

# CHAPTER ELEVEN

## Traditional Chinese exercise

*As a general rule, humans have 360 joints, nine apertures, five repositories, and six storehouses. It is desirable that the skin be taut, the blood vessels open to free circulation, the sinews and bones hard, the mind and will harmonious, and the qi active. If all this is achieved, illness will find no place to lodge, and evil no means to grow. Illness remains and its malevolence grows because the qi are blocked. When water is blocked, it becomes stagnant; when a tree is blocked, it becomes infested with wood-boring insects; when a plant is blocked, it withers.*

The Annals of Lu Buwei, 3rd century BCE<sup>2</sup>

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*In all the world nothing is more pliant than water.*

*And yet it has no equal in resiliency against that which is hard.*

*It cannot be changed by anything.*

*That which is weak conquers that which is strong;*

*that which is soft conquers that which is hard.*

Daodejing, 4th century BCE<sup>2</sup>

Anyone who has visited China, Taiwan or Hong Kong and walked in the parks or open spaces early in the morning will have seen (nowadays mostly elderly) people performing the slow, fluid and seemingly effortless movements of tai chi. Others might be practising qigong - pronounced chee goong, and literally meaning the 'gong' (work or skill) of qi (vital energy). Or some might be standing completely still in meditative postures, training with swords, fans or wooden staves, slapping their bodies forcefully, or practising one of the many hundreds of styles of traditional body-mind training. There was a time, in the 1980s, when the passion for qigong reached such a peak that it was estimated 100 million people were practising daily. But modernity changes many things, and a mixture of political forces (which cracked down on some forms of qigong such as Falun Gong) and cultural change (the Chinese too now have a passion for gyms, jogging and yoga) have reduced their popularity, at least among the young. Yet as is the way of these things, a decline in China has been matched by growing enthusiasm in the West.

Whether in China or outside, those who engage in these traditional practices are continuing a unique exercise system that goes back at least 2,500 years - one that has been developed, practised and refined over the centuries. What is more, in the last couple of decades, research has begun to demonstrate how effective these practices are for promoting physical and mental well-being, strengthening the body and immune system, and preventing disease.

From the earliest days of Chinese health cultivation, exercising the body was understood to be essential to maintaining good health, especially since health preservation was mainly studied and practised by those with enough wealth and leisure to avoid manual labour. At the same time, in a culture where most people were engaged in grinding physical work, its wearing effects were plain to see. As a result, the idea of balancing exercise so that it was neither excessive nor insufficient (the middle way) arose.

*The human body ought to be exercised until it is tired, but this should not be carried to an extreme. As it is agitated [exercised], the digestion improves and the circulation through the blood vessels is freed so that disease is unable to arise.*

Hua Tuo, 3rd century CE<sup>3</sup>

The aims of traditional Chinese exercise have always been very broad. Soldiers and martial artists practised to develop power, balance, flexibility and mental focus; the sick practised to promote healing, and the healthy to secure that health; spiritual seekers practised to help still the mind, regulate the emotions and gain a deeper relationship with the Dao (see Glossary). Yet all of these practitioners, in one way or another, were working within the same tradition.

### *The evidence base*

A considerable body of research data has been building over the past couple of decades into the health benefits of tai chi, and to a lesser extent (because fewer studies have been conducted) of qigong. Virtually none have been carried out into other 'internal martial arts' such as xingyi and bagua (see below), but because these practices share common principles, it is reasonable to assume that the findings will apply to all of them to varying degrees.

Either tai chi or qigong have been shown to improve renal and cardiac function in kidney and heart disease patients, improve lung function, reduce blood pressure, reduce inflammatory markers in the blood, benefit metabolic syndrome, help diabetic neuropathy, improve the symptoms of multiple sclerosis, improve chronic fatigue, reduce fatigue in cancer survivors, reduce cancer therapy side-effects, increase testosterone, improve sleep, reduce prenatal depression, reduce stress, improve attention in young adults and cognitive function in elders, restructure the brain, delay cognitive decline, help overcome addiction and substance abuse, improve exercise capacity, help Parkinson's disease patients to improve balance and reduce falling, benefit knee arthritis, improve rheumatoid arthritis, promote arterial flexibility and muscle strength, reduce lower back pain and disability, improve ankylosing spondylitis, and much more.<sup>4</sup> A more detailed review of tai chi research and some of the science behind its benefits can be found in *The Harvard Medical School Guide to Tai Chi*.<sup>5</sup>

One of the first investigations was whether tai chi practice could reduce the risk of falling. Falling in the elderly can be a personal disaster if bones are broken (often signalling a descent into dependency), as well as a major economic challenge for health services. Figures from the UK show that one in three people over the age of 65, and half of those over 80, fall at least

once a year. This costs the National Health Service two billion pounds annually, not allowing for carer time and absence from work.<sup>6</sup> The costs in the United States in the year 2000 were estimated at 19.2 billion dollars.<sup>5</sup>

A 2010 review of 24 tai chi and qigong studies found significant benefits in ability to balance on one leg, improved gait, leg strength and flexibility, and reduced rates of falling.<sup>7</sup>

The same review also found increased bone density (reducing the risk of fracture if there is a fall), improved heart and/or lung function, improved physical function (for example speed of rising from a chair, walking speed, muscle and hand grip strength), improved quality of life and self-efficacy (confidence in performing tasks), decreased anxiety and depression and improved immune function.

## ***Principles of the Chinese exercise tradition***

### ***1. Integration of body, breath and mind***

*Once set in motion, the whole body is unified and must be light and filled with Spirit.*

Tai Chi Ch'uan Classic, 12th-14th centuries<sup>8</sup>

It is not unusual to see gyms full of people running, rowing and cycling on machines while watching TV or listening to pumping music. Or alternatively, if the exercise is boring, hard or unpleasant, the distracted mind is allowed to wander, to think of the past or future - anything to distract itself from the present moment.

This is alien to the practice of Chinese healing exercises in which mental state is at least as important as any physical movement. Broadly there are three interconnected ways in which the mind is integrated into physical training. These are cultivation of deep body awareness, active use of the mind to promote healing, and breathing.

#### **Body-mind integration – awareness and alignment**

*When your body is not aligned, the inner power will not come.*

*When you are not tranquil within, your mind will not be well ordered.*

*Align your body, assist the inner power, then it will gradually come on its own.*

Original Tao, 4th century BCE<sup>9</sup>

Body-mind awareness is when we allow the mind to still itself, to wander less and to dwell in the present moment. It is then absorbed into the body like water into a sponge, bringing as much of it as possible into our consciousness. As a result, we become more fully aware of our physical sensations, our breathing, our posture, the movements we are making. And especially if we are practising outside, we can extend the mind beyond the confines of the

body – becoming aware of the ground beneath our feet, the smells and sounds that reach us, the breeze on our skin, the sky above our head.

The practice of this kind of ‘meditative movement’ brings many of the benefits of meditation itself (outlined in Chapter 5) as well as helping us refine the physical component of the exercise practice. We are better able to relax, to soften what is tense, to be more aware of our alignments and misalignments and so on.

This mental component is not unique to ‘internal’ practices such as tai chi, qigong, yoga and Pilates. It can be introduced into any exercise, indeed any activity. We can be aware of the placement of our feet as they connect with and leave the ground, the lengthening and shortening of our muscles and connective tissue, the way we are holding and using our whole body, the stability of our core. In the development of technique in competitive sport or martial arts, this kind of refined body awareness is crucial to perfecting performance – a tennis serve, a leap over a hurdle, the launching of a javelin or a martial strike. This is why training in most Chinese martial arts traditions includes slow meditative movement which helps maximise such awareness and precision.

Body awareness is also vital to health because the unattended body is more prone to sickness and damage. We are more likely to suffer injuries, repetitive strain, chronic tension etc. when we have poor awareness of our posture, the position of our limbs, the placement of our feet and our centre of balance. And we will be less aware of the messages our body is sending us, including the warning signs of illness.

Good physical alignment and posture are also considered to have a healing effect in themselves. If depression, misery or anxiety cause our posture to droop, our chest to collapse, our body to become knotted, tight or weak, then adopting a strong, confident, open and relaxed stance can help counter these negative forces.<sup>10 11</sup> If we are easily distracted, swayed by every passing emotion, often become flustered and emotionally chaotic, then the practice of quieting the heart and mind, sinking the weight, rooting to the ground and creating a solid foundation, can slowly start to change these patterns. With regular practice, we can start to build the priceless qualities of emotional stability and resilience.

#### **Body-mind integration - harnessing the mind to treat disease**

*If your head hurts, become aware of your head; if your foot hurts,*

*become aware of your foot, using harmonized qi to attack the pain.*

*From one moment to the next, the pain will dissolve by itself.*

Nourishing Inner Nature and Extending Life, 7th/8th centuries<sup>12</sup>

*The practice consists in drawing together in one's body all the bad, the pathogenic, and the malevolent forms of qi, then one follows them, pulls them in and makes them leave forever.*

Treatise on the Causes and Symptoms of Diseases, 7th century<sup>13</sup>

We saw in Chapter 5 that a developing body of research is revealing the ways in which meditation can promote health and heal disease. This has been accompanied by a growing interest in mind-body medicine. Incorporating techniques such as cognitive behavioural therapy and biofeedback (developing conscious control of functions such as brainwaves, muscle tone and heart rate), it has proved effective in benefiting a wide range of physical disorders.<sup>14-17</sup>

The quotations above describe a much older form of mind-body medicine. This is the practice of daoyin (literally ‘leading and guiding’ and now largely supplemented by the modern term qigong) in order to heal disease.

Various methods are used in healing qigong, all of which depend in the first place on the ability to attain a degree of quiet and focused attention. There might be repetition of words or phrases such as ‘I relax’ or ‘I am peaceful’ or ‘I am becoming healthy’. We might centre attention on what are considered energetically important parts of the body, for example the soles of the feet or the lower abdomen (known as the ‘dantian’ = field of elixir). Or, we might direct our minds to a particular part of the body that is suffering illness or pain, then ‘breathe in and out’ of the affected region to let go of tension and encourage free flow, or visualise warmth, light or healing energy dissolving away the disease. These mental practices might be accompanied by slow and attentive movements which lengthen, release and mobilise the affected area.

Another simple practice that can change our physical and mental state is smiling. We can do this when we meditate – taking inspiration from the quiet, internal smile playing on the face of the Buddha in sculptures and paintings. We can consciously practise a relaxed smile (rather than contorting our face) in the midst of physically challenging training. Or we can practise the healing smile used in some qigong traditions such as mentally ‘smiling at’ each of our internal organs in turn, in friendliness and appreciation of the work they do. The point is that smiling operates a feedback loop. We smile when we are happy or feeling friendly or amused, and in turn the act of smiling reconnects us with those feelings. Smiling in this way has been shown to counter stress, stimulate the production of ‘feel good’ neurotransmitters such as dopamine, endorphins and serotonin, and function as an antidepressant.<sup>18</sup>

As Thich Nhat Ha, a Vietnamese Buddhist monk, said, “Sometimes your joy is the source of your smile, but sometimes your smile can be the source of your joy.”

### **Body-mind integration – breathing**

A final key aspect of awareness is the breath, and most forms of Chinese mind-body cultivation seamlessly integrate movement with inhalation and exhalation. As movement slows, therefore, the breath slows and becomes calm and deep. When both body and breath are wrapped up in full awareness, we can enter a state that is restorative, enriching and healing. A detailed discussion of breathing appears later in this chapter.

### **2. Internal and external, hard and soft**

*Better stop short than fill to the brim.*

*Oversharpen the blade, and the edge will soon blunt.*

*Yield and overcome;*

*Bend and be straight;*

*Empty and be full.*

Daodejing, 4th century BCE<sup>19</sup>

*The yang energy in people is firm; firmness without restraint turns into aggressiveness, like fire rising. Yin energy is flexible; flexibility without support becomes too weak, like water descending.*

Liu I-ming, 18th century<sup>20</sup>

*Hard exercises ... stimulate the nerves too much, strain the heart, and make it necessary that the person rest for a longer time ... A person who does a lot of hard exercises may not get sick, but may be overworking his body and exhausting his body's energy supply ...*

*You can see by those who do a lot of hard exercises; they do not seem to live as long as people who have been doing soft exercises.*

Sixty-six-year old tai chi practitioner<sup>21</sup>

There is a useful Chinese classification of the martial arts into external (wajia) and internal (neijia) styles that dates from the 17th century. Though the distinction is not in any way rigid, it serves as a guideline and has some relevance to all forms of exercise.

The external martial arts (sometimes called hard martial arts) tend to be more yang. They train for muscular strength, aerobic fitness and speed from the outset and are especially popular among younger people. They are often visually dramatic and are what most people think of as Chinese martial arts, for example the spectacular kicks and punches seen in kung-fu films or in Shaolin warrior shows. [It is worth noting, however, that while popularly thought to refer to martial arts, the term gongfu (kung-fu) describes any skill or accomplishment – playing a musical instrument, dancing, painting, cooking – that is developed through dedicated and concentrated practice, yet appears natural and effortless. As the 18th century writer Samuel Johnson said, “What we hope ever to do with ease, we must learn first to do with diligence.”]

These external, martial styles, which have attained the status of a sport in Asian countries and vie for inclusion in the Olympic Games, correspond loosely to many of the strength and fitness regimes taught today.

The more yin, internal martial arts (sometimes called soft martial arts), although they may also be physically demanding, begin with the cultivation of different qualities – mental stillness, body awareness, alignment and relaxation, core stability, balance and rootedness,

fluid stretching, soft power and full body integration. Preparatory exercises are usually performed slowly – allowing time to observe and perfect them before they express themselves in explosive martial power. Although they may be practised by young people, some find that they lack the patience and inner quietness for this work and move on to it after a few years of harder practice (often after injury takes its toll).

The most common forms of internal martial arts are the well-known tai chi, and the lesser known xingyi and bagua. There is also a significant overlap between the core exercises practised in these traditions and some styles of qigong.

The relationship between hard and soft physical practices is well explained by the functioning of the two branches of the autonomic nervous system. The ‘yang part’ is the sympathetic branch - responsible for our ancient ‘fight or flight’ response. The ‘yin part’ is the parasympathetic branch – responsible for our ‘rest and digest’ relaxation response. They have been compared to the accelerator (gas) and brake pedals in a car respectively. The yang sympathetic nervous system thrives on adrenaline and cortisol and kicks in at times of stress. Heart rate and blood pressure increase and we feel intensely alert and engaged at best, and uncomfortably stressed at worst. External exercise first stimulates sympathetic nervous system activity (the gas pedal) as we key ourselves up for its physical demands, then dissipates it as we train the body hard and end up feeling tired, comfortable and relaxed. However, it has less effect on training or stimulating the parasympathetic nervous system.

Internal exercise, by contrast, is better able to balance both branches. The sympathetic is engaged to a lesser degree as the body is worked less intensely than in hard exercise, but because of slow breathing, internal softness, and relaxation in the midst of effort, the sympathetic is also strongly activated. This can have profound long-term psychological effects as dedicated practice trains us to respond appropriately to stressful situations (while maintaining a calm core) and rapidly return to a relaxed state once the stress has passed.

What is known as ‘high vagal tone’ describes a flexible autonomic nervous system of this kind since the stimulation of parasympathetic activity is significantly controlled by the vagus nerve. This ‘wandering nerve’ runs from the brain to the heart and most of the major organs, carrying message in both directions. It is stimulated by slow, deep, abdominal breathing - a key feature of internal practice – which lowers heart rate, blood pressure and other stress responses.

One way that high vagal tone - and therefore a flexible autonomic nervous system - can be measured is by heart rate variability (HRV). HRV is that healthy variation in heart rate which occurs as we inhale and exhale. Low HRV is associated with a greater risk of several diseases, including mortality after a heart attack, congestive heart failure, diabetic neuropathy and depression. Various studies indicate that tai chi can improve vagal tone and benefit heart rate variability.<sup>22-25</sup>

It seems that the best way to exercise is to dynamically balance soft and hard – both by alternating them within a practice session and by integrating them at all stages of training.

### 3. *Free flow*

*Moving, be like water, still, be like a mirror”*

Zhuangzi, 3rd century BCE<sup>26</sup>

In the simplest terms, health can be defined in the Chinese tradition in two main ways – as harmony of the complementary forces of yin and yang, and as ‘free flow’. Free flow is the smooth and unobstructed circulation of qi, blood and fluid through the healthy body and essentially means that all bodily processes are working at their optimum state.

In terms of modern medicine, there is of course no such concept as qi. Yet blood must flow to every part of the body, and as we saw in previous chapters, there are parallels between the idea of free flow of qi and the smooth flow of blood. The latter depends on factors such as arterial elasticity, vasodilation (the ability of blood vessels to widen due to relaxation of smooth muscle in the vessel walls) and efficient microcirculation (the vital flow of blood within the thousands of miles of minute blood vessels in our bodies).

We saw that activities associated with promoting free flow in Chinese medicine have also been found to promote vasodilation and microcirculation – for example being happy, laughing, exercising, relaxing or meditating, drinking alcohol or tea, having sex etc. It is when qi and blood flow well that we feel most alive.

As far as exercising is concerned, from the Chinese perspective all bodily movement assists free flow. This is why we usually feel more vibrant after a session in the gym, a yoga class, a run, or a tai chi routine.

But the mechanism by which different types of exercise promote free flow is different. Strength training and aerobic exercise vigorously activate the heart, lungs and muscles, and pump blood round the body. The effect is rapid and intense. This kind of exercise can dramatically change our mood and act as a potent anti-depressant. The physical and emotional freeing up, however, may be relatively short-lived, especially if our default (non-exercising) state is one of tension and blockage, and if the root cause of any underlying stress is not addressed. In fact, as we saw in the previous chapter, the swift effect combined with its relatively short duration, can be a factor in exercise addiction – the unsustainable need to continually increase the frequency and intensity of exercise.

The quieter, more internal practices that make up the Chinese healing exercise tradition take a different approach to achieving free flow. Some – especially in martial training – may well be vigorous, but emphasis is always placed on the combination of softness with strength, relaxation with effort, and on mental stillness and presence in the midst of body work.

This is because it is understood that in living bodies, it is the innate nature of qi and blood to flow. When they do, we feel comfortable and free from pain and discomfort. If they don’t - because of blockage and obstruction - the result will be pain, unease or disease. Internal relaxation, softening and deep breathing – combined with the right kind of movement – can slowly help remove such obstructions and allow spontaneous flow to return.

When we begin to practise in this way, we might not experience the immediate effects of aerobic or strength training or static stretching. This is because it takes time to teach our body-mind new ways of being. The aim in the long-term, however, is a state of longer-lasting inner ease, of free flow, that sits deep within us.

#### 4. *The elastic body – the fascia*

*Human beings in life are soft and weak, in death are always stretched, stiff, and rigid. The myriad things, grass and plants, in life are soft and pliant, in death are withered and dry. Therefore it is said, 'Stiffness and rigidity are indicators of death; Softness, weakness, are indicators of life. Daodejing, 4th century BCE<sup>27</sup>*

*For all [to practice] this Way: You must coil, you must contract, You must uncoil, you must expand. Original Tao, 4th century BCE<sup>9</sup>*

*Being strong without letting strength go too far, being flexible without becoming ineffective, strength is joined to flexibility and flexibility is applied with strength. Liu I-ming, 18th century CE<sup>20</sup>*

*The legs stiffen before a man becomes old. Chinese saying*

Many conventional ideas about body flexibility have been turned on their head in recent years. Athletes and joggers are no longer advised to perform static (held) stretches, for example of the hamstrings, to warm up before running or performing. The evidence seems to be that these stretches are ineffective, or actually reduce performance.<sup>28,29</sup>

While many people (including, increasingly, sports professionals) engage in more profound flexibility training such as yoga or Pilates, some question whether increased flexibility - beyond what is required to perform everyday tasks - is beneficial or necessary at all.<sup>30</sup>

Despite this uncertainty, a few key points are indisputable. First of all, flexibility definitely diminishes with age - by up to fifty per cent - and this can lead to increasing difficulty in performing even basic tasks such as bending down to pick something up, cutting toenails, putting on socks or easily rising from a sitting position. The good news, though, is that this level of advancing stiffness can be reduced by virtually any exercise, since we generally maintain greater flexibility in joints we use than joints we don't use.<sup>31</sup> If we want to maintain a functioning body through to old age, therefore, we have to keep it mobile. Secondly, there appears to be a relationship between a flexible body and flexible blood vessels. A study which

tested participants' ability to reach forward and touch their toes when sitting with their back against a wall, found that for middle aged and older people, the more flexible they were, the more elastic their blood vessels were and the lower their systolic blood pressures.<sup>32</sup>

But if static (held) stretching has minimal apparent benefits, at least on athletic performance, how might we go about maintaining elasticity in the body? One answer lies within the Chinese tradition of internal exercises. In pursuit of physical practices which maintain the health and vigour of the body, and which - when applied to martial arts - deliver the greatest power, a whole tradition of body wisdom has developed. Continuous, slow movements which lengthen and release (rather than stretch) all the tissues; spiralling movements of the waist and limbs; moving the whole body as a single integrated unit rather than just working isolated parts - all these are found in the practice of qigong (for example the sinew-transforming, bone marrow washing and eight brocade styles) and the internal martial arts. The practice aims to solidify the bones, strengthen the sinews while maintaining their elasticity, mobilise every joint in the body, stabilise the core, and relax and align the body in the most efficient way. And what is remarkable, is that the wisdom of this ancient knowledge has found its modern explanation in the developing science of fascia.

#### *The fascia*

*The fascia of the human body is a continuous sheath of tissue that moves, senses and connects every organ, blood vessel, nerve, lymph vessel, muscle and bone. It is a continuous, three-dimensional, whole-body matrix, a dynamic metasystem that interpenetrates and connects every structure of the human body ... research has demonstrated that fascia should actually be considered as an organ that provides a unified environment contributing to the functioning of all body systems. An Introduction to Classical Fascia Acupuncture, 2014<sup>33</sup>*

*There is no part of the body, no kind of tissue, no single cell, that is not supplied by the channels [meridians] ... The channels penetrate the zangfu and the extraordinary fu [i.e. the organs] in the deepest levels of the body and connect with the skin, muscles, flesh, tendons, and bones, the head, body and limbs, and the sense organs, linking all the tissues and structures of the body into an integrated whole. A Manual of Acupuncture, 1998<sup>34</sup>*

*The muscle-bone concept presented in standard anatomical descriptions gives a purely mechanical model of movement. It separates movement into discrete functions, failing to give a picture of the seamless integration seen in a living body. When one part moves, the body as a whole responds. Functionally, the only tissue that can mediate such responsiveness is the connective tissue.*

*The Endless Web: Fascial Anatomy and Physical Reality, 1996<sup>35</sup>*

Until the latter part of the twentieth century, anatomists tended to consider the animal body in terms of a machine, made up of individual parts that performed specific functions. Nowhere was this more evident than in its perception of body movement, where individual muscles – alone or in combination – were seen to move individual bones and joints. Athletic training increasingly sought to isolate these muscles and find ways – using tailored techniques and machines – to build and strengthen them.

In anatomical dissection, it was taken for granted that in order to reach the really important structures - muscles, organs, nerves, blood vessels and bones - it was necessary to cut through and push to the side the webby layers of connective tissue that surround every one of these, and indeed permeate every part of the body.

Yet in an astonishing turnaround, this largely ignored, discarded material – the soft fibrous connective tissue within the body that goes under the broad title of the fascia – has in recent years become one of the most studied anatomical and physiological phenomena of living bodies.

Fascia has been defined as the ‘biological fabric that holds us together’.<sup>36</sup> It enables the body to respond as a ‘tensegrity structure’ (when one part moves, every other part moves in response), to maintain alignment and balance. This underpins the growing realisation that the kind of exercise which best maintains the health of the fascia is one which moves the body as an integrated whole.

When we are young, the fascial tissues show clear folds or undulations which have been compared to elastic springs. This elasticity – which is unrelated to simple muscle strength – gives young humans and animals springiness and bounce (think of a gazelle’s or a young lamb’s astonishing leaps on the most delicate and fragile looking legs). As we age, the fascia lose this springiness and the undulations flatten. And when we sit for long periods, or distort our physical alignment and structure through poor posture, repetitive work or leisure activities, patterns are imprinted on the fascia. They no longer glide against each other but form adhesions and become matted, firm and overly dense. The consequence is pain, impaired movement, stiffness and poor health. It could therefore be said that as far as movement is concerned, our bodies are as young as our fascia.<sup>37</sup>

The good news is that - like muscles - the condition of the fascia can be improved by movement. But the kind of movement that maintains the flexibility of fascia is of a particular type. Pumping iron will have relatively little effect, and while aerobic exercise will influence the fascia more, the best exercises rhythmically coil and uncoil the connective tissue, using a wide variety of movements (rather than one-dimensional ones such as on a rowing machine or bicycle), spiralling and twisting through the whole body, and bouncing (to enhance elastic recoil). The aim is a strong, flexible, youthful body that is less likely to be injured when we play sports, lift and carry, and perform normal daily activities and work.<sup>38</sup>

Regularly practising these ways of moving can re-programme the fascia but it is not a fast process and can take many months.<sup>38</sup> This might explain the relatively low take-up of qigong and the internal martial arts in Western countries. It takes time to experience the rich

rewards of these traditions – at least compared to the rapid and more immediate payoff of strength training, aerobic training and even yoga.

One of the striking things about modern fascia studies is the close match with Chinese medical theories about the body. Until recently, no significant research has been able to find anatomical structures that correspond to the channels (also called meridians) of acupuncture. What is traditionally said of them is that they interpenetrate the whole body, connecting interior to exterior, top to bottom, side to side. They unify all parts of the body into an integrated whole. They are activated by qigong practice, by local skin stimulation using massage and heat, and of course by the use of acupuncture needles.

One of the first ground-breaking books on fascia identified ‘trains’ of fascial and myofascial linkages that in many cases closely match the two-thousand year old descriptions of channel pathways.<sup>39</sup> Going further, fascia researchers such as Helene Langevin, an American neuroendocrinologist, consider the fascia to function as a body-wide communication system, transmitting electrical, cellular and tissue remodelling signals throughout the body.<sup>40</sup> It is no surprise, therefore, that Langevin’s research also focuses on the way acupuncture needles connect to and stimulate fascial tissue, transmitting cell-changing effects some distance from the site of needle insertion.<sup>41</sup> Langevin’s research has found that more than 80 per cent of traditional acupuncture points on the arm are located along connective tissue planes.<sup>42</sup>

Both the exciting new understanding of fascia, and the ancient tradition of the acupuncture channels, help explain how the right kind of relaxed, whole body movement can enhance health and well-being.

### 5. Rootedness and balance

*If people can be aligned and tranquil,  
Their skin will be ample and smooth,  
Their ears and eyes will be acute and clear,  
Their muscles will be supple and their bones will be strong.  
They will then be able to hold up the Great Circle [of the heavens]  
And tread firmly over the Great Square [of the earth].*  
Original Tao, 4th century BCE<sup>9</sup>

It is obvious that in any sport or martial art, rootedness (maintaining a low centre of gravity so that we are not easily pushed aside or knocked over) and balance (maintaining rootedness even when moving), are vital skills. Yet these are equally important qualities to cultivate for wider health and well-being – even if we have no interest in sport or martial arts.

They have an obvious practical application that grows in importance as the body ages. Stability and sure-footedness help maintain agility and reduce the risk of falling. And beyond that, cultivating rootedness, balance and alignment can influence our mental state and foster emotional stability and resilience as well.

As we saw in the research section above, tai chi and other Chinese internal exercises have a wonderful effect on improving and maintaining balance, especially in the ageing body.

## 6. Breathing

*To guide the qi, allow it to enter deeply [by inhaling] and collect it [in the mouth].*

*As it collects, it will expand. Once expanded it will sink down. When it sinks down, it comes to rest. After it has come to rest, it becomes stable ... Who practices like this will attain long life. Who goes against this will die.*

The dodecagonal jade block, 4th century BCE<sup>43</sup>

*Just let a balanced and aligned [breathing] fill your chest, and it will swirl and blend within your mind. This confers longevity.*

Original Tao, 4th century BCE<sup>9</sup>

*As for the vitality of all human beings, it inevitably occurs because of balanced and aligned [breathing]. The reason for its loss is inevitably pleasure and anger, worry and anxiety.*

Original Tao, 4th century BCE<sup>9</sup>

*The perfected breathe all the way to their heels, unlike ordinary folk who breathe only as far as their throats.*

Zhuangzi, 3rd century BCE<sup>44</sup>

*When the breath or energy of the individual is congested and stagnant, the muscles and the bones are contracted and don't flex well.*

The Annals of Lu Buwei, 3rd century BCE<sup>45</sup>

*Use the new and expel the stale, so that the circulation within your veins remains free-flowing.*

The Annals of Lu Buwei, 3rd century BCE<sup>46</sup>

As the above quotations show, breathing is a core part of most of the Chinese health and martial arts traditions, seamlessly integrated into their physical and mental practices. Indeed a modern Chinese text book on qigong defines it as 'the skill ... that integrates body, breath and mind ... into one.'<sup>47</sup>

This kind of breathing is traditionally described using six terms - slow, long, deep, fine, even, and tranquil.<sup>48</sup> As far as 'deep' is concerned, this means that rather than breathing into the chest, the breath is mentally taken right down into the lower body – to fill the lumbar area, lower sides, and lower abdomen.

Chinese medicine describes the time spent in the womb, when we are still directly nourished by our mother, as 'pre-heaven'. From the moment of birth, however, we depend on our own devices to create the energy to sustain life and this starts with our first breath, swiftly followed by our first feed. In this post-heaven period, and throughout the rest of our lives, breathing and eating will be the primary sources of our growth, vitality and body repair.

It is no surprise then, that regulating the breathing is a core part of so many health practices.

## How to breathe

The lungs can expand in all three dimensions ... upwards/downwards, sideways, and forwards/backwards. Because of constraint from the rib cage, however, the greatest possible area of expansion is downwards.

When we deepen our breathing, the diaphragm descends, pushing down the abdominal contents and allowing air to fill the lower lobes of the lung which are rich in blood vessels and so able to absorb oxygen efficiently.

Breathing is unusual among our visceral (body organ) processes in that it can be both unconsciously maintained (like the beating of the heart), and consciously controlled. For most of the day we are unaware of breathing in the same way that we are unaware of our digestive process. Unlike digestion, however, we can choose to control breathing, and in both the Chinese tradition and in modern stress and anxiety management training, the emphasis is on slow and deep abdominal (diaphragmatic) breathing, rather than breathing into the chest walls.

The conventional way of learning this breathing is to sit in a chair – relaxed but upright, so that the abdomen is not restricted. One hand can be placed on the chest, and the other on the abdomen below the navel. As we inhale, the hand resting on the chest should barely move, while the hand on the abdomen will move outwards as the abdomen expands like a balloon on inhalation, and sinks back on exhalation.

Inhalation should always be through the nose (if possible), while exhalation can be from the nose or mouth. The art is to allow the breathing to become smooth and relaxed of its own accord, and never to try to make it so. Forcing the breath by trying to inhale or exhale too deeply, or holding it for extended periods, risks causing mental agitation and disturbance, rather than calm.

When we allow the breath to sink, rather than forcing it, while maintaining a calm and centred attention, the breath will begin to slow down naturally. As we practise and gain experience, we can start to feel the breath filling the whole pelvic region, not just the front of the abdomen where we practised resting the hand, but also the sides, the lower back and the pelvic floor. Like all worthwhile skills, this requires patience to develop but in time the experience will be deeply rewarding.

Breathing in this way can slow the heartbeat, lower or stabilise blood pressure and help in the relief of anxiety.<sup>49</sup>

*Breathing - the medical and research base*

According to a 2004 study, slow, deep breathing can decrease sympathetic nervous system activity (the ‘fight or flight’ stress response), enhance parasympathetic activity (its opposite, the calming, ‘rest and digest’ response), improve respiratory and cardiovascular function, and enhance physical and mental health.<sup>50</sup>

Abdominal or diaphragmatic breathing is widely taught nowadays to relieve anxiety and stress. The University of Texas’s Stress Management website, for example, has a simple but useful instructional video.<sup>51</sup>

In a study carried out in the dental education department of the Southern Illinois University School of Medicine, students who were taught deep breathing meditation reported reduced test/exam anxiety, nervousness, self-doubt and loss of concentration and believed it helped them academically.<sup>52</sup> In fact it was so successful that the method has been successfully implemented every academic year since.

*Breathing and rooting, the Chinese medicine view*

It is sometimes said in Chinese medicine that the human body has a design fault. In common with all creatures, we are alive, which means that we have abundant yang energy, but uniquely we also stand upright (yang). As it is the nature of yang to rise and expand upwards and outwards (yin by contrast sinks and condenses inwards), there is a tendency for the normal upward movement to become excessive. This can give rise to two categories of problems – physical and emotional.

*Uprising of yang - physical disorders*

When yang qi rises excessively to the upper body and head, it can give rise to disorders such as high blood pressure, dizziness, strokes, and some kinds of headaches and migraines. At the same time, as it rises, it can abandon the lower body, leaving it weak and deficient. We then lose our ‘root’, becoming less sure-footed and subject to stumbling and falling. Although this unbalanced pattern is more likely to occur as we age (when declining yin can no longer anchor rising yang), rooting downwards is considered a vital practice at all ages. It is the basis of agility, stability and lower body strength.

Sinking the breath to the lower abdomen can help the rooting process which can be enhanced by mentally taking it even further down the body and ‘breathing’ through the soles of the feet. Or else we can imagine the breath entering the soles from deep inside the earth as we inhale, and returning to the earth as we exhale, thus drawing energy away from the brain. This is mirrored by the Chinese folk custom of soaking the feet in hot water before bedtime in order to draw the yang qi down from the head to benefit sleep.

*Uprising of yang - the mind and emotions*

If uprising of yang affects the spirit (shen) which is traditionally said to reside in the Heart and the brain, then it can agitate it, giving rise to symptoms such as insomnia, anxiety, worry,

nervousness, restlessness and palpitations. The practice of slow abdominal breathing helps to ‘sink’ the energy back downwards, quieting the Heart and brain, and relaxing and stabilising the spirit. As we have seen, this method is now widely used in the treatment of anxiety.

The tendency of yang to rise excessively is one reason that practitioners of the internal healing arts prioritise sinking and rooting - certainly during the first few years of practice. Trying to raise the qi through the spine or focusing the mind on the head and brain, can sometimes cause severe psychological problems in vulnerable individuals.

The physiological effect of abdominal breathing is enhanced by the meditative effect of focusing awareness on the simple act of breathing. The mind starts to quieten, disturbing and chaotic emotions begin to abate, and we learn to get out of our heads and return to the lived body.

***Internal exercises – the spiritual dimension***

*The Tao begot one. One begot two.*

*Two begot three. And three begot the ten thousand things.*

*The ten thousand things carry yin and embrace yang.*

*They achieve harmony by combining these forces.*

Daodejing, 5th century BCE<sup>19</sup>

*As for heaven and earth, they are the above and the below of the myriad beings.*

Yellow Emperor’s Inner Classic, from 2nd century BCE<sup>53</sup>

*In the human body above and below depend on each other, rise*

*and fall change rhythmically.*

Sima Chengzhen, 647-735<sup>54</sup>

The practice of the internal and healing arts is considered by many to include a ‘spiritual’ dimension, and to be a path to the gaining of wisdom. This may be hard to understand, and it would be fairly unusual to say the same about something like jogging or lifting weights.

The internal arts, however, take much of their inspiration from Daoism, and from yinyang philosophy.

One of the key principles of Daoism is to ‘follow nature’ and as is discussed in Chapter 16, many healing and internal martial practices take their inspiration from natural phenomena such as clouds, water, trees and mountains, or from the movements of animals. This helps to cultivate a sense of connectedness and belonging to the wider world, and to help counter egocentricity and alienation.

As far as yinyang is concerned, this runs through every aspect of practice. Rooting, contracting, and sinking the weight into the earth are all yin, while rising towards the sky, lengthening and uncoiling are yang. When the body contracts and expands, coils and uncoils

rhythmically, in harmony with the washing in and out of the breath, it is aligned with these basic, binary forces of the universe.

Going beyond this, in meditative standing, attention can be focused on the still centre at the body's core. This is known as the wuji (literally 'without ridgepole' and meaning 'boundless' and 'infinite'). The wuji in Chinese philosophy describes the condition of the universe before anything existed, before duality (yin and yang) came into play. In standing practice, the wuji is a place of 'empty fullness' and also one of infinite potential. 'Empty fullness' because it is the richly still point between up and down, forward and backward, left and right, and 'infinite potential' because movement in any direction can begin from there.

When, in the midst of practice, we quiet our minds and begin to forget our burdensome selves, attuning ourselves to the rhythm of the universe or the stillness of the wuji, we may experience moments of transcendence, of unity and of connectedness.

### ***A word about practice***

*You must be firm, you must be regular [in this practice].*

*Hold fast to this excellent [practice]; do not let go of it.*

Original Tao, 4th century BCE<sup>9</sup>

*One thousand days to learn, ten thousand days to refine.*

Japanese proverb

*Motivation is what gets you started.*

*Habit is what keeps you going.*

Jim Ryun, runner, 1947-

*You can't fatten a pig on market day.*

English saying

Whatever skill we want to develop to a level that enriches our lives - playing a musical instrument, learning a language, a craft or a sport, meditating, dancing - we need to practise. Echoing the Japanese proverb above, the journalist Malcolm Gladwell (in his 2008 book *Outliers*) popularised the idea that 10,000 hours of practice were required to develop expertise in any field. This amounts, for example, to three hours every day for ten years.

We may not wish to become 'experts' in meditation or qigong, tai chi or yoga, but the same principle applies. If we want to enrich and deepen our learning we do need to practise regularly - and for practical purposes this means every day, or nearly so.

Going to a class once a week, fitting in a long session at the weekend, only practising when we feel like it, are all of course far better than no practice, but it is regular daily work that offers the greatest rewards. Many of us have a desire, or even a need, for change. We seek

transformation (from our lives, bodies, relationships, routines) and hope that it will come with a bang, an epiphany, a revelatory experience. Yet real change is usually slow and hard to achieve, and is more likely to come from patient commitment. As Mohammed Ali said, "The fight is won or lost far away from witnesses - behind the lines, in the gym, and out there on the road, long before I dance under those lights."

Sometimes, when I was treating patients, I would suggest that they might try tai chi or yoga for chronic back pain, or make some dietary changes to help a long-standing disorder. It wasn't unusual for them to report back a week or two later complaining that nothing had yet changed. So I would tell them the story of the American tourist who visited the Tower of London (built in 1078). He came across an old gardener, slowly pulling a heavy roller over a bowling green. It was one of the most beautiful pieces of grass he'd ever seen - perfectly flat, every blade the same cropped length, verdant in the afternoon sun. "Wow", the tourist said. "You must tell me how you get a piece of grass to look like that." "It's very easy sir," the gardener replied. "You water it regularly and roll it every day for nine hundred years."

### ***How, when, where to practise***

We may be full of good intentions, as the rash of January gym memberships attests, but keeping to them is harder. Yet one thing we have on our side is the power of habit. If we can schedule a regular time for daily practice and stick to it, soon - within a matter of weeks - it becomes a habit, something natural, something that we want to do and look forward to. As Jim Ryun, Olympic silver medallist, says above, we may need will power and commitment to get started, but the aim is to grow into a habit that we love.

The traditional time for qigong and martial practice is early morning, and preferably outdoors. The world is quiet, the air is fresher, and we are more likely to be reliably free from distractions that arise as the day develops. There may also be an inner quietness, even sleepiness, which helps us settle into our practice.

Practising in the morning is especially beneficial as it lays down the foundation on which our day is built. We will still feel its benefits hours later. However, for many people, early morning practice is not feasible; indeed for people with demanding families or jobs, setting aside any regular time may be hard. In that case the principle to follow is simple - any practice, at any time, any where, is better than none. And, if we aim to do just a few minutes, this can easily become more; while no minutes can only ever remain nothing.

### ***Self-healing***

The kind of internal exercises discussed in this chapter have the potential to promote health and heal the body and mind. Yet healing can take many different forms and it is good to remember the wise and realistic words of the famous yoga teacher BKS Iyengar, "Yoga teaches us to cure what need not be endured and endure what cannot be cured."

## Afterword - Chinese sports

*The archers, in advancing, retiring, and all their movements, were required to observe the rules. With minds correct, and straight carriage of the body, they were to hold the bows and arrows skilfully and firmly; and when they did so, might be expected to hit the mark. In this way (from their archery) their characters could be seen.*  
Confucius, 551-479 BCE<sup>55</sup>

*In archery we have something like (the way of) the superior man. When the archer misses the centre of the target, he turns round and seeks the cause for his failure in himself.*  
Confucius, 551-479 BCE<sup>55</sup>

The principal sporting activities played in ancient China included hunting, falconry, polo, archery and a wide variety of martial arts. And as we can see from the Confucius quotes above, there was a clear attempt (as there has often been in Western culture) to link sport to development of character. This trend can also be seen in the game of kickball.

It may surprise the English (who believe that they invented soccer) that references to it appear in Sima Qian's *Historical Records* written in 109 BCE. While it is true that modern soccer, and the establishment of its rules, did originate in 19th century England, the Chinese game of kickball (cuju) has clear similarities, being won by scoring goals and overseen by impartial referees. Its moral principles were clear;

*Keep away from partiality  
Maintain fairness and peace  
Don't complain of others' faults  
Such is the matter of cuju  
If all this is necessary for cuju  
How much more for the business of life.*  
Li You, 100 CE<sup>56</sup>

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