

**LIVING IN TUNE  
WITH YOUR BODY'S  
24-HOUR ENERGY CLOCK**

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# INTRODUCTION

## The Faustian bargain

Though many people think of Hong Kong as a large coastal city it is, in fact, an island measuring 427 square miles. Despite a century of urban expansion and deforestation, only 25% has been developed. Much of its territory is still quite rural and people who roam beyond Hong Kong's city limits soon find themselves in miles of virgin woods and hills rich with animal life.

As a young child I grew up in this mountainous terrain which, though only several miles outside the city's boundaries, could just as well have been inside a national park.

Always fascinated by nature, in the warmer months I slept out-of-doors under the open sky gazing up at the stars and the mysterious boundlessness of space. My six-year old mind was especially intrigued by the moon. I stared at it for hours in between dreams, asking myself all kinds of questions. Why is there such a big thing hanging above me in the sky every night? What makes it light up like that? What causes it to move from horizon to horizon? How does it affect the world, other people and me in particular? There's a great wire holding the moon to the earth, I thought in my childish imagination, an invisible cable connecting us to our planet so that we don't fly off into outer space; a cable that I later learned was called gravity.

I didn't know any of the answers to these questions, of course. But what I did know was that I felt a mystical connection to this beautiful shining thing, as if the two of us were made of the same cosmic stuff, and as if the moon somehow played an important part in my life in ways I didn't understand. All I knew was that it was part of me, like a family member. My sister, the moon, I called it.

As an adult I still think about this connection, but now in a more modern way.

For example, if we are all connected invisibly to the internet what is so strange about being connected invisibly to the universe around us as well? To the moon, sun, planets and stars. In our modern high tech world we live in a society that has little daily concern with nature and the earth. Most people think of the moon as little more than a waxing and waning ball overhead, if they think about it at all. They look down at their mobile phones or their laptops far more often than they gaze up at the sky, one of many symptoms of the disconnect that has arisen in the past hundred years between humankind and the water, air, fire and earth that gives us life and beauty.

As a result of this estrangement we find ourselves faced with machine-made, factory-made, technology-made, society-made problems that people a hundred years ago could scarcely have imagined.

We all know the usual suspects: toxic foods, deadly air pollution, the poisoning of our rivers, oceans, soil and drinking water, the massive extinction of animals, plants and insects necessary for the balance of life, and worldwide deforestation with its destruction of the earth's flora and oxygen supplies. There are nuclear bombs to nightmare over, perpetual war with its ever more ghastly weapons, global pandemics bringing new and terrifying diseases, 100 million homeless people wandering the planet, a world full of people racing towards a population number (10 billion) that exceeds the carrying capacity of the earth. Every day we face these and a dozen other end-of-world calamities, most of them caused by ignoring or exploiting nature's laws.

Considering this grim scenario, the question must inevitably be asked: What to do? What steps can I take in the face of these apocalyptic scenarios to make life better for myself, for other people and for the planet I live on?

## **The power of rhythms and cycles**

We can start with ordinary good deeds.

We can do charity work, support education, protect animal life, contribute to needy causes, vote for enlightened government, use non-polluting materials, become more environmentally aware and try to treat our neighbor as ourselves – to name a few. These altruistic endeavors and others like them are much needed, certainly. But they have their limits, primarily because they help fix the world outside us but do little to improve the world within, the world of our bodies, hearts and minds. As Confucius writes, “I can only make the world better by making myself better.”

When we arrange our lives in accord with the intelligence of nature that dwells at our core we live in the way nature wants us to live. As a result, many of the physical and psychological problems that have bedeviled us for years begin to fade, causing us to feel joyous about ourselves and the cavalcade of life around us. Everyone profits and society is raised accordingly. By improving the inward we automatically improve the outward.

A long-established way of accomplishing this task is by consciously living in conformity with nature’s primal cycles – the seasons, the rising and setting of the sun, the changing weather, and most importantly for this book, the needs of our bodies at different hours of the day and night.

Making this decision to live in harmony with the ordered structure of creation rather than give ourselves over to immoderate and sometimes dangerous habits of living rewards us in ways we might never anticipate. In traditional cultures people have always understood that human beings are not independent of other living creatures but are as much a part of the natural world as elephants, bumble bees and roses. We are all made of the same chemicals, animated by the same energies and beholden to the same physical laws. True, modern humanity has set its own rules and looks on itself as vastly evolved since the days of our earliest ancestors. Yet, as far as the gods of wind, water and earth are concerned, human beings still exist in their primitive natural state; seen through the eyes of Mother Nature all men and women are still cave people.

As a consequence, this means that nature’s laws were originally designed for the “natural man and women” who woke with the sun, spent most of their day hunting or taking care of children, went to sleep with the setting of the sun and lived with remarkable simplicity in small, highly social groups. For our early ancestors as well as for humanity today there was no escaping the natural influence of weather, wind, hot, cold, gravity, natural disasters, the four seasons, and on a personal level the three inescapable realities of this mortal life – aging, sickness and death.

We know, for instance, that our earth is directly influenced by the sun, moon, planets and even gamma rays emanating from the depths of the most distant galaxies. Solar flares, the rising and falling tides, the earth’s yearly rotation, the gravitational pull of planetary bodies, the 24-hour day, all are networked one with the other, producing a cosmic-sized, perfectly balanced machine that know it or not, like it or not, exerts a profound influence on all our behaviors.

Both theory and practice here are simple. In the spring and summer the strong, active force of Yang prevails. In autumn the passive, nurturing force of Yin is dominant. This same principle relates to a single day and night in our lives. The surge of blood and vital energy inside us (Qi in Chinese) flows stronger in the Yang hours during morning and mid-day, weaker in the Yin hours during late afternoon and night. With remarkable precision this daily Yin-Yang alternation corresponds to the seasons, the rotation of the earth and most of all to our body's 24-hour regulatory mechanisms. What happens in the universe around us every moment of the day happens inside our bodies as well. Our job is to connect the outer laws with the inner, and to then use this connection to establish a state of balance between body, mind and spirit.

## **A tool for the ages**

In this book I hope to introduce you to a little-known but amazingly powerful tool that will familiarize you with these laws and help you live more in unison with your body's needs and rhythms.

This tool, known as the 24-hour Biological Clock (or Bio Clock for short), is ancient yet surprisingly modern. It is practical, hands-on, simple to use and remarkably effective guide, showing you how to live each segment of your day in a way that maximizes your full physical and mental potential. Once put into practice, this tool will help you avoid ways of acting that society has told you are harmless but which over the long run can cause great harm. At the same time, it will assist you to follow lifestyle practices that put you in accord with nature's most benevolent influences and thus help you live a more energetic, successful life. Let me explain how the bio clock works by starting out with a story.

## **The story of effortless effort**

There is an ancient tale about a young warrior named Wan Lee who lived in China in the time of the Warring States (475 BC – 221 BC). Brazen and imperious, Lee was known as the greatest archer in all China and, for that matter, in the entire world. When shooting at a flying bird or an enemy soldier he never missed his mark. No one could surpass him.

One day while at home Wan Lee heard a loud knock at his door. Opening it, he saw a bent old beggar standing on the doorstep. The beggar introduced himself as Gan Ying.

"What service can I provide for you, O man of the streets?" Wan Lee asked in a patronizing voice.

"It is I who will provide you with the service," the old man said smiling, "and it is you who will learn."

Hearing this absurd claim, Wan Lee chuckled, both irritated and amused. "And just how do you intend to do that?" he asked

"Simple," replied Gan Ying. "Your reputation as a warrior and hunter lies in your great skill with bow and arrow. Is that correct? Yes, of course it is. But when I fight or hunt I have no need of bow or arrow. My bow and my arrow are in my heart and mind and in the energy currents that surround them. I have no need of anything as vulgar as a stick and string to do my work. Therefore, I am a true archer in harmony with nature and the Tao."

Hearing all this Wan Lee broke out into a huge guffaw.

Observe,” said the old man, ignoring Wan Lee’s outburst and with a firm hand taking his arm and leading him to a field behind the house. Here the old man reached down, picked up an imaginary bow, strung it with an imaginary arrow, positioned his fingers on the bow’s imaginary string, pulled and released, shooting the non-existent arrow into the sky.

Wan Lee looked on in amazement at this absurd performance, shook his head in disbelief and was about return to his house when a dead bird fell from the sky, landing at his feet. On its breast was an arrow wound but there was no sign of an arrow. Gang Ying then picked up the limp bird, breathed on it and the bird flew happily away.

When Wan Lee saw this feat of magic he was dumbfounded. After several moments he stammered out, “Can you – can you do that again?”

“Of course,” replied Gang Yang, and proceeded to bring down another bird with the same invisible bow and arrow, then raise it from the dead with the same life-giving breath.

Stunned by the marvel he had witnessed Wan Lee went down on his knees, bowed before the old man and in the most abject voice asked “Please, Master, teach me to become a true archer.”

Night and day for the next 20 years Wan Lee studied the arts of invisible archery with Gang Yang. During this time his brashness began to fade and he gradually became serene and humble. The more he practiced at his master’s side the more he felt a sense of oneness with the world around him and with the changing rhythms of nature. Gang Yin told him that the secret of a true archer’s skill is cultivated more in the mind than by mechanical exercises. In turn, Wan Lee spent less time using his bow and arrow and more time meditating and attempting to understand the rhythms of his body’s energy flow. At the end of his apprenticeship he became a full-fledged master, and it was said from then on no winged creature ever dared fly over his house, including even the soaring hawk and the fierce eagle.

Through the centuries scholars have interpreted this story in a number of ways. Though many of these interpretations are insightful, the one that resonates best with my own understanding is that reality begins not in the physical world but in the invisible realm, the world of will and energy. When warriors – and each of us is a warrior in our own way – approach the challenges of life knowing how the energetic realm works, this realm reflexively cooperates with us, helping every warrior man and warrior woman live a life more in attunement with balance, health and nature – that is, with the Tao.

Once aligned with the universe in this way we are then able, as the Taoists say, “to build a thousand walls and never lift a stone.” We are able to shoot a bird out of the sky without a physical bow and without a physical arrow. Known in Chinese as *wu wei* or effortless effort, this mysterious force is a spontaneous act that can move heaven and earth; yet it remains motionless in the center of a circle, relying neither on strength nor struggle.

So what is it exactly? How does *wu wei* express itself in human behavior?

This question is best be answered with metaphors.

*Wu wei*, it could be said, is relaxed but attentive doing, a gentle but relentless persistence. It is serene but fully focused awareness. It is hard work without exertion, energetic flow rather than muscular force, swimming with the current. It is detached involvement, accomplishment without ego. It is remaining calm while dealing with life’s most daunting hardships and complexities, all behaviors that align us with our own spiritual center and thus with the natural flow of time and space. A saying I once heard sums it up nicely: “Instead of saying try harder why don’t we say try softer?” The *Tao te Ching* describes this idea in the following way:

The wise man acts without acting  
teaching the world without uttering a single word.  
Things come into being and he lets them come.  
Things disappear and he lets them go.  
He holds the whole world in his hands but possesses nothing.  
He builds, gives and creates but expects no return.  
When his work is finished he forgets it entirely.  
And so it lasts forever.

This mysterious power of “doing in non-doing,” so fundamental to Taoist thinking, can inform our life on many levels. Most importantly for our purposes, it works through our inborn biological clock that ties us to the hours of the day and the rhythms and tides of the earth’s rotation. Most people are not aware of this important resource inside them, or if they are they tend to ignore it. Yet it takes so little effort to apply it and brings so many rewards, coming to us built-in, fully calibrated, wound and waiting patiently for us to put it to work.

## **Of men, fruit flies and the universe**

In October, 2017 three American scientists shared a Nobel Prize for an astonishing discovery: the cells in our body, they learned, contain a hitherto unknown mechanism that works in sync with the earth’s rotation and that controls our 24-hour cycles of sleeping, waking, digestion, elimination and most other primary functions that keep us alive and thriving.

Studying the genetic structure of fruit flies for more than 30 years, the three scientists (Drs. Michael Young, Jeffrey Hall and Michael Rosbash) isolated a particular protein in the fruit fly’s cell structure, noting that it oscillated on a regular basis, expanding during the day and diminishing at night. This pulsing rhythm promoted hourly physiological and behavioral changes in the fly that repeated themselves verbatim each day, establishing a fixed agenda of daily rhythms that the fly followed all its life.

With further research the three scientists discovered that:

- The mechanism inside each cell of a living organism is an intricate and innate timing device.
- These cellular timing devices are found in every organ, fluid and tissue of the body .
- Each cellular timing device is, as it were, self-winding.
- Cellular timing devices are present not only in fruit flies but in every multicellular creature on earth including certain microorganisms – and, of course, human beings.

This revelation allowed the scientists, in the words of the Nobel Prize Committee, “to peek into our biological clock, giving details on how plants, animals and humans adapt their biological rhythms so that it is synchronizes with the earth’s revolutions.”

With highly measurable precision, the committee pointed out, this inner clock is continually controlling our behavior every hour of the day and night, regulating our thoughts, emotions, hormone levels, body temperature, blood pressure, social behavior and sleep.

The biological functioning of every organism on earth, *including human beings*, the scientists thus concluded, is dependent for its livelihood not only on air, food and water but on the changing rhythms of day and night that living beings pass through at every 24-hour rotation of the planet. We are, it turns out, *literally* children of the earth, sun and moon.

## **Diurnality**

From time immemorial curious minds have noted the influence that light and dark exert on our mental functioning and physical well-being. In the West the first written observation of “diurnality” – the tendency of living things to become active in sunlight and inactive in darkness – dates to the 4<sup>th</sup> century BC when Androstenes, a sailor who captained a ship in the fleet of Alexander the Great, observed that the rustling of the leaves on the Tamarind tree makes substantially different movements during the sunlight hours than during the night.

For the next several thousand years little scientific inquiry was made on the subject of diurnal cycles until an 18<sup>th</sup> century scientist, Jean-Jacques d’Ortous de Mairan, established the existence of *endogeny* in the natural world; that is, biological behavior caused by reactions within an organism rather than those triggered by outside influences.

Jean-Jacques’s research led him to note that rhythmic movements on the leaves of the mimosa plant continue unaltered even when the plant is kept in total darkness for a 24-hour period, thus showing that the cells of the plant contain their own inner clock that continues to operate on schedule despite lack of outside stimuli. Over the next several centuries increasing work was done on the question of how day and night affect living beings until a major breakthrough occurred in the later part of the 20<sup>th</sup> century when scientists pooled their research to show that the cellular clocks in every living creature produce hourly body changes that can be tracked, mapped and analyzed. Using a kind of 24-hour chemical messenger service, these clocks tell the body when it is the best time of day or night to eat, sleep, work and play. Scientists refer to this messenger service as “Circadian rhythms.”

## **Circadian rhythms**

Circadian rhythms are the product, to quote the National Sleep Foundation, of a “24-hour internal clock that is running in the background of your brain and that cycles between sleepiness and alertness at regular intervals. It's also known as your sleep/wake cycle.” This clock, in turn, is governed by cues from the environment such as darkness, sunlight, heat, cold, moisture, time of day and time of month.

Based on planetary rotation, Circadian rhythms determine the times when you should be sleeping and the times when you are most awake. It reveals when your mental acuity is at its sharpest or dullest, when your emotions are up or down, when your appetite is strongest and weakest. It even provides advisory reports on which days of each month are best – or worst – for specific mental, physical and emotional undertakings.

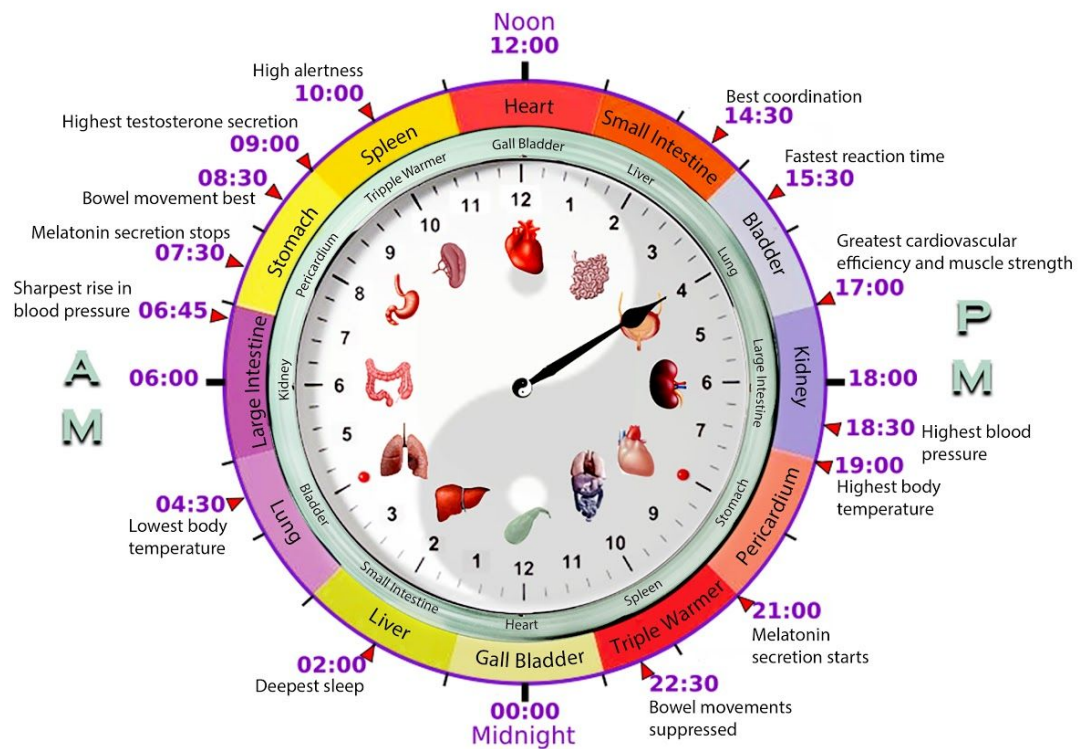
Every aspect of our daily life dances to the tune of the body’s biofield of organized energy and the rhythms it produces. There are Circadian rhythms that govern how quickly we can memorize a grocery list, how far we can punt a football, how long it takes our kidneys to process a glass of orange juice or a cup of coffee. Indeed, every organ and tissue in our body runs according to its own 24-hour timepiece. These individual timepieces, in turn, are governed by a single master body clock that coordinates and oversees the thousands of smaller clocks working under its direction.

Living in balance with our Circadian rhythms is crucial for maintaining good health; deviating from this balance quickly gets us into trouble.

For example, at bed time our Circadian rhythms tell us it's time to sleep. If we disregard this signal and stay out all night our bio-rhythms become disrupted. Too many nights spent ignoring these messages leads to fatigue, depression, weakening of the immunological system and eventually illness.

Studies show that most industrial accidents occur between the hours of midnight to 6 AM when a worker should be asleep rather than performing risky labor. Similarly, people who work a night shift are a good deal more prone to job-related accidents than those who keep normal hours.

Studies also show that on-the-job accidents occur more frequently on the day our clocks move ahead an hour to Daylight Saving time, depriving us of an hour of sleep. Heart attacks also spike in activity the day we "spring into spring." Though it seems negligible, a disruption of just an hour throws off our inner timer, disorienting our mental and physical faculties, and making us vulnerable to miscalculations and lapses in judgment. Then, of course, there is jet lag, a strictly modern disease that disrupts memory, triggers insomnia and sours moods. Depending on how many time zones we cross in a flight it may take days, sometimes even weeks, before our system fully resets its normal sleeping and waking routines.





### **Figure 1** (to be redrawn)

All things considered then, we learn three principal lessons from the study of Circadian rhythms, all of which also pertain to the main subject of this book, the body's include bioclock. These lessons tell us that:

- Time rules our biology.
- The internal biological clock rules our body rhythms and functions.
- By coordinating our habits of daily living with our body's natural rhythms, good health and a sense of well-being invariably follows.

Take a look at **Figure 1**.

Notice how different hours on this diagram are aligned with different body functions – temperature, sleep patterns, muscle strength, digestion and so forth. Notice too that during a 24-hour day-night period these functions are active at certain times of day and inactive at others, according to where they are located on the clock's circle.

### **Old versus new**

For Western science, therefore, the discovery of Circadian rhythms did much to explain the mechanisms of human behavior, and a good deal of exciting research work is currently being done with this information in the field of medicine, psychology, athletics, work place studies and many others.

At the same time, while the cycles of mental and physical behavior identified by Western science are a recent discovery, to the traditional oriental mind there is nothing new about the idea that the rhythms of night and day exert a powerful influence on our body and mind. If you consult the two thousand year old Chinese manual *The Nei Ching (The Yellow Emperor's Canon on Internal Medicine)*, the first book ever written on medicine and still considered the fundamental guide to its principles, the fabled Yellow Emperor describes in detail how important it is for man to live in rapport with the four seasons, the phases of the moon, the 24-hour rotation of the earth and especially the hours of the day.

Based on the Yellow Emperor's observations, scientists in the Orient have spent centuries developing their own representation of the body clock that in its present version is a good deal more detailed, comprehensive and hands-on than the Western model. True, while looking at both the Eastern and Western versions it appears that they are at least somewhat similar. But this is not the case. While it is accurate to say that both models operate on a 24-hour timetable, and that both are coordinated to different body functions, when looked at carefully it becomes apparent that the oriental version is based on a completely different set of medical principles than the Western model and on a profoundly different philosophical view of life and the universe.

Let's have a look.

### **Why I feel different at different times of day: introducing the 24-hour body clock**

The Chinese body clock is a 24-hour energy cycle that is hard-wired into the fabric of our blood, bones and organs. It starts ticking the moment we are born and continues until the hour of our death, operating 24 hours a day with the regularity of a chronometer.

One of the reasons people are plagued by so many health problems and negative states of mind in today's society is because the timing of their everyday activities like eating, sleeping, manual labor, making stressful decisions, having sex and so forth is out of sync with their body's biological needs of the moment. These problems can often be made to go away simply by learning to cooperate with the body clock's inner timetable.

Though technically speaking the body clock is a pattern of energies rather than a clock-like set of springs and flywheels, its workings can be grasped most easily when framed in a visual context. As a result, in the past hundred years or so Asian doctors have found that the best way to represent the body clock is, well, as a clock, complete with clock face, time zone sand numbers, as shown below in **Figure 2**

### **Figure 2**

Divided into 12 two-hour sectors, each of these sectors is associated with a particular organ in the body and with that organ's meridian. As the Qi circulates throughout the body's network of energy channels on its 24-hour daily course, each organ experiences a two-hour period of maximum energy and a two-hour period of minimum energy 12 hours later.

Based on this 24-hour movement between stamina and fatigue, there is a best and worst time of day for everything – a best and worst time for sleeping, eating, bathing, performing physical labor, exercising, toileting, playing sports, shopping, socializing, napping, having sex, attempting to become pregnant, drinking caffeine and alcohol. Also on the list are the most productive and least productive times of day for creative endeavors, learning, attending to paper work, remembering forgotten facts, planning projects, decision making, meditating, concentrating and a host of other physical, mental and emotional activities.

The body clock also serves to steer us away from behaviors that make us sick, some of them a bit surprising. For example, it tells us the time of day people with heart problems should *never* eat lobster. Or why it is healthier to nap around noon time than later in the afternoon. Or how we can avoid losing years off our lives by controlling the time of day and the frequency with which we have sex.

Finally, the body clock is used regularly in TCM for making medical diagnosis.

It is known, for instance, that the best time of day to treat an organ-related ailment is when that organ's Qi energy level is strongest. For those suffering from liver problems, pain often strikes in the early hours of the morning between 1 AM and 3 AM. A glance at the bioclock (**Figure 2**) shows that activity in the liver meridian is strongest during these hours, making this the best time of day to treat hepatic disorders. We also know that asthmatics often suffer their most severe breathing spasms between 3 AM and 5 AM, which also happens to be the time when lung meridian energy is at its strongest (see **Figure 2**). For this reason, asthmatic attacks respond particularly well to acupuncture during the early morning hours.

The body clock, in short, is a multi-leveled wellness device that oversees every aspect of our lives. By living in rapport with the cycles of night and day and with the 24-hour flow of energy through our meridians, we align ourselves with our environment *and* with the energy cadences that nature programmed into us from the day we were born. In the process we realize that the clock is a sophisticated and even magical life organizer that gives us far more control over almost every aspect of our thinking, feeling, health and social well-being than we ever

imagined possible. In this sense the clock's ultimate purpose is not only to help us live a happier, more balanced life but a longer one as well.

## **Longevity, the Organ Clock, and a message from nature**

A longer life? Really?

The question of longevity is controversial to say the least. Studies in the West maintain that the only scientifically proven way for human beings to extend their four score years and ten is to maintain a drastically reduced calorie intake for a number of decades – read near starvation diet for most of one's adult life. Every other activity touted as adding years to our existence such as exercise, healthy diet, positive state of mind and so forth clearly elevate our strength and outlook. But there is no scientific proof that they extend our existence for even a single day.

People in the Orient, on the other hand, have long considered longevity not only an obvious reality but a normal human duty.

This duty centers not so much on a regimen of healthy living activities as it does a daily juggling act whereby we attempt to maintain a constant equilibrium between behavioral extremes – between being too hot and too cold, acting too weak or too forceful, getting too much sleep or not enough, being too damp or too dry, feeling too happy or too sad, eating too much or too little. In other words, in order to increase our life span we must constantly monitor our daily conduct so that it is in conformity with nature's golden mean – the middle way between extremes. In Asian culture the art of right living is all about achieving balance; and the body's inner biological clock is one of the best tools nature has given us to get the job done.

Animals in the wild serve as a good example. When ailing, creatures of the forest have no doctors to call on. Yet barring accidents or predators most live out the natural span of their lives without once becoming sick.

How do they do this?

Basically, by constantly adapting to nature's daily and seasonal laws. When it is dark they sleep. When the light comes up they wake. When spring arrives they build nests and mate. In the summer they eat just the right amount of food to store up energy for the colder months. In the fall they live off their stored provisions. In the winter instinct tells them to hibernate, all according to seasonal schedule. Animals, in short, play entirely by nature's rules and nature rewards them with the vigor and good health to survive in the wild.

Human beings, on the other hand, talk about "conquering" nature, "taming" the weather, "overcoming" the laws of physics, even "defeating" death. As a result of such thinking (never before indulged in throughout all recorded history, I might add), we constantly break nature's rules, ignoring the messages of temperance that both our body and our common sense is sending us. We break these rules in dozens of different ways: by overeating, over-working, going on starvation diets, sleeping too much or too little, stressing ourselves over real and imaginary fears, fostering feelings of anger and resentment, keeping erratic hours, partying when we should be sleeping, "junking out" on processed food, smoking, overusing alcohol, taking drugs – you know the list.

We can, of course, get away with these indulgences for a period of time, especially when we are young. Nature is quite forgiving in this respect. But go against the natural order too long, break the rules of "heaven and earth" too often, and our body pays the price. Indeed, if our

built-in bioclock was standing in front of us this very minute and we asked it the question we asked above – what do you do? – it might answer in the following manner:

*There are rules of nature that dictate a correct time of day and an incorrect time for every human activity. If we live our lives in a way that adheres to nature's positive dictates as presented on this clock, all will be well. But err too much on the side of harmful habits for too long a time, continually neglecting the daily rhythms of wholesome living that our biology has programmed into us and serious things start going wrong, not only with our body but with our mind, emotions and spirit as well. The question has often been asked: why do we get sick? There are many answers. Ignoring the laws of the biological clock is one of them.*

## **The face of the clock**

Qi energy is constantly in motion, moving from meridian to meridian every two hours and circulating throughout all 12 of the body's meridians once every 24-hours. Though different graphic versions of this cycle have been used by TCM doctors over the years, today a majority agree that the best way to represent it is in the form of a modern clock – a wall clock if you will, hanging in your kitchen or bedroom, a clock complete with case, face, time zones and numbers, as shown below in **Figure 2**.

The clock's face, as explained, is divided into 12 sectors, each showing a particular organ. Each of these organs has a two-hour period of time each day when it is at the top of its game and its related meridians are most energized, affecting a range of functions from bowel movement to insomnia.

Notice on the clock that in each segment of its face one organ name is printed in **BOLD** letters, the other in *italics*. The name in bold represents that organ meridian's highest energy peak of the day while the organ in italics shows its lowest.

For example, during the hours of 11 PM to 1 AM the **GALLBLADDER** is in large bold type, meaning that the Gallbladder meridian is working at full strength. At the same time, the *heart* is in italics signifying that it is beating slowly and deeply while asleep, its meridian now at the lowest energy point in its 24-hour cycle.

This fluctuation between strong energy flow in the meridians and weak is the most important feature of the bio clock. If understood correctly it offers a kind of x-ray view into the hourly workings of the human body and the ways in which energy moves inside us as we wake and sleep. As we will see in the following chapters, we can then use this knowledge to improve whatever it is we are doing at any hour of the day.

## **Coming up: a 24-hour trip round the clock**

In the following chapters we will take a 24-hour trip around the 24-hour body clock, providing a chapter on each of the clock's two hour sectors, and explaining how each interfaces with our daily behavior. Before we move ahead, however, I have several suggestions that I think will make your experience using the bio clock a good deal more effective.

- There is no need to read this book straight through from beginning to end like a novel. It is fine if you choose to read it that way, of course. In fact, I invite you to do so; there is a lot of useful life information in every chapter. If time constraints or life demands make cover to cover reading impractical, however, that's okay too. Think of this book as a tool to be used in any way – and at any time – you so choose.

- Instead of trying to follow every suggestion in his book just use what resonates with your needs and tastes. Read the sections that interest you most. Follow the counsell that speaks to you and don't worry about the rest. What helps one individual may be of no interest to another. The idea is not to become a faultless person acting in perfect unison with the universe. The idea is to simply discover the most effective ways to comport yourself during the different hours of the day and night and then to use this information to improve your life.
- Think of this volume as a kind of guidebook that you keep with you mentally at all times and that is there for you to consult when needed. After becoming familiar with the ideas, plans, advice and suggestions offered, and after determining which ones work best for you, store them away in the guidebook inside your memory and use whenever necessary.
- The information in this book is information for a lifetime. Fifteen years from now you may remember one suggestion, just one, that you read in these pages. Perhaps you will then put this suggestion to use and be the better for it. The process of living in tune with the bio clock is a lifetime activity, a timeless and intuitive process rather than a linear one.
- Finally remember: The Organ Clock is always with you and is always at your service. Use it when you can, get the most out of it, live your life following nature's ideals as presented in these pages. After a while, as you become more attuned to life as nature prefers you to live it – guaranteed – you will see wonderful changes take place in your body, mind, heart, and above all, in your day to day, hour to hour quality of life.

## CHAPTER ONE: ANATOMY OF THE ORGANS

### **Anatomy of the organs Figure 1**

Illustration of the inside of the human body with all major organs labeled.

As you perhaps already know, Chinese and Western medicine define the concept of “organ” in significantly different ways. Western science looks on the lungs or liver or heart as a bundle of cellular tissue that performs physiological tasks exclusive to that organ itself. The lungs control respiration. The liver detoxifies the blood and adjusts metabolism. The heart pumps blood and oversees circulation. There is little crossover between the jobs each organ plays. In Western medicine the spleen would never be associated with digestion or the kidneys with brain health.

In TCM, on the other hand, an organ is considered to be more than a sack of tissue permanently fixed in a particular part of the head or trunk. It would be more appropriate from a TCM perspective to consider it a biofield of organized energy that radiates life force out in a number of different directions throughout the body, its impulses traveling along that organ’s specific energy pathway or meridian (the kidney meridian, the stomach meridian, the heart meridian, etc.).

Because an organ in TCM is more like an energy network or, if you will, a radio broadcasting station than a stationary body part it affects different areas of a person in ways not recognized in Western medicine. Though the jobs performed by these networks include all the recognized functions of that particular organ, they also provide what to the Western mind are unrelated add-ons.

For example, in TCM the lungs control respiration but also play a part in the development of the hair and skin. The kidneys exert control over the sense of hearing, the procreative organs and the marrow. The liver is associated with emotion or anger, women’s gynecological issues and the health of the eyes.

Because of an organ system’s ability to multi-task throughout the body along its network of meridians, a doctor of TCM rarely speaks in terms of a specific organ per se but rather of the energy delivery system associated with that organ such as the kidney meridian, the spleen meridian and so on. In TCM the 12 organs on the body’s bio clock, with their associated times and meridians, perform the following functions:

**The Gallbladder (11 PM to 1 AM)** – Since TCM does not separate mind from body, our principal organs exert a psychological as well as a physical influence on our behavior. For instance, the Gallbladder receives bile from the liver via the bile duct, stores it, then secretes it downward where it helps digest foods transiting through the duodenum. At the same time, it also oversees a man or woman’s emotional stability, courage and ability to make decisions. Individuals with a strong Gallbladder Qi tend to be confident and fearless with penetrating judgment skills and the courage of their convictions. Those who habitually exude feelings of bitterness and spite (there is a reason that the word “bile” is used to describe peevishness and ill-temper), who suffer from various phobias and fears, who lack assertiveness and/or are unable to think through problems and resolve them in a timely way may suffer from some variety of

Gallbladder weakness. Finally, the Gallbladder supports the sinews – the tendons and ligaments – providing its Qi to promote fluid, well functioning physical movement. On the 24-hour clock the Gallbladder is paired with its digestive partner the Liver and is opposite the Heart, making these opposite hours (11 AM to 1 PM) the weakest time of day for activities involving the Heart.

**Liver (1 AM to 3 AM)** – The Liver stores and detoxifies blood, aids digestion and helps regulate the volume of blood in circulation at any given time. It also controls the flow of Qi throughout the body, as well as nourishes the tendons, ligaments, eyes, finger and toe nails. Psychologically it is all about balance. An individual with a healthy liver is flexible, composed and in control. A weak or sick Liver often produces irritability, rigidity, depression and sudden, nasty temper flare-ups. People who suffer liver problems often find themselves waking up during the early morning hours between 1 AM to 3 AM, which is Liver time on the bio clock. In fact, if during an intake interview a TCM doctor hears a patient complain of habitual nighttime waking, especially during the hours of 1 AM to 3 AM, the first thing he or she thinks of is possible liver weakness. On the 24-hour clock the Liver is paired with its digestive partner the Gallbladder and is opposite the Small Intestine, making these opposite hours (1 to 3 PM) the weakest time of day for activities involving the Small Intestine.

**Lungs (3 AM to 5 AM)** – The lungs control normal respiration along with the inhalation and circulation of Qi, distributing this precious life substance through every cell in the body. In TCM the lungs also oversee the health of the skin, hair and sweat glands, protecting our outer body from invading pathogens such as excessive cold, heat, dampness and wind. Said in Western terms, the lungs play a central role in building immunity to bacterial and viral diseases. From a psychological perspective, the lungs are related to excessive grief and sadness. People suffering from depression or a chronic sense of guilt are often short of breath. The lungs are also responsible for our social connections with others. Strong lungs produce self-belief and resolve, making us feel equal to others and helping us build solid relationships with friends and associates. Weak lungs generate feelings of alienation and sense of disconnection from the daily flow of life. Finally, since Lung energy peaks during the early morning hours of 3 AM to 5 AM when there is lots of fresh morning Qi in the air, meditators and Qi Gong practitioners are often busy at their practice during this time (a half hour of early morning deep meditation, research shows, equals an hour of sleep). On the 24-hour clock the Lungs are paired with the Colon and are opposite the Bladder, making these opposite hours (3 – 5 PM) the weakest time of day for activities involving the Bladder.

**The Colon or Large Intestine (5 AM to 7 AM)** – The Large Intestine receives digested food residues from the stomach and small intestine, extracting water and whatever nutrients remain, then excreting the remainder. Like its paired organ, the Lungs, the Large Intestine is connected to the emotions of sadness, mental stagnation, grief and an inability to tap into life's excitement and pleasures. Note that when we wake in the early morning we often feel the urge to toilet. This is no coincidence, as Qi energy peaks in the Large Intestine from 5 AM to 7 AM, making this the most likely time of day to have a full, satisfying bowel movement. On the 24-hour clock the Large Intestine is paired with the Lungs and is opposite the Kidneys, making these opposite hours (5 – 7 PM) the weakest time of day for activities involving the Kidneys.

**The Stomach (7 AM to 9 AM)** – In TCM the stomach not only receives and processes food but also extracts Qi from what we eat, then transfers it on to the Spleen where it is further refined. In general, the stomach always moves nutrients, wastes and Qi downward for processing in the intestines. Under certain circumstances this process is reversed and the stomach becomes “rebellious.” If a person is poisoned, say, or suffers from a stomach flu the Qi energy moves upwards rather than down, causing vomiting, burping and hiccups. In a psychological sense, strong stomach energy is associated with confidence and security. People with weak stomachs often indulge in needless worry, tension, anxiety and introspection, all of which harm the stomach and inhibit digestion. On the 24-hour clock the Stomach is paired with the Spleen and is opposite the Pericardium, making these opposite hours (7-9 PM) the weakest time of day for activities involving the Pericardium.

**The Spleen (9 AM to 11 AM)** – The Spleen filters the blood, removes damaged red cells and constantly churns out new white blood cells. According to TCM, it also plays a major role in digestion, extracting nutrients from food and fluids and transforming them into Qi and blood. The Spleen likewise transports blood and Qi throughout the trunk and extremities, insuring that the muscles and limbs are strong and taut. Flabby skin and flaccid muscles can indicate a spleen deficiency. So can poor appetite, bloating, low energy, memory issues and weight loss. Just as Stomach energy moves downward, Spleen energy floats up to the Lungs, throat and mouth. If the Spleen is functioning properly, this upward movement produces mental clarity, good concentration powers and a lightness of being, especially in the morning hours between 9 and 11 AM when Spleen Qi is strongest. Fuzzy thought, confusion and an inability to focus and pay attention can all be signs of a compromised Spleen. Too much thinking, concentrating intensely for long periods of time and taxing mental work can likewise damage the Spleen. On the 24-hour clock the Spleen is paired with the Stomach and is opposite the Triple Burner, making these opposite hours (9 – 11 PM) the weakest time of day for activities involving the Triple Burner.

**The Heart (11 AM to 1 PM)** – The king of organs, the heart pumps and circulates blood and oversees the blood vessels. According to TCM, the Heart also houses the soul or spirit known as Shen. The Shen is five separate forms of consciousness in one. These include Yi or awareness, Zhi or will, Shen or ordinary feelings and emotions, Po or personality and ego, and Hun, the immortal Spirit that continues to exist after death. The Heart is connected to the tongue and hence to words. People who speak too fast, too slow, too seldom or too much may have unbalanced heart energy. When the Heart is strong a person tends to communicate and relate well with others. Emotionally speaking, joy is the emotion that rules the heart. There is, however, a good form of joy and a bad, the former being normal elation and delight, the latter being the kind of manic, over-excited giggling glee that one finds in anxious, highly nervous people and in the mentally unstable (think of a mad scientist’s laugh). People with Heart conditions should be especially careful of overeating and of becoming too angry or excited at these hours, as the Heart energy is at its maximum now, and pushing it with extra stress can cause Heart strain or worse. On the 24-hour clock the Heart is paired with the Small Intestine and is opposite the Gallbladder, making these opposite hours (11 AM – 1 PM) the weakest time of day for activities involving the Gallbladder.



**The Small Intestine (1 PM to 3 PM)** – The Small Intestine receives partly digested food from the stomach and continues to break it down into nutrients and wastes. It sends the Qi extracted from the food to the spleen for further digestion and forwards the inert wastes downward to the Colon for further processing and elimination. On the bio clock the hours of 1 PM to 3 PM is the best time to eat lunch, as the Qi energy is strongest in the Small Intestine at this time and digestion is working at full throttle. If there are foods that you especially enjoy eating but are difficult to digest now this is the time of day to eat them. On the 24-hour clock the Small Intestine is paired with the Heart and is opposite the Liver, making these opposite hours (1 – 3 AM) the weakest time of day for activities involving the Liver.

**The Bladder (3 PM to 5 PM)** – The Bladder’s job in TCM is to receive liquid wastes from the Kidneys, which in turn receives them from the Lungs and other organs of digestion. In cooperation with the Kidneys the Bladder then voids these wastes through urination. People often notice that their need to urinate increases in the late afternoon along with their thirst, a sign that the Bladder is especially active at this time. The late afternoon is a good time to drink lots of water, as it will be distributed throughout the cells of the entire body with maximum efficiency during these hours. Interestingly, the Bladder meridian runs all the way down either side of the spine, and each point on this meridian is associated with one of the major organs. This is one reason why a back rub feels so good – deep pressure applied to the spinal area stimulates these points which in turn stimulate the organs. Shiatsu and Tui na back massage specialists almost always concentrate on these points during a session. On the 24-hour clock the Bladder is paired with the Kidneys and is opposite the Lungs, making these opposite hours (3-5 AM) the weakest time of day for activities involving the Lungs.

**The Kidneys (5 PM to 7 PM)** – Compared with the Western view of the Kidneys as a simple blood filter and producer of urine the TCM version is responsible for a surprisingly large number of body behaviors. The Kidneys produce marrow, control the brain and urinary system, oversee the health of the hair, bones and sense of hearing, maintain fluid balance, govern sperm production, reproduction and the organs of sex, monitor short and long term vitality levels and house the will. People with weak or compromised kidneys tend to feel especially fatigued in the late afternoon and early evening, which is prime Kidney time. If they suffer from any form of nervous disorder they may feel especially anxious or uneasy at this time, as the Kidneys are associated with the emotion of fear. Conversely, those with strong Kidneys, especially young people, feel particularly full of energy at this time of day. For all these reasons the Kidneys are referred to in TCM as “the root of life;” and indeed, the life force itself, known as *Jing* in Chinese, is stored in the Kidneys. Too many careless or self-destructive living habits practiced over the years (especially substance abuse) can damage this precious organ and the *Jing* along with it, shortening a person’s life span in the process. On the 24-hour clock the Kidneys are paired with the Bladder and are opposite the Large Intestine, making this opposite time of day (5 – 7 AM) the weakest time of day for activities involving the Large Intestine.

**The Pericardium (7 PM to 9 PM)** – The Pericardium is a double-walled sac surrounding and enclosing the heart. Its primary function is to serve as a first line of defense for the heart, protecting this vital organ against possible injuries including those caused by external pathogens such as wind, cold, heat and dampness. Being closely associated with the Heart – when applying

treatment to Heart problems TCM doctors rarely distinguish between the two organs – the Pericardium oversees the flow of arterial and venous blood. It also oversees sexual secretions of different kinds, for which reasons it is sometimes referred to in TCM as the Circulation/Sex organ. It is, therefore, no accident that the Pericardium governs heart-associated emotions such as passion, attraction, love, joy, grief and sadness. In a person with healthy Heart and Pericardium energy personal affection flows freely, which is one reason why the early hours of the evening are a favorite time for romance and sex. On the other hand, if Pericardium energy is weak Heart-related conditions such as sadness, heartbreak, hyper-sexuality and frigidity can all result. A patient once came to me with a long mound on the center of both palms that stretched from the heel of his hand to the base of his middle finger. I asked if he had recently gone through a period of anguish or sorrow, and as it turned out his wife had passed away a year before. During this time the mound on his hand, which perfectly traced the line of the Pericardium meridian, had formed. On the 24-hour clock the Pericardium is paired with the Triple Burner and is opposite the Stomach, making this opposite time of day 7 – 9 AM) the weakest time of day for activities involving the Stomach.

**The Triple Burner (9 PM to 11 PM)** – The Triple Burner (also known as Triple Warmer and San Jiao) is not an actual physical organ but a water regulating mechanism located in three parts of the body: the upper part (lungs, head and heart), the middle part (stomach and spleen) and the lower part (the abdomen including the Kidneys and Liver), all of which play a role in managing the balance and flow of body fluids. In practice, the Triple burner is a kind of channel that energetically connects the above mentioned organs to each other and insures that fluids through the system in a harmonious way. These fluids include the vaporized water of the lungs at the top burner, the digestive process in the center burner and excreted waste products at the bottom burner. The Triple Burner also plays a part in maintaining proper body temperature and in moving Qi. During the Triple Burner hours (9 PM to 11 PM) people often notice that their stomach is a bit overactive, making strange gurgling noises. That sound is not just dinner; it is also the Triple Burner at work doing its job of moving fluids. On the 24-hour clock the Triple Burner is paired with the Pericardium and is opposite the Spleen, making this opposite time of day (9 –11 AM) the weakest time of day for activities involving the Spleen.

To sum up: When I speak of certain organs in the body as a doctor of TCM I am referring to the energy meridian belonging to that organ as well as the organ itself. In the clinical practice of oriental medicine a symptom in a particular organ is looked on as a secondary problem. The primary problem, TCM maintains, is found in the energy field that causes this symptom. If this energy is out of balance, if it is too strong, too weak, too hot, cold, dry, damp and so forth, ill health will eventually follow. If the energy field is in balance and its Qi is flowing evenly good health will result.

By performing a number of diagnostic techniques (with an emphasis on reading a patient's pulses and studying the color and texture of their tongue), TCM practitioners can sometimes predict physical problems well before the disorder itself appears. In fact, a saying in TCM has it that “symptoms are the last stage of a disease, not the first.”

Once diagnosed, the doctor then takes the appropriate steps to rebalance the patient's energy flow, eliminating the trouble in the problem area before it develops into a full-blown ailment. Reading a person's energy field in this way and then fixing potentially dangerous irregularities before they make that person sick is, in my estimation, true preventive medicine.

## CHAPTER TWO: GALLBLADDER TIME (11 PM to 1 AM)

### A new new day

We take it for granted that a new day starts at midnight.

Not so in Chinese thinking where a new day begins at 11 PM, a period known in Chinese as Zi time.

Zi time (11 PM to 1 AM) may sound like an arbitrary number plucked out of the air, but it is in fact based on the theme of this book, the body's 24-hour body clock, and especially on the activities of the Gallbladder which reaches its their peak energy level during this 11 PM to 1 AM time slot.

It is often said that three-quarters of health, both good and bad, is dependent on digestion, and few TCM doctors I know would disagree. Starting around 11 PM every night the body begins its internal cleaning cycle. What this means in terms of daily living is that it is best for our health, vigor and clarity of mind to be in bed and asleep by Zi time.

Why?

Because it is between the hours of 11PM and 1AM that the Gallbladder starts its heavy lifting, doing its most important digestive work in cooperation with the Liver, storing and releasing bile for digestion and helping the Liver remove a wide range of contaminants from the blood. If and when a person is awake and active during the hours between 11PM and 1AM, the Gallbladder and Liver functions are suppressed, allowing pollutants that would otherwise be dispelled to remain in the blood and eventually lodge permanently in the fat and tissue. Over the years these accumulations reach a kind of critical toxic mass, causing a number of ailments, not only of the Gallbladder and Liver but of the Spleen, Intestines and other organs connected with nutrient absorption.

Note as well that getting a sound night's sleep before midnight refreshes the mind for the next day's challenges, allowing a person to wake up feeling confident, alert and capable of making critical decisions – all Gallbladder-related benefits. At the same time, the negative emotions associated with this organ such as bitterness, confusion and resentment are to varying degrees kept in check by an early bedtime. You yourself know that going to sleep at a reasonable hour and waking with the sun gives you that special feeling of clear mindedness and the sense that all is well with the world. Conversely, a two or three o'clock bedtime followed by sleeping till eleven the next morning usually has the opposite effect, making us feel drowsy and muddy-headed.

In some cases, moreover, being asleep by 11 PM on a regular basis helps heal emotional traumas, particularly depression and grief. Going to bed at Zi time also strengthens Yang Qi, the body's reservoir of positive energy responsible for vigor, enterprise, passion, resolve, creative energy and overall sense of well-being. If a person insists on staying up late each night, the opportunity to produce Yang Qi at full capacity is lost and the next morning a person wakes up feeling tired, out of sorts and overwhelmed by the day's demands, all signs of Yang Qi depletion. As the ancient Chinese medical classic, *The Yellow Emperor's Classic of Internal Medicine* explains "When the Gallbladder Qi is strong the external pathogens have no way to invade, and the body's immunity will be enhanced, so that one is strong and healthy. If the Gallbladder Qi is insufficient, one will tend to be timid, indecisive and hesitant."

Here some qualification is necessary. Certainly there are many situations in life where going to bed after 11 PM is required and even advisable. A person may be working late, studying, socializing, romanticizing, staying up with a good book or a good video, whatever.

Fine. One late night or a dozen late nights do no lasting harm. The danger lies in decades rather than days – in staying up night after night, year after year without allowing the Gallbladder-Liver work to take its natural course. Damage is done over the long run; the short run doesn't matter very much.

Because the Yang Qi inside the body is basically the same as the Yang Qi emitted by the sun, moreover, the warming benefits of a sunbath each day have a wonderfully vitalizing effect on body and mind. For those who frequently stay up late a simple and effective method for regaining the Yang Qi lost the night before is to sit in the sun each morning for 15 or 20 minutes, mentally visualizing the Qi entering their body.

Though not possible for everyone, early risers find that the best time for getting their dose of Yang Qi is at sunrise. The sun is not too strong at this time, yet the health benefits are as just as beneficial as noon-time bathing. In the early hours there is very little UV radiation, which means if you are an early riser you can bask in the early morning sunlight as long as you want without feeling guilty. Seniors find that exercising in the sun during these early hours is especially restorative and a painless way to store up the Yang energy, a quantity that in most older people is low and constantly in need of recharging.

Finally, there are those who are diehard night owls or whose life for whatever reasons demands they regularly stay up into the wee hours. In such cases the important thing is to simply think of the 11 PM bedtime as an ideal, take advantage of early bedtimes when life allows and do the best you can.

## **The Yin and Yang of a 24-hour day**

As with everything else in nature a single 24-hour day is divided into Yang and Yin, with the day's energy levels waxing and waning in tune with the earth's rotation. Yang time begins at 12 midnight, peaks at mid-morning, and ends at 12 noon. Yin time starts at noon, peaks in the evening, and ends at 12 PM. Energy levels in all 12 segments of the clock increase and decrease in relation to this cycle.

For example, during the early morning Yang hours the world is still asleep and the Yang force is small but expanding like a new moon. Then dawn breaks and Yang becomes stronger along with the light. Early morning follows. The air is fresh, the birds sing, the sun is strong and bright. We plan our new day with hope and anticipation. By now the world is charged with high octane Yang Qi as the sun moves higher in the sky and the day comes to full bloom. Now is the time of enthusiasm and activity when projects are started, ideas hatched, creative juices flow, when the difficult work of the day is tackled. All is action, effort, endeavor. Yang Qi comes from the sun itself and the sun is the source of all energy.

Meanwhile, the morning passes and as high noon arrives subtle change in the day's energy level occurs. Yin time is now taking over.

Soon we notice that the shadows grow longer, the temperature drops, activity slows down at the office or work site, people take afternoon naps or wake-up trips to the coffee machine. By four or five o'clock in the afternoon most of us have done our share of the day's business. We are ready to finish things up, go home, rest, socialize and put the day's labors behind us, all

quintessential Yin activities. No doubt you yourself have noticed the subtle energetic changeover that happens each day as dynamic Yang morning time morphs into gentler paced afternoon time and then into restful, slow-moving evening Yin time. All these changes move slowly and inexorably as the day wears on, like the hour hand of a clock. This movement is not simply a shift of atmospheric mood but a sequence of fundamental cosmic transitions.

Here an analogy can be made between the 24-hour clock and the four seasons of the year.

Morning Yang time is like spring when life bursts out of the earth and nature awakens. Noon is analogous to summer; Yang is at its strongest during mid-day as the sun reaches its zenith in the sky. Then comes autumn, the evening of the year. Things stop growing, leaves fall and the earth sinks into a state of rest. Finally, as Yin reaches peak at midnight there is an equivalency to the season of winter, a time of darkness, hibernation, rest, restocking energy supplies and letting go.

At this point we begin to see a remarkable symmetry emerge connecting the hours of the day, the seasons of the year, the meridians, the organs of the body, and the interplay of Yin and Yang. This multi-leveled interface shows us in clear terms how the laws of nature mirror each other and how they work together on several planes at once. The perfect correlation between these natural elements of time and space is an important one to note and can be quite useful when referencing the bio clock.

## **Don't be fooled**

As evening wears on a person becomes increasingly sleepy and ready for bed. Then – sometimes and for some people – a strange thing happens. Around 11 PM they suddenly feel wide awake, and all thoughts of an early bedtime are forgotten.

But don't be fooled. This liveliness is real enough, and if you ride it for the next several hours it will keep you up and dancing well into the next day. However, you definitely do *not* need this energy right now as you prepare for a comfortable night's sleep.

The reason behind this sudden surge is due to the fact that in late evening Yin is nearing the end of its cycle and Yang is preparing to take the stage. It is during this onset of Yang Qi that the late night jolt of energy hits people as a natural part of the cycle of Yin and Yang, day and night. It is a natural thing but it can also seriously interfere with your sleeping plans.

What to do?

Ignore it. The recharged sensation is brief, and if you are already in bed stay there. The restlessness will pass and, some people believe, may even help you get a better night's sleep.

Remember, the Gallbladder and Liver are silent sufferers. When you misuse them or abuse them they do not react with immediate painful feedback as do, say, the lungs or the stomach. They simply accept your late night romping and do the best they can to clean your body's toxins under compromised conditions. If you get what an associate of mine calls "eleven o'clock sparkle time" just turn over in bed, keep your eyes closed, let it use itself up and you'll soon feel the urge to sleep returning.

## **Building your Yang Qi**

We know that the deepest and most physically restorative slumber time begins about a half hour after you fall asleep, which means that if you are in bed by 11PM optimum healing takes place during Zi time.

It is during this 45 to 90 minute period of deep sleep that our body functions slow to their lowest point: temperature and blood pressure drop, breathing becomes almost imperceptible and brain waves reach their lowest levels, ushering in what is known among sleep experts as Delta Sleep. During these critical hours tissue growth and cell repair is most active. Important hormones are released into the bloodstream, the body becomes more oxygenated, Human Growth Hormone (HGH) is secreted from the pituitary gland to promote bone and muscle growth, and sugar and fats are metabolized by the one-two combo of the Gallbladder and Liver. From a TCM viewpoint deep sleep is also the time when Yang Qi accumulates most fully, replacing the Yang Qi energy lost in the past 12 hours and strengthening every cell in the body for the coming day. Put all the above together and it becomes clear why it is so important that Zi time should be bedtime.

## **Daycare for your Gallbladder**

During Zi time there is obviously not a lot you can do directly to support the work of the Gallbladder since (ideally) you are asleep. At the same time, there is actually a great deal you can do. For when the Gallbladder is well nurtured and cared for during the day its digestive and cleaning functions work a good deal better at night. Here are some things you can do to that end.

- **Exercise** – Exercise is a proven aid for boosting both depth and quality of sleep. Choose whatever form of exercise that suits your schedule and needs. The important thing is to do it on a regular basis, as normal a part of your daily routine as brushing your teeth. Gym work, running, fast walking, swimming, rowing, calisthenics, aerobics, tai chi, Qigong, yoga, all relax the body and automatically improve the quality of sleep at night, even if exercise is done many hours before you go to bed. In fact, if you are going to exercise it is best to do so at least two to three hours before sleep.
- **Take a hot foot bath before bed** – A hot foot bath is a proven technique for encouraging relaxation and improving sleep. Make it as hot as possible and add a handful of sea salt or Epsom salt to the water for added relaxation benefits. The best time for a foot bath is around an hour before bedtime. The advantage of soaking just your feet rather than your whole body is that a foot bath warms the feet but allows the head to stay cool, balancing the body's Yin-Yang energies and making for a more comfortable night's sleep. A full body bath taken too close to bedtime also increases circulation and stimulates the nerves, two conditions that are more likely to wake you up than put you to sleep. If you have any question which of the two forms of water therapy is best for sleep simply experiment and use the one that works for you.
- **Avoid caffeine** – Especially after one or two in the afternoon. The stimulating effects of caffeine last from eight to ten hours after your last cup of black tea or coffee, so if sleep is a problem go sparingly. What about green tea? Some people actually take it before bedtime to help them sleep. Others find that the small amount of caffeine in

- the tea keeps them awake. If you are a green tea lover experiment to find out how well you tolerate a cup at night.
- **Eat a sound breakfast** – It doesn't have to be heavy. But it should be nutritious. Recommended for your morning meal are cereal (hot is better than cold), nuts, seeds, fruit, eggs, vegetables, kefir and yogurt. A favorite breakfast of mine is called Congee. It is simple to make and amazingly filling and nutritious. Add a cup of rice to a pot of water and boil for five minutes, adding a few drops of oil and a little salt. Place a lid on the pot and refrigerate overnight. Next morning add your foods of choice: nuts, scallions, pepper, chives, chopped eggs, goji berries or a few small slices of meat. Boil over a low flame for 10 to 15 minutes until the cereal has a farina-like consistency and enjoy. In our hectic modern world many people rush to school or work on an empty stomach. Besides under nourishing themselves for the day ahead, an empty stomach reduces the secretion of bile and weakens the digestive functions of the Liver at night. Over the long run, going without breakfast each day also increases the chances of developing gallstones.
  - **Help increase nutrient absorption** – If you take care of your Gallbladder during the day this bit of preventive medicine will enhance the absorption capacity of your digestive organs at night. By eating well, exercising, getting to bed at 11 PM and so forth your body gains an increased capacity to absorb vitamins and minerals from foods and fluids. Being proactive in this department also helps build and strengthen Qi and blood, helping your body's internal organs to work in quiet harmony.

**Figure 1.** Drawing showing Gallbladder meridian running along the side of the head.

### **Scratch the side of your head when you need to make an important decision**

Sounds crazy, perhaps. But hear out the logic.

According to TCM, the body is a kingdom and each of its major organs is an “official” helping to oversee this kingdom. The Heart is the body's CEO or king. The Liver is its prime minister. The Large Intestine is the executive in charge of waste disposal. Most importantly for our purposes – and as we have seen –the Gallbladder official is in charge of decision making, discretion and resolution.

Now as it turns out, on its bilateral journey from the head to the toes the Gallbladder meridian passes across the temple areas of the forehead (see **Figure 1**).

Go ahead, feel them. The temples are on both sides of the head in the hollows between the ear and outer edge of the eyebrows. This area is also located over the temporal lobes, an area of the brain that is responsible for memory, language, comprehension and emotion.

Since one of the fundamental tools of TCM is acupuncture, it makes perfect sense that scratching, tapping, rubbing, rapping lightly with the knuckles and/or making circular movements over both temples stimulates the Gallbladder meridian and hence the psychological perceptions associated with it including decision making and mental clarity.

So go ahead, you have nothing to lose. Next time you are faced with a tough choice – or if you're just feeling fuzzy-brained and confused – try scratching and rubbing the temples. The results are often surprisingly effective. And while you are at it go the sink, turn on the cold water and splash it on your temples. Combining cold water splashing and tapping/rubbing will give you even better results.

## **Avoid late night meals**

Generally speaking, it is advisable to eat dinner at least three, and better four hours before going to sleep. There are a number of good reasons for following this guideline. First, we eat a great deal in our twelve or so waking hours, and there is always a good deal of food slogging its way through our stomach and intestines. This constant process of digestion burns up life energy – in TCM the stomach is referred to as “the furnace” – which is why we often feel tired after a meal, and why sticking to an extremely low calorie diet over many years can prolong a person’s lifetime.

When we eat heavy meals at night, which on most tables contains a meat dish and perhaps a rich desert, the fat in these foods is especially difficult to break down at a late hour and can cause bloating and stomach pains that wake us up or at least contribute to a restless sleep.

Moreover, since bile plays an important role in digesting fat, insufficient bile secretion caused by night time snacking encourages fat to accumulate in the body, eventually leading to overweight and obesity.

Eating close to bedtime, it should also be pointed out, increases body temperature and metabolism, which leads to more activity during REM sleep and consequently nighttime restlessness and dreams. Several clinical studies including one done at the University of Montreal, plus a recent article in the journal *Mind and Body*, indicate that snacking before bedtime stimulates nightmares. This seems to be especially true if we eat rich or sugary foods like ice cream, pizza and chocolate.

Finally, be wary of taking a shot or two of an alcoholic beverage before bed time. Though alcohol has a relaxing effect and may help a drinker fall asleep, the quality of this sleep is poor and drinkers often wake up at three or four in the morning to find they cannot get back to sleep, a condition known as “alcoholic insomnia.” Alcohol, especially hard liquor, is a toxic substance and extremely unfriendly to the Liver. Drinking before bed puts extra stress on this organ, which is already working at full throttle to remove impurities from the system. The toxins in alcohol also interfere with the Liver-Gallbladder interface, so important for effective nighttime digestion. If you drink, do so as early in the evening as possible

The truth is that the human body is simply not programmed to eat late at night. Our plumbing and electrical systems are, as it were, engineered to eat during the day and then to clean house at night, breaking down and assimilating whatever foods we’ve taken in during the waking hours. To suddenly be besieged by a plateful of fresh food from a late night meal makes the digestive apparatus decidedly unhappy, and it is not shy about showing its displeasure with burps, hiccups, heartburn and indigestion. Whatever your dinner habits happen to be, avoid eating anything, even light foods like yogurt or rice, after eight o’clock in the evening.

## **Gallbladder tapping for good health**

**Figure 2** – Illustration showing the entire Gallbladder meridian from head to toe.

We have already seen how tapping the temple stimulates the Gallbladder meridian, increasing decision making power and promoting clarity of mind. Similar benefits can be gained by tapping other parts on the same meridian.



As you can see from **Figure 2**, the Gallbladder meridian is a complex channel that extends the entire length of the body with a series of crisscrossing branches running along the ears, side and top of the head. In this particular exercise our focus will be on the lower areas of the meridian. By tapping the line shown in **Figure 3** that starts at the hip, and runs down the lateral side of the thigh to the outer knee joint, then back again to the hip a number of important health benefits can be gained. These include improved circulation, removal of stagnant blood, increased bile secretion, improved digestion, massage of the joints and muscles, plus an overall sense of self-assurance and well-being. It is a good exercise to do when you are faced with important decisions or when you are struck with a sudden case of stage fright in front of a difficult situation.

**Figure 3** – Section of the Gallbladder meridian along the hips and legs to be tapped.

Tap along the channel in a moderate to hard way, experimenting until you find the right intensity and force for your comfort zone. Repeat for several minutes on each leg, or until you feel a slight internal heat. If your Gallbladder is compromised in any way, the tapping may be painful, a useful tool in itself for diagnosing hidden Gallbladder issues. If there is tenderness when you tap or if a bruise appears, stop tapping and instead apply massage, following the same route up and down the outer thigh from hip to knee joint and back.

For certain of my patients who are trying to lose weight, I often recommend that they tap the entire length of their Gall Bladder meridian several times every morning when they wake up and every night before bed (see **Figure 2**). Performing this exercise on a regular basis stimulates bile secretion and speeds up elimination of fats, both excellent ways to lose weight.

### **What to eat and not to eat for Gallbladder health**

Since the Gallbladder is an organ of digestion it is a no-brainer that what and how we eat each day determines how well its digestive dance with the Liver works at night. While an entire book could be written on the subject of proper Gallbladder nourishment, the advice below will get you started.

- **Recommended** - The following foods are recommended for building Gallbladder Qi, keeping bile flow strong, and feeding an ailing Gallbladder if it suffers from gallstones or related disorders:

Dark leafy greens	Grapefruit	Olive oil
Fish	Kale	Carrots
Dill	Tomatoes	Broccoli
Nuts of all kinds	Seeds of all kinds	Radishes
Peppermint tea	Garlic	Dill
Chives	Brown rice	Oats
Bran cereal	Lean meat	Low fat dairy products
Peanut butter	Avocados	Coconut oil
Turmeric	Cauliflower	Fruits of all kinds
Cumquats	Beetroot	Green tea
Beans	Peas	Bell peppers
Sardines	Celery	Apple juice

- **Not recommended** - For a healthy Gallbladder, and especially if you suffer from gallstones or a sludgy Gallbladder, the following foods should be avoided:

Fried and deep fried foods	Greasy foods	Red fatty meats
Eggs	Corn	Baked goods
Sausage	Cheese	Butter
Ice cream	Sour cream	Curry powder
Alcoholic drinks	Potato chips	Pork
Pizza	Chocolate	Meat gravy

- **Making a Liver Gallbladder flush** – Many health-minded people mix themselves a Liver-Gallbladder flush drink every spring. The season is important here; the flush will not work nearly as well in summer or autumn. Preparing it is easy. Mix a half-cup of virgin olive oil with a half-cup of lemon or grapefruit juice and drink. For the next few days avoid caffeine-based drinks like soda, black tea and coffee, and exercise as much as possible. The drink will clean out both the Liver and Gallbladder, getting rid of debris accumulated over the winter.
- Other helps and hints
  - Add lots of dandelion greens to your salads, especially during the spring . It will flush out your Gallbladder as well as clean your blood from winter debris buildup. The best kind is those picked in the countryside with the roots together.
  - Every morning squeeze half a lemon into a cup of warm water and drink. Lemon juice increases bile flow, especially when warm. There is some evidence that it reduces the possibility of developing gallstones as well.
  - Use as much turmeric as you can in your cooking and/or take it in capsule form as a daily supplement. The curcumin found in turmeric has powerful anti-inflammatory qualities that maintain the health of all the digestive organs, especially the Liver and Gallbladder.
  - If you have sudden Gallbladder pain or spasms, magnesium capsules can help ease the discomfort until medical assistance is available.
  - Take milk thistle supplements every day. A healing tonic for the Liver, it helps balance and nourish the Gallbladder as well.

### **Three Gallbladder acupoints to press for better health**

There are many acupoints running along the Gallbladder meridian that not only encourage bile production and healthy digestion but benefit other parts of the body as well. In a

doctor's office these points are usually treated with acupuncture needles. But not always. Healing can be produced by means of acupressure as well. Here are three Gallbladder points that respond especially well to pressing and digital stimulation:

**Figure 4** – Show the location of the Yang Ling Quan point.

**Figure 3** – Show the location of the Fengchi point.

**Fengchi point (Gallbladder 20)** – This point is located in the hollows on either side of the base of the neck (see **Figure 3**). Clasp your hands together, then press, making simultaneous circular motions with your thumbs over both points for three or four minutes. Repeat several times a day. Pressing these points is excellent therapy for relieving headaches, chills and dry eyes. It is especially useful for seniors who often catch cold or who are afraid of getting chilled from cold wind on their neck and shoulders.

**Yang Ling Quan (Gallbladder 34)** – This point is located in the anterior depression at the top of the thigh bone (see **Figure 4**). Rub this area in circles, massaging and tapping for one or two minutes. Stop for a few counts, then repeat three or four more times. As mentioned, one of the Gallbladder's duties is nourish and protect the tendons and ligaments. Stimulating this point will do just that along with clearing the Gallbladder of excess heat and expelling wind and damp from the legs.

**Figure 5** – Show the location of the Jian Jing point.

**Jian Jing (Gallbladder 21)** – This point is located in the center of the shoulder blade (see **Figure 5**). By vigorously rubbing and massaging the muscle here for four or five minutes the Gallbladder's power to refresh and protect the body's sinew will increase dramatically. You can rub this spot yourself but it's usually more effective if someone does it for you. A good Jian Jing massage feels restorative to the whole body.

### **The opposite side of the circle: protecting your Heart during Gallbladder time**

A glance at the body clock shows that the two hour segment ruling the Heart is located directly across the clock from the Gallbladder segment. This means that in the late evening and early morning Heart energy is at its lowest ebb and certain precautions should be taken to nourish and protect it. These include the following:

- Sorry to repeat myself, but try to be in bed by 11PM or thereabouts every night, not only for the sake of your Gallbladder and Liver but for your Heart as well. There are few physical activities (or inactivities if you like) that keep the heart happier and healthier than a good night's sleep.
- Avoid vigorous exercise during Zi time. This is the time when the heart needs to rest and refresh itself, not pump blood as if it was running a marathon. In general, it is best to do your exercise in the morning or earlier parts of the day.
- If sex is on the menu for the evening have it before 11 PM, especially if you have Heart problems of any kind. After 11 the Heart is particularly vulnerable to stimulation, especially sexual stimulation which I do not have to tell you gets the blood rushing, which means it puts a strain on the entire coronary system. On the

24-hour clock “Night time’s the right time for huggin’ and kissin.’” Just do it before eleven.

- If possible, avoid all personal conflict at night, especially during Zi time. People are tired in the evening and prone to be sensitive and irritable. If there is ongoing hostility at home between friends, family members, spouse, siblings and so forth try to keep a lid on it until the next day. Going to sleep with your heart racing from an argument is a ticket to a restless night’s sleep, poor digestion and for people with serious heart problems, a possible heart attack.
- Stay away from alcohol at night. Alcohol raises the fat in the blood, making the Liver and Gallbladder’s job more difficult and interfering with natural sleep patterns.
- Same with food. As said earlier, avoid eating three or four hours before you go to sleep, and be especially careful of eating large meals late at night. According to the American Heart Association, eating a heavy dinner later in the evening increases the chances of a heart attack four times.
- Same with stress. When you get in bed at night let go of the day’s business. If you meditate, now is the time to do so. Relax. Let the “evil energy” of stress (as acupuncturists refer to it) drain down your body and out through the soles of your feet. Go to sleep feeling at peace with yourself and the world. A tranquil, drifting unbothered mind at bedtime is still the single most important medicine for getting a good night’s sleep.