Solution to the Humanity’s Age-old Problem “Sore Waist and Aching Back”: Using NON-Conventional Sleeping Positions and Bedding to Alleviate Back Pain and Regain Energy

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Abstract

For eons, human beings walked using their four limbs. It was not until relatively recently that human beings started to walk on their two feet. By standing on two feet, the waist takes the weight from the upper part of the body, which accounts for three-fifths of their total weight. If people stand, sit or walk too long, they will have a sore waist and an aching back. The frequency of the symptoms is similar to that of a cold. The back pain problem particularly occurs to laborers, athletes, those who physically challenge themselves, or those who have to stand and sit for a long time due to the requirements of their work, such as teachers, barbers or hairdressers, store sales clerks, dentists, nurses, long-distance drivers, or some assembly line operators. Those people easily get a sore waist and aching back. Thus, calling this problem “humanity’s age-old problem” is not an exaggeration. Numerous methods were developed to solve the problem. Much research has also been conducted to find out the factors of the problem. However, one crucial problem has been overlooked. It derives from existing kinds of beds that are made by misusing the ergonomic spine movement curve. So, when people lie on a bed, they still feel tension from moving or working. Therefore, NON-conventional sleeping positions and bedding are needed based on human’s natural smiling curve. In other words, to get a real relaxation, the spine needs to be in the shape of a smiling curve, like the shape of a bow, crescent moon, so that people can lie down and sleep with relaxation from head to toe, from inside to outside, from internal to external organs, and the ten body systems (integument system, skeletal system, muscular System, circulatory system, lymphatic system, nervous system, digestive system, respiratory system, urinary system, endocrine system, reproductive system). The compression in lumbar spine can also be alleviated. Then the body can be physically and mentally relaxed and get enough rest.

Keywords: Back pain; Sleeping disorder; Nonconventional sleeping position; Bedding; S-curve; Smiling curve

Incorrect Sleeping Positions and Bedding Exhaust Your Physical Strength Every night

It is very common for people to get bone spurs, sciatica, sore neck and thigh bone, tingling pain in knees and feet. The advice that they commonly receive from doctors is to avoid incorrect sitting and standing postures or inappropriate postures especially when bending over to lift heavy objects. However, doctors seldom mention the problem of sleeping postures. Specialty physicians have also avoided talking about the importance of sleeping postures. At most, they show their concern by asking whether the mattress is too hard or soft, or whether the waist is being supported in bed. It seems that the matter is not that serious, so it is often postponed until a later time to deal with it.

Speaking of sleeping postures, the choices are usually limited to lying on one’s back, sleeping on one’s side, and sleeping on one’s stomach. People tend to toss and turn restless without a fixed posture. It perhaps does not make sense if one is told to have a particular sleeping posture. Nevertheless, people are supposed to be vigorous, energetic, and high-spirited after a good night sleep. Surprisingly, it often turns out to be the other way around after they get up in the morning. For example, most people have the symptoms such as a sore waist, aching back, stiff tendons and tight muscles. It may seem strange and most people might wonder whether they were sleeping or working during the night. Without quality sleep to help people regain energy, how can they deal with work during the day time? It is a small everyday issue but turns out to be a big problem that has bothered people for thousands of years without any solution having been found. According to the researcher’s experimental research study, it was found that the inability of people to sleep well, be relaxed, and get good rest certainly has something to do with their sleeping postures and bedding. If sleeping is not helping people to regain their energy and restore their vitality but instead causes fatigue, they may fall sick from exhaustion and overwork.

State of Incomplete Sleep

Sleeping disorder is a condition or disease that interferes with sleep. It can be caused by various factors, including stress, substance abuse, body weight, BMI (Body Mass Index), maxillofacial and craniofacial deformities, and bedding. Sleeping disorders can also be considered as life style diseases, which is associated with the way a person or a group of people lives, including atherosclerosis, heart disease, and stroke. A variety of factors that contribute to sleeping disorder have been identified through numerous studies; however, little research has been done to detect the problem—the body posture during sleep. Koninck et al. [1] also pointed out that despite the fact that many aspects of sleep and dream are being studied extensively, the bodily positions during sleep have not received very much attention.

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During sleep, people commonly move or change sleeping positions. In Koninck et al. [1] study, the data results show that the average of good sleepers' position changes per night is 22.3. In general, people can change their sleeping positions as few as 30 to 40 times and as many as 50 to 60 times. We can count the times within six hours (i.e. 360 minutes) per night. If people change their sleeping positions 30 times, the frequency is once every 12 minutes. If people toss and turn 60 times, the frequency is once every 6 minutes. In other words, people change their sleeping positions one time within 6 to 12 minutes. The change of their sleeping positions is due to uncomfortable sleeping postures, which puts pressure on skin, muscles, blood vessels and results in soreness and tingling pain. The brain gets the message of the tingling pain, makes an internal inductive analysis, and then sends out a message to turn over. That is to say, part of the brain is not resting; it is busy receiving and sending messages to change their sleeping positions the entire night. This kind of sleep is called "state of incomplete sleep." People who do not change their sleeping postures or bedding will have this problem to some extent.

In summary, sleeping disorder has causal relationship with sleeping positions. As Koninck et al. [1] indicate, "sleep positions constitute an interesting dimension of sleep and that further study may reveal causal links between the quality of sleep and the amount of time spent in particular positions. Certain sleep disorders may indeed be related to sleep positions." Their research provides good evidence showing the causal relationship between the bodily positions and sleeping disorder.

The Syndrome Derived from Incomplete Sleep

Sleeping is crucial because it directly influences life span. For example, hibernating animals, such as turtles and snakes, have a long life. On the contrary, incomplete sleep or sleeping deficiency may cause brain fatigue, brain degradation or premature aging, and immune system problems. Those who have long-term insomnia have a problem with their immune system. The diseases involved in the immune system include cancer, tumors, infectious diseases, and many other inflammation diseases, which can be described as all-encompassing and are too numerous to mention. Most of them are related to the immune system. On the other hand, if people's immunity is balanced, they will not be infected with any diseases and will live a long life.

As known, getting a cold has a correlation with incomplete sleep. For instance, people usually catch a cold during the night time, but the cold is not discovered until the next morning. The symptoms of a cold include a pharyngeal nose, feeling dry and pain between the nose and pharynx, nasal congestion, sneezing, a runny nose, dizziness, muscle aches, fatigue, and migraine. It is not until people get up in the morning, they may find they get a cold with the symptoms stated above. As a matter of fact, the cold is usually caused by the constant change of bodily position during sleep, which actually results from incomplete sleep. Without a good night's sleep, people can easily get a cold, which is the root cause of all diseases. Therefore, we can conclude that all of the ailments and diseases mentioned above can be classified as "the syndrome derived from incomplete sleep."

“Seeking it my whole life; Looking back all of a sudden; It has not been far from my side” (from a poem by Chi-Ji Xin in Chinese Song Dynasty)

To unlock the eternal suspenseful mystery of back pain, it was found that specialists, scholars, and physicians did spend a huge amount of effort in this area, such as injections and medicine, titanium implant surgery, perfusion of bone cement, neck supporter (or neck supporting collar), frame brace, waist frame protection belt, spinal scoliosis braces, electric massage chairs, ice packs, hot packs, traction, tai-chi, yoga, abdominal movement exercise, waist power exercise, acupuncture, massage therapy, chiropractic [1], cupping therapy [1], stretching, qigong, low-frequency electrical stimulation therapy, thermal treatment, aqua therapy, steam therapy, medicated wash, or medicated plaster. Numerous methods were developed, but the most crucial solution for back pain was ignored. Back pain can actually be repaired through sleeping naturally during the night time. It is as one western proverb says, "Time, nature, and patience are three great physicians", which are sent by God to treat people’s diseases every night.” If we really understand the proverb, we should take advantage of the night time lying in the “appropriate” bed naturally rest patiently to recover peacefully, and relax thoroughly. After we sleep soundly for five or six hours with the help of the three physicians, our body will feel soft and comfortable. This is the most comfortable state that can avoid a sore waist and an aching back. Consequently, all of our diseases can be cured and our good health can be maintained. In other others, this is the real remedy for back pain. It is a natural repair actually working at night while people sleep.

The Bed Industry has Made a Serious Mistake

It is time to seriously discuss what kind of sleeping positions and bedding are needed in order to achieve a deep and sound sleep without tossing and turning at night. Spring beds have been manufactured for 130 years. While they have really brought unprecedented comfort, they unfortunately cannot reduce back pain. Some physicians even advocate the use of a hard wooden bed and convince patients to sleep on it. In fact, sleeping on a hard wooden bed is not as comfortable as sleeping on the spring bed, nor is it helpful for alleviating back pain. After a careful examination of all the beds sold on the market, it was discovered that neither a spring bed, nor a hard wooden bed is the real remedy for back pain. Consequently, beds made for people to sleep on have unexpectedly led to more fatigue. That’s why most people are dissatisfied with their bed. This is reflected in a poll in which 60% of people stated that they do not have a comfortable sleep and feel stiff and sore. The reason is that the spring bed, the hard wooden bed, or the bed with the electric massage chair are not comfortable in terms of the spinal curvature. In other words, the use of a hard wooden bed and spring bed actually aggravates back pain. The real remedy for back pain is the S curvature of the spine (Figure 1) of a person’s spine as the rest curvature. Consequently, beds made for people to sleep on have unexpectedly led to more fatigue. That’s why most people are dissatisfied with their bed.
feel sleep well and do not get enough sleep, and 90% of people stated their sleeping was disturbed.

Sleeping Position Changing from the S-Curve to Smiling Curve Will Double People’s Life-Span

Spinal physiological curvature has more than one pattern. The curve can be divided into at least two states: the state of motion and the state of rest. When a person is in the state of motion, such as standing, walking, running and jumping, or working, his or her spinal curvature turns into S-curve. The cervical spine turns forward convex; the thoracics acral concave back. If we look at a person from the side, an S-curve is observed. On the other hand, if a person is in the state of rest, the curvature of a person’s spine is in a relaxed state, which appears as “a smiling curve” (Figure 2). Thus, if a bed is made according to this relaxed smiling curve, it can really allow a person to take a good rest. In contrast, if a bed is made according to the S-curve, it does not provide a person with any rest at all. What’s worse, it forces a person to continue to be in the state of motion.

However, most people choose to sleep on the beds leaving them in the state of movement, tension, and exhaustion instead of resting, because they have typically believed that a bed should be flat. Experts in the field of preventive medicine also believe that the best sleeping position should be the same as the standing position, which has become a slogan in the bed industry. Therefore, the bed industry has only concerned about making flat bedsteads based on the S-curve of the human body. In fact, without further investigation or research conducted, there is a problem with the logic. For a healthy person, lying down and standing up make no difference because their back can keep conducted, there is a problem with the logic. For a healthy person, lying down and standing up make no difference because their back can keep.

One bed manufacturer who calls himself “doctor” claimed that the former U.S. President, George W Bush, and his family members all sleep on the beds he made. He also affirmed that for decades he changed the concept of “misunderstanding of the bed, misusing of the bed.” One of the sentences in his article puzzled many readers. He said that the function of his bed is to reach the goal of “the best posture of standing at attention with relaxation – straight waist, upright chest, narrow abdomen.” This is definitely a posture that will exhaust a person’s energy. Those who have received military training courses know that being “at ease” is slightly more relaxing than being “at attention.” When one is “at attention”, one is in a NON-relaxing state: having chin up and chest out, shrinking the lower abdomen, eyes looking straight ahead, high spirits, full of energy, combat readiness, straight and impressive looking. So, standing “at attention” is the most uneasy position. If a bed is made by reflecting such a ridiculous understanding and misconception, how can people expect to have a bed that can offer them a good night’s sleep? Not only this bed manufacturer but also other manufacturers have madesuch a big mistake. This manufacturer “doctor” simply put his bed-making concept into words. As a matter of fact, over the past 130 years, all beds made by the bed industry are pretty much the same. They are not made to keep people in the state of motion, tension, combat readiness, and exhaustion instead of having them rest, recuperate and regain energy.

Sleeping on the Back and on One Side in a Smiling Curve Can Help One Sleep Without Changing Positions All Night

Ancient Chinese Buddhist practitioners were required to “sit like bells, walk like wind, stand like a pine tree, sleep like a bow” because these postures were perceived as the best postures for Buddhist practice. Similarly, the smiling-curve sleeping position is perceived as the most comfortable position, which can be divided into two: one is sleeping on the back; the other is sleeping on the side.

The first one is sleeping on one side. Sleeping on one’s side retracts one’s spine into the shape of a bow, which is also called the shape of crescent moon. The School of Medicine at Oklahoma State University published a paper on sleeping quality. It mentioned that sleeping on one side the whole night can better help the spine to relax. This type of sleeping position is certainly good for the spine, but it presses hard on the area between the shoulders to the ribs and to the flank, and from the armpit to the waist. The press often makes people to feel uncomfortable and has them constantly their sleeping positions while sleeping.

The other position is sleeping on the back. If a person who is sleeping on the back is watched from the side of the body, the shape of the person’s body appears as a smiling curve. The head and knees move to the same height and the waist moves to the lower position. The angle between the body and legs of the person is around 140 degrees. The position of sleeping on the side is formed by means of a bed with a smiling curve. If people sleep on the bed like that, it certainly makes them feel comfortable. When people sleep on the back on the bed with a smiling curve, their chest and shoulders are relaxed without being moved upwards, their lower part of abdomen sinks down naturally, and their belly and lower part of abdomen are soft and loose. This is similar to the movement of T’ai-chi – having the chest and back relaxed and the neck pulled up, breathing from the abdomen, and having long and gentle breathing, which do not make people feel like moving their body. People’s back pain can be totally alleviated.

In regard of this issue, Jacobson et al. [2] research also discusses back pain, sleep quality, and bedding by comparing “personal and new bedding systems between subjects with reported high and low base line sleep quality.” The findings of their research show that new, medium- firm bedding systems can yield significant differences for...
good and poor sleep quality. They also found that the variables, such as age, weight, height, and body mass index, are independent of such improvements.

### Three Examples About Posturing With a Spine that is Hunched in the Shape of a Smiling Curve Like a Bow

As mentioned earlier, from the traditional perspective, the two examples—standing at attention and lying flat on the bed—may seem to be the easiest positions. However, if a person has the two positions, his or her spine is in the shape of the S sports curvature, which often leads to some sort of pain, soreness and fatigue. In contrast, from some common facts in our daily life, we can easily find out that the spine in the resting state is in the shape of a smiling curve, which is the most comfortable curve. This concept will be illustrated by the three examples: the fetus, the animal, and the biker.

#### The fetus in the womb has its feet crossed and its body hunched in the resting state.

After it is born, it begins to learn to walk with a vertical backbone. When in the walking state, the baby’s spine resembles an S-curve, but when in the resting state, its spine often appears in the shape of a smiling curve (Figure 3).

#### Another example is the animal.

The spine of all four-legged animals, including cats, dogs, cattle, sheep, pigs, tigers, leopards, lions, and deer, appears as an S-curve when they are in the state of standing, running, jumping and walking. However, when they are in the resting state, their spines naturally turn into the shape of a smiling curve, like a crescent.

#### The third example is bicyclists.

We often see most bicyclists riding a bike with their back hunched (Figure 4). The position of sitting on a bike makes a person lean forward or squat with two feet bent in the same level, so that the bicyclist’s spine will feel more comfortable. According to Dr. Wen-Ji Tsai [3], the dean of Bone Care orthopaedics Center in Taiwan, the degree of a person’s spine curve in the state of standing is 1.145 and bike-riding position is 1.031. He concludes that bike-riding can help alleviate the compression particularly between the fourth lumbar and fifth lumbar of a person’s spine.

#### Evidence in Literature of Physiology and Anatomy Confirmed that the Spine Stretches to its Extent When Sleeping in the Shape of a Smiling curve, Matching the Measurement of X-Ray

There is plenty of evidence in the literature of physiology and anatomy in regard to the smiling curve of the spine. For example, if the spine of a donated dead body is bent forwards and backwards, the forward-bent smiling curve stretches the body to its fullest. That is to say, the position of smiling curve is the most beneficial to the circulation of the spinal marrow, blood, nerves, and the air in the governing vessel. In addition, people’s back muscles are longer than their abdominal muscles; their governing vessel is longer than their Conception Vessel. Having a position with a slight smiling curve is actually the most comfortable position though many children and the elderly are often reminded to have their chins up, chests out, and shrink the lower abdomen. As a matter of fact, people stoop and hunch their back unconsciously because it is the most comfortable position. If it weren’t for the desire to create positive impression, such as elegance and dignity, people would feel most comfortable with the position of a smiling curve.

In addition, according to a measurement done by X-ray, the length ratio of the anterior and posterior spinal longitudinal ligament should be less than 1. Only with this ratio can the space of the lumbar spinal cord canal be expanded to its extent. When a person is in the standing state, the ratio is 1.145. If the body slightly leans forward for approximately 0.95, like a bike-riding position, the lumbar posterior longitudinal ligament can be stretched open by the position of leaning forward, which can effectively increase spinal cavity space, lower the pressure in the lower lumbar backside, and reduce nerve compression.

In conclusion, there are many ways that can help people keep in good health, including various kinds of foods, equipment, and exercises. All of them can strengthen a human body to a certain degree. However, the most important thing is to solve the age-old problem—sore waist and aching back. The best solution found so far is using the NON-conventional sleeping positions and bedding in the shape of a smiling curve in order to regain people’s energy and alleviate their waist soreness and back pain. Once people’s waist soreness and back pain are alleviated, they can really get a good rest and can eventually maintain good health.

#### References