night, sleep 8 hours or more to compensate for the relative lack of sleep the night before. I have noticed that there is a tendency that, on this following night, when we will wake up after 4 or 5 hours of sleep, that it will be the left nostril that will open. This will allow falling back to sleep in an easier way for 2 or 3 hours more.

To be practical, there is a position of the body which favors falling asleep and involves relaxing the lumbar area. Lower backache is a social epidemic in the general population, and this lumbar ache may often be caused or at least entertained by a “wrong” position during sleep. When we usually sleep on the side, there is a twist of the lumbar area which keeps a tension going on and may be the cause of chronic pain. Neither are the ones sleeping on the back protected, because this position stretches the psoas muscles which draws forward the lumbar vertebrae, hence also the risk of pain. Often persons will fall asleep with backache thinking that a night rest will cure everything, but in actuality will wake up with further aggravation of the lower back. To avoid this, there is a very simple practice: if one lies on the right side, the right leg will be stretched on the mattress, and one will have to fold completely the left knee on top of a pillow, directing the knee towards the left shoulder. This is best maintained on a substantial sized pillow. In this position, lumbar vertebrae will not be twisted, will be allowed to relax completely, and is also plausible that the ache/injury from the day may possibly release. In addition to this, no new pain will be incurred.

In Tibetan tradition, the Dalai Lama advises people who are regularly sleepy to concentrate on the 3<sup>rd</sup> eye, and reversely for people falling asleep to focus on the lower belly, two three finger-width below the navel, which is also known to zen as the hara. He has devoted a full seminar with western scientists on the intermediary states of consciousness like dream, sleep, samādhi and dying. The book has been published by a

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French/American scientist, Francesco Varela, with a title, *Sleeping, Dreaming, Dying*. Shambala Publications, c1995.

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In Vedanta and Tibetan Buddhism, attention is not focused on the contents of the dreams, but rather on the questioning that the dream experience elicits, especially when the dream is lucid. "If I can wake up within my dream, being aware that I am dreaming, why can I not wake up within my ordinary life and realize that what I consider to be reality is more like a dream".

Another important physiological law that must be considered is the sudden relaxation of the muscles of the neck at the exact moment when one falls asleep. Actually, it is this reaction that is monitored by the scientist in the laboratories of EEG to know exactly when a subject falls asleep. This law can also aid in falling asleep in a very simple way. When lying on one's side, bend the head and chin closer to the top of the sternum, this induces a stretching and relaxation of the muscles of the neck, which by evidence can encourage sleep. It is interesting to note that in this practical way, a slight difference of head position by 15 or 20 degrees has a real affect on the success of falling asleep. In the Bible, Yahwe qualifies Israel to be full of "people with a stiff neck". A stiff neck practically corresponds with a rigid disposition, obstinate, full of resentments and complaints that will render the mind tense and add up to the difficulty of falling asleep. People who are humble and soft often have a bent head and will most likely fall into the "sleep of the Gods" with great ease...

An aid to falling asleep may be those spectacles made of cloth against light which they are used for instance in the planes. They help probably by the direct effect consisting in cutting contact with the external light, also in an indirect way by the warmth they provide; this induces a relaxation of the muscles of the eyes, and probably from that, a slowing down of the imaginary activity, and the mental excitement which is connected.

Another aspect of physiology could be used to induce sleep. It is based on a rather simple observation. When people who are falling asleep are recorded in laboratory, their breathing has pauses after the end of the outgoing breath. This could be even dangerous for people with acute respiratory deficiency, this is why in Intensive Care Units, such patients are often injected with caffeine to keep them away from these pauses, for, at this time, they could sink into anoxia (lack of oxygen) and thus risk a sudden death. For normal people however, hypoxia with an increase of carbon dioxide is good, it helps dropping off to sleep. The increase of carbon dioxide in the blood tends to make someone drowsy, until a certain extent of course. For, if it goes too high, the reaction of survival will put under alert the main systems of the body, there will be stress and a strong tendency to wake up. By our own experience, we will be able to feel the quantity of the duration of the pause at the end of the outgoing breath which will allow us to be comfortably drowsy without triggering any vital reaction with its adverse effects of stress and waking one up. As often, everything is a question of right dose.

In hatha-yoga, one advises to practice the postures taking into account the compensation: after for instance an asana in flexion, we should make another in extension, and vice versa. Actually, body is somehow like a spring, if it is stretched strongly on one side, it will tend to bounce back on the other. As we have already told, this process is equivalent to a regression to the fetal position, i.e. curling oneself up in one's bed. At the time of sending oneself to sleep, it is consequently good to stimulate the extension of the body, i.e. stretching for instance the back and the neck, arching them

with full lungs. Then, out of compensation, the spine will tend to retract itself, and the lungs to remain empty, which is in itself the best platform to 'slip into sleep'.

As for legs and arms are concerned, the full stretching is good, i.e. turning the crossed fingers with the palms pushing away from the top of the head, it is actually the gesture of the usual yawning. For the legs, there is a movement which favors the stretching of the posterior muscles and the rush of sensations of heat in the extremities, which has a calming effect too. It actually corresponds to a simple movement but the first time, one should understand exactly how to do it: one should push the heels as far as possible from the body, bring the back of the feet in direction of the head, and knot the toes. This will have work about all the musculatures of the foot, bring a sensation of heat and relaxation in this area. It is a common observation that it is difficult to fall asleep if the feet are cold. With his exercise, the same law is used but in an opposite direction. In a general way, the standing position of the human being induces a chronic tension of the posterior musculature of events than half even by shaking him making his the body, and this impedes falling easily asleep.

Another possibility is to start by getting oneself absorbed into the sensations of the closed nostril, and to have it diffuse to the whole half-body on the same side, it means of the side of the bed according to the sleep-inducing recommendation we are giving in this article. Some people may be helped also by closing the fists, but without tensions. In French, we say to express someone's sound sleep: 'He is sleeping at closed fists', as babies also do. As adults, it could equally be added: "sleeping with closed nostrils", knowing that it will be the one which is already closed which will be perceived in a privileged way. On the contrary, the feeling of opening of the closed nostril will help to wake up. It is one of the mechanisms of the efficacy of morning ablutions, when water passes through the fingers and toes, or behind the ears or again in between the gums and the lips: all this gives the feeling of ungluing, which favors by reflex the unsticking of the inside and outside mucous membrane of the closed nostrils, and then a good awakening of the body-mind complex.

Heat helps relaxing and dropping off to sleep, especially at the level of extremities, hands, feet and head, this is the good old system of the nightcap. It is even possible to be more specific: we have said that the forward bend of the head was essential to trigger the instant of falling asleep, another way of favoring it is to put a cloth on the nape of the neck, or whatever will be able to create heat on this spot. As the body more clearly perceives differences, it may be possible that this system will be more effective if the cloth is put only on the back and not on the front of the neck.

## **General advice about sleep and health**

*Coming back to the link between sleep deprivation and cancer*

Pr David Servan-Schreiber summarized in his blog on the site *guerir.org* ('healing', with an English part too) a Japanese study, which we have already quoted shortly before: let him now give us more details about it:

It has been established since a long time that a sufficient quantity of sleep, (the one which makes that you don't need an alarm clock to wake up) is associated to better health: less diabetes, hypertension and less risk of cardiac infarction. Recently, several international teams have discovered that sleep protects also against cancer. In a large Japanese study, 24,000 women have been followed during 8 years. For women which slept less than six hours a night, cancer risk was increased by 60 per cent (the same order of proportion that the increase of risk associated to the intake of hormonal treatment for menopause), in comparison to the women which slept at least seven hours. Besides, the ones who slept nine hours a night were protected against breast cancer with 28% less chances to develop the disease.

In another study, this time from the US, the protection against cancer secured by moderate physical exercise (30 minutes or equivalent, six days a week) disappeared almost completely with people who slept less than seven hours a night.

A study conducted on a great number of nurses which were practicing nightshifts substantially showed that before 35 or 40 years of age, their body could stand the deprivation and irregularities of sleep, but that after this age, it was no more the case.

### *Sleep cycles*

It is now well known that there are cycles of sleep which last 90 minutes, a little less with children, a little more with the elderly. When the need to sleep comes, one feels often yawning and heavy eyes, it is a sign of beginning of the cycle. The regularity in the time of going to sleep helps much to fall asleep well. I could experience it personally during my stays in hermitage, where I was attentive to go to sleep exactly at the same time plus or minus five minutes, and that has been one of the first times of my life where I could drop off to sleep regularly within two minutes. This rapidity was not due either to a lack of sleep during the preceding nights. If one must wake up with an alarm clock, it is better to calculate the waking time in the end of a cycle rather than in the middle. Most people are in need of five cycles, it means about seven hours and a half.

### *The question of the cooling of the body*

One of the best trigger for falling asleep is the decrease in temperature of the body, it means its cooling. It is for this reason, by the way, that we like to cover ourselves well, when we go to sleep. What matters is the difference, thus, if the body has been warmed up before, it will cool down in a more significant way and that will be good for falling asleep. Physiologists say that it is better to have five or six hours between the effort and the time to go to bed. If then we want to sleep at 10 or 11 at night, it will be preferable to make the efforts at 4 or 5 in the afternoon. In a general way, it is easily felt that a sustained physical activity helps to have a good sleep. Besides, maintaining a cool room, at about 18°C, will help. Taking a hot bath before going to bed will also give a sensation of cooling down of the body in the following period of time: actually, only 1° of decrease in the body temperature is enough to trigger sleep.

### *Alimentation*



First comes the question of quantity, and here again, the law of the right middle remains the good one: eating too much risks to lead to an agitated sleep, and reversely, a full fast will trigger the adrenaline system which goes in the sense of stress, and then of insomnia. By the way, it is probably for this reason that Buddhist monks do not take dinner, at least in the warm regions. They want to be able to wake up very early when it is still cool, to have a better meditation. They probably also wish to have a light sleep to get more chances to be conscious during their dreams. There is also a practical side in this. They live from alms and then, they must often go on long distances on foot from their forests to beg in the villages. This takes time, and so they prefer to have to do it only once a day during the morning time.

An important discovery of the brain physiology is rather recent, and shows that this organ consumes much energy, not only to think, but also to dream. Pr Jean-Marie Bourre, from the French Academy of Medicine, is a specialist of the nutrition of the brain, and he compares its nightly activity to the 'defragmentation' of the hard disk in a computer. This consumes energy. Practically, as Pr Bourre is from South France, he "confesses" in one of his book that he eats every night a small handful of dried plums just before going to bed [in southwest France, the "*pruneaux*" are a popular snack] . Actually, slow carbohydrates represent a good food for the brain at night, but the quick ones are not, because there is the risk of a hypoglycemic reaction which will wake up the person in the middle of the night. Moreover, these quick carbohydrates will cancel the positive cleansing effect of superfluous fats by the body metabolism during night. Generally, a full fast in the evening will cause a very early waking up, simply because one is hungry, and so, it is not usually advisable to do so if one wishes to get a sufficient quantity of sleep. It is true that Buddhist monks use this process to sleep less, but given all that we now know on the deleterious long-term effects of the chronic sleep deprivation, this full fast at night seems not much advisable.

By the way, a study of a Greek University has shown that the intake of green tea would stop the inflammation of the arteries for about three hours. This inflammation is triggered by the release of protein C reactive and of those interleukin which have an inflammatory effect. Their production is increased by the lack of sleep. So, it seems logical to take more green tea on those days following a night where sleep has been insufficient, in order to limit the bad biochemical effects of the deprivation. Other studies will probably throw more light on this point...

While speaking of nutrition and sleep, we could say a word on chrono-nutrition, such as it has been popularized for instance by Alain Delabos<sup>1</sup>. It is based on strong scientific evidence. The main idea is the observation according to which the body best digests a given nutrient at a given time. According to this principle, it is for instance good to take quick carbohydrates at about 4 or 5 p.m. because this is the time when they are easily assimilated. Reversely, for dinner, if one wishes that sleep assumes its role of cleansing the body and burning extra fats, it will be better to take pure proteins liking fish, and vegetables (except potatoes). These very slow carbohydrates, associated to proteins, allow a full rest of the pancreas and insulin, and then the "de-storage" of the fats. On the contrary, if one dines with quick carbohydrates, as for instance dairy products, with the lactose (this type of sugar which is present in milk and curd, but less in cheese), the system of pancreas-insulin will be stimulated during a big part of the night. It will never

be really at rest, and because of that, the fats will not be “de-stored” as they could have been by the normal metabolism of sleep.

To shortly complete this information about ‘chrononutrition’, it is recommended to take the cholesterol, for instance cheese, in the morning at breakfast time with slow carbohydrates to accompany it, for instance in the form of whole bread, because it is at this time that the lipase able to digest cholesterol is the more active. Then, there is an interesting effect on the endogenous cholesterol, which is responsible for hypercholesterolemia. Its production is reduced by the intake of outer, exogenous cholesterol. Studies conducted in particular at the University of Dijon, in Burgundy near Paris, on 5000 subjects, confirm this fact. This is actually analogous to the reduction of the production of a given hormone during hormonal therapy. When the hormone is taken from outside as a medicine, the corresponding glands become lazy and stop producing the natural, endogenous version of the substance.

There is an amino-acid which is useful to know and to take in at night, the tryptophan. It induces sleep. It is found among others in wheat, rice and dairy products. Besides, it is important to take less or no salt at night. Globally, the modern western food is much too rich in salt: if taken in quantity in the evening, it will increase the work of the heart during the whole night.

### *Breathing practices.*

To go to sleep, some people like to use a form of *prânâyâma*, with counting of the breaths. According to the experiences I have collected, if one organizes the outgoing breath so that it becomes twice longer than the incoming one, this has a good effect to drop off to sleep. In my experience, the most effective is the pause after the end of the outgoing breath; this corresponds also to the physiological mechanisms to go to sleep, as we have mentioned it. In this sense, it is interesting to see that when we take a lot of coffee, we feel obliged to breathe again immediately after the end of the expiration, and reversely, the stoppage after the end of the outgoing breath has an effect “anti-caffeine”, and thus calming.

Cardiac coherence has been much studied and is able to decrease the level of cortisone, the stress hormone, from four to six hours afterwards, even for a practice as short as five minutes: the method consists in breathing in for five seconds, and breathing out also for five seconds. It is equally possible to adapt one’s rhythm to the heartbeats, counting six of them while breathing in, and as much while breathing out.

The Tibetans recommend concentration on the throat chakra to induce lucid dreaming. It is possible that this concentration goes in the general sense of the forward bent of the trunk and of the neck and the cuddling up on the bed, this fetal position which, in a general way, helps one falling asleep.

In the fractioned hypnosis of Milton Erickson, emphasis is on the power of paradox to change one’s own state of consciousness. This paradox represents a kind of confusion of the two poles of a logical proposition, and it means finally the right and the left when we come back to the level of the body perceptions. I have a friend who has learned to handle this system, he uses paradoxical injunctions about his own sleep regularly at night and testifies that it is the best way he has found to fall asleep. Mind, when facing a contradiction, starts to look somewhat for a solution, but finally gives up and stops. This

is this very stoppage of mind which favors either a deep spiritual awakening, or the falling asleep.

A general piece of advice: whatever is the techniques which are used to lull oneself to sleep, one should remember the Golden rule, which is rather paradoxical: it is precisely when there is very little volition to go to sleep... that it comes!

A practical warning: some people think they don't have any sleep problem because they sleep very little, and for this very reason, they collapse like masses when they go to bed. Certainly, their problem is not falling asleep, but it is the chronic deprivation of deep rest at night, and here is the real difficulty, with the risks of early death which are linked to it, as it is shown in the studies that we mentioned above.

The Latin saying goes *Mens sana in corpore sano*, 'a healthy mind in a healthy body'. This adage of the wisdom of yore could be transposed to a more subtle level, speaking for instance of "a healthy spiritual awakening after a healthy physical sleep". It has been explained above how, for instance, the same law of the working of body sides can be used in to fall asleep well at night, or, in the morning, to wake oneself well during the meditation. If we sleep badly at night, the tendency will be to snooze during our meditation, which is not the aim; so, there is a relation between the two sides of the same law, contributing to a healthy falling asleep at night and also to a no less healthy spiritual awakening during daytime.

#### *The role of melatonin*

Melatonin is a good substance to induce sleep, one starts by giving a dose of 0.3 mg a day, raising them until 5, or even 10 mg a day. Melatonin is available at druggists. Melatonin has a good effect not only on sleep, but it also inhibits the multiplication of cancer cells. One should also remember that a few minutes of light are sufficient to decrease its level, and then to impede sleep. Consequently, it is better to be cautious about light, especially when it is strong, in the middle of the night of course, but even within one hour before going to sleep. Let us see what Pr Servan-Schreiber has to say about it:

During sleep, and even in good conditions of obscurity, the brain releases, in a continuous way, a small hormone called melatonin. An exposure to light, even limited to a few tens of second, cancels its production. At the Basset Research Institute of New York State, Dr Blask has been able to show that melatonin directly acts on cancer cells to reduce their growth. Melatonin decreases the assimilation of omega-6 fatty acids, which facilitates the inflammation of the tumor and hence its growth. Besides, in Italy, at the San Gerardo Hospital in Milan, the research team of Pr Lissonio has been working on the effects of melatonin in the treatment of cancer for the past 20 years. They have shown that for several solid cancers like breast, lungs, cancer of the neck and of the head, glioblastomi, the radiotherapy and chemotherapy had much better results when the patients received 20 mg of melatonin at night. Besides, patients receiving this melatonin had less side effects of the strong anti-cancer therapies, like thrombocytopenia, neuropathies, heart diseases, gum bleeding and deep fatigue<sup>ii</sup>

For plants and medicines facilitating sleep, as well as the for all kind of practical tricks to better fall asleep, one may refer to the site of Pr David Servan-Schreiber, [www.guerir.org](http://www.guerir.org), which contains an English part.

I hope that these few reflections, observations and practical exercises will be found useful to facilitate the coming of sleep every night with the readers. This article will be probably completed. For instance, I have got a recent book on the physiology of sleep with the many very detailed research on this topic, and I am sure that by studying it accurately, I will find quite a few other links with yoga and meditation; it will give me a number of intuitions and hypothesis. These reflections, particularly on left and right sides and the body and sleep, could constitute a basis for work for MA and Ph.D. dissertations in psychology, including systematic and scientific verification along with control groups. Ernest Lawrence Rossi, Milton Erickson's successor, has already done some work in this sense.<sup>iii</sup> It could even become a topic of study for professional researchers. I must confess that my personal involvement in the practice of Yoga and meditation, as well as many other tasks and subject of writings, does not leave me the time to go forward in this sense.

In any case, knowing the importance of a good sleep for physical, psychological and spiritual health, I hope that these few pages, mixing scientific researches and practical observations, will help people to know how to better plunge into the arms of Morpheus, connected to sleep in Greek mythology, and derive from this, night after night, a real inner metamorphosis...

### **The vision of sleep in the Upanishad**

I have already spoken on this subject in my book *Meditation and psychology*, where the full second chapter is devoted to sleep.<sup>iv</sup> Still, we could take back here some important points and develops them a little differently to show the whole spiritual and metaphysical experience that can be made while reflecting on sleep. The most ancient Upanishad, the *Brihad-Aranyaka*, meditates in depth on this subject ( 4.3.7-14)

When one goes to sleep, he takes along the material of these all-containing world, himself tears it apart, himself builds it up, and dreams by his own brightness, by his own light. Then this person becomes self-illuminated.

On this point, there are the following verses:

*Striking down in sleep what is bodily,  
Sleepless he looks down upon the sleeping [senses].  
Having taken to himself light, there he returns to his place  
The golden person, the one spirit (hamsa).*

*Guarding his low nest with the breath,  
The Immortal goes forth out of the nest.  
He goes where he pleases – the Immortal,  
The golden person, the one spirit (hamsa).*

*In the state of sleep going aloft and a low,  
A God, he makes many forms for himself –  
Now, as it were, enjoying pleasure with women,  
Now, as it were, laughing, and even beholding fearful sights.*

*People see his pleasure-ground;*

*Him none sees at all.*

If one is successful in remaining conscious that we dream, as in the case of lucid dreaming, at this time he gets an experience of this Self which sees without being seen, which is the witness of everything, be it the events in dream and those in the ordinary world. This eagle of the consciousness-witness rests in its nest at the time of sleep:

As a falcon, or an eagle, having flown around here and there in space, becomes weary, folds its wings, and is borne down to its nest, just so this person hastens to that state where, asleep, he desires no desires and sees no dream.

Being *a-kama-kami*, not desiring desires, is related, in the same Upanishad, to the progression towards more and more intense levels of felicity. To be successful in this ascent, knowing the Scriptures is needed. Otherwise, the absence of desire might give birth to an energy which will be ill-directed. The risk will be to go round within oneself, as it is the case in the simple frustration or suppression.

This, verily, is that form of which is beyond desires, free from evil, without fear. As a man, when in the embrace of a beloved wife, knows nothing within or without, so this person, when in the embrace of the individual Soul, knows nothing within or without. Really, that is his true form in which his desire is satisfied, in which the Soul is his desire, in which he is without desire and without sorrow.

This experience of union in sleep, when it is conscious, even hyperconscious, becomes then pure samadhi. At this time, one has an experience of pure subjectivity where there is neither object, neither subject: it is as if all those objects were devoured by the fire of consciousness which spreads everywhere; there is only Him, it means the Self:

Verily, while he does not there see [with the eyes], he is verily seeing, though he does not see [what is usually to be seen]; for there is no cessation of the seeing of a seer, because of his imperishability [as a seer]... It is not, however, a second thing, other than himself and separate, that he may see. (*Brihad-Aranyaka Upanishad*, 4. 3. 19, 21, 23)<sup>v</sup>.

Ramana Maharshi draws near the dream state and the waking state by simply saying: "The first is short, the second is long, here is the only difference". When he was a child, the sage had no special attraction for spirituality, but he had an interesting characteristic: he could fall deeply asleep during the day, even in the midst of his friends who were playing; these had even fun with him and used to shake him strongly. However, this was to no avail, he kept on sleeping. Let us remember that Ramana Maharishi had undergone a conversion to inner life with a near-death experience at the age of 15, in his family house which is located in the immediate neighborhood of the huge temple of the Goddess Minakshi in Madurai. It is possible that this intensity of deep sleep as a child has been transformed by this experience in a hyperconsciousness merging regularly in unity, it means in samadhi.

To come back to the practical side, there will certainly be a change in the quality of the way one lulls oneself to sleep if one feels at that time the experience of one's luminous essence. In this sense, have the Italians not a nice way to wish you good night?

They may say in a simple manner, *sonno d'oro*, 'sleep of gold'. That is all. This reminds us of the golden swan the Upanishad, which joins its superior nest in the heart of the sun. The term *hamsa*, the swan, corresponds also to the mantra which is the closest to the coming and going of the wave of the breath (*ham* maybe with breathing in, and *sa* with breathing out, or the opposite). One way of doing could be to visualize this wave of light merging progressively, in the process of falling asleep, with the golden underlying ocean...

### **Sleep and spiritual practice: where is the right middle?**

Until recently, there was not quite a clear picture of the link between sleep deprivation, the decrease in immunity, and the increase of the rate of general mortality, particularly by diabetes, cardiovascular diseases, and, according to a series of recent researches, cancer. Until little time ago in the history of humanity, human beings used to die at a younger age due to various infections. People did not live old enough so that the other above-mentioned diseases could develop. However, with the progress of antibiotics, we now die older, and the causes for demise have become at 40% by cardiovascular diseases and at about the same percentage, by cancer. Thus, it is only now that the deleterious role of sleep deprivation triggering this type of disease is clearly identified, and even in our time, it has been necessary to conduct studies on a great number of subjects, with rigorous statistical methods, to scientifically prove what at the beginning was simply the intuition of some perspicuous doctors. However, now, results are here, and clearly show the correlation between sleep deprivation and the prevalence of serious pathologies. Buddhism and the Bhagavad-Gita recommend the path of the right middle. But where is it to be placed as far as the question of sleep is concerned?

We could for instance consider the case of Ajahn Shah, a Buddhist Master of the forest, who was very well-known in Thailand. He had not much studied, had been educated directly by his own masters, a specificity which gives force and intensity to his personal teachings. However, he has certainly gone too far regarding austerities, especially sleep: he used to boast to have found a breathing exercise which, even after three days without sleep, would refresh him in 15 minutes and enabled him to stay one or two days more without closing the eyes... Unfortunately, at the age of 60, at the turn of the '80s, he succumbed to a stroke which left him paralyzed and mute. He then lied on his bed like a vegetable for 10 more years, completely cut from the outer world and finally passed away at 70, having been for all this time a heavy and rather useless charge for his community.

For spiritual seekers, there are two main sets of reasons to deprive oneself of sleep: first, having more time and intensity in one's practice, and secondly having more possibilities to serve the others and to teach them should the occasion arise. These two groups of motivation lose their *raison d'être* if one is to die 10 years, 20 years, or 30 years before what our body genetics was ready to grant us as a life span. It could be certainly possible to argue that the negative effects of sleep deprivation could be counterbalanced by a proper meditative practice. There are actually factors going in this sense, for instance the increase of T lymphocytes, which are important for immunity and grow in proportion of the quantity of daily hours of meditation. However, there are other factors which go into the reverse direction: people who are too much sitting and

sedentary during the day in a general way increase clearly their rate of mortality in comparison with the control group... and usually, meditation is a sedentary activity, except if one decides to do it walking. To quote a specific study, each hour spent in average in front of the television increases the global mortality by 11% and that of cardiovascular diseases by 18%. Of course, meditation is not TV, but still for the 'gross' body and its laws, it come down to being sedentary.

Let us now speak about Anandamayi: at the beginning, herself on her disciples used to go far in the sense of sleep deprivation, but then, this tendency has faded away by herself and they came back to a more normal lifestyle. Swami Vijayananda was my master, he spent more than 30 years with Ma, has meditated during 75 years, and left his body recently at the respectable age of 95. He used to present matters about sleep in a very simple manner, saying: "If you don't sleep enough at night, then you will sleep during meditation, and this is not the aim!"

Of course, it is possible and even rather easy to miss one night from time to time, provided one recuperates one's sleep quickly, for instance directly on the next night. If this is not the case, the first symptom of sleep deprivation in the middle term will be a lowering of the level of mental acuteness in the evening, as it has been clearly showed by a recent study, and as it is rather easily observable on oneself. Actually, one does not feel tiredness during the day, but as soon as day is failing, one becomes not much functional any more. These phenomena may even last 10 or 15 days after a period of serious sleep deprivation.

It is also possible to identify some theatrical side in those who deprive themselves of sleep for spiritual reasons: "I am the one of whom the word is in need to be saved, they wait only for me, and all this glorious mission puts me, of course, beyond the laws of the body!" This being said, as sleep deprivation is shown to frequently lead to an anticipated death, maybe by 10 or 20 years, or to an early handicap, this attitude does not seem to be of much interest.

It may be relevant here to remind us of a distinction that is made in the Upanishads and the Bhagavad-Gita. It is rather simple: some actions create a short-term stimulation and pleasure, but prove to be destructive in the long-range, they are called *tamasic*, it means black, obscure, while for other actions, the reverse is true. Recent discoveries of the medical science show that sleep deprivation is rather of the first time than of the second one.

It is interesting to see the link between the sleep deprivation and the state of hyper excitement as it occurs in hypomania. Since long, it has been known that bouts of pathological excitement lead regularly to a lack of a sleep for a few months. Then a depressive reaction comes during a few more months. During it, there will be more time devoted to sleep, this will certainly lead to a physical recuperation, but the mood will remain somber, and the subject will be depressed. What is less known is the reverse phenomenon: insomnia has in itself the power to put someone in hyper excitement, somewhat artificially, it is more or less like the fast which stimulates the adrenalin, hence leading to a general increase of the excitation level. This represents a double edged sword, because if this extra-energy is not well directed, it will give birth to a useless feverishness, or, in certain cases, if there is an underlying frailty, it will transform itself into ideas of grandiosity or other kind of madness. Delusion is directly related to the lack of sleep, especially in its starting form of acute schizophrenia. It corresponds to a bout of

excitation which starts suddenly, and gets better spontaneously in a few weeks, but may also relapse and get more permanent in about 20% of cases, leading the patient to chronic schizophrenia. Delusion represents the irruption of dream during daytime, and actually, this need to dream during the day is caused by an important lack of sleep for several weeks or months before.

To conclude, be it for people who have no inner practice or for those who are on the spiritual path, it is good, given the recent studies and the above reflections, to raise the evaluation of the need for sleep. This is not something extraordinary to do, recently, one has also revised and raised the daily needs of omega-3 and vitamin D, because one has observed that there was a considerable deficiency of these two elements in the general population. All this goes in the sense of a better public health, and thus is important. It is consequently worthwhile to take seriously these studies, be it for oneself – or for others, if one is in a position to give counsel. Sleeping well at night enables one to be better awoken and aware during the day, and we need in actuality to be very well awoken to have the possibility, the hope, one day, to touch the Awakening.

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<sup>i</sup> Delabos Alain *La chrononutrition – spécial cholestérol ou Mincir en beauté grâce la chrononutrition*, et autres titres.

<sup>ii</sup> Lissoni, P., et al., Decreased toxicity and increased efficacy of cancer chemotherapy using the pineal hormone melatonin in metastatic solid tumour patients with poor clinical status. *European Journal of Cancer*, 1999. 35(12): p. 1688-92.

Ans also : Lissoni, P., et al., Increased survival time in brain glioblastomas by a radioneuroendocrine strategy with radiotherapy plus melatonin compared to radiotherapy alone. *Oncology*, 1996. 53(1): p. 43-6.

<sup>iii</sup> Rossi, Ernest-Lawrence *Psychobiology of healing*, 1993

<sup>iv</sup> This book is currently being translated into English

<sup>v</sup> I used for the quotes the classical translation by Robert Ernest Hume at Oxford University Press, Bombay, Delhi; 1877, 1985.