Outline of a philosophical literature study entitled

OSTEOPATHY AND YOGA

A First Examination

Thesis at the Vienna School of Osteopathy

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1 Introduction

About six years ago, when I was looking for a possibility to keep physically fit and increase my power of concentration at the same time, I joined a yoga course and started to practise regularly. When working with patients it had frequently happened to me that my mind wandered, which had reduced the quality of my work and also my ability to feel. After a few weeks of practising yoga, I noticed that I was feeling physically stronger, which came in useful for quite a few structural techniques. My posture improved. When applying craniosacral techniques I could often find a better starting position, one that made me more permeable and also more alert.

More and more aspects of yoga began to have an influence on my work with patients, particularly in patients with breathing difficulties or when it seemed necessary to design a specific home programme for the patient. Especially the latter gave me the idea for this study.

My first examination of osteopathy and yoga lead to the result that osteopathy influences bones, articulations, connective tissues such as membranes, internal organs, fluids (liquor, lymph, etc.) and much more. Practising yoga, carrying out the body positions (asanas) and control of the breath (pranayama), is meant to influence the body and the mind in order to bring about the unity of body, mind and soul. Practising asanas and pranayama, among other measurements, also influences bones, articulations, connective tissues and fluids. Regarding this still quite simplified representation, parallels already became obvious to me.

So this study was written in an attempt to describe some convergence between osteopathy and yoga. The aim is to find parallels and common ground between the two fields. Furthermore, it shall be examined whether answers to concrete questions relevant to therapy could result from these findings.

The questions relevant to osteopathy are:

Are there any comparable philosophies in osteopathy and yoga? In this part of the study I shall briefly discuss the origins of the two systems and look for aspects in yoga comparable to the basic principles of osteopathy by A.T. Still.

Can yoga exercises support osteopathic treatment? Here I shall describe the manifold effects of yoga exercises and try to assign them to the respective osteopathic fields (structural, visceral and craniosacral osteopathy).

Can yoga exercises reduce the probability of the recurrence of an osteopathic lesion? During an osteopathic treatment the patient should also be motivated to contribute independently and actively to the activation of his self-healing powers. I shall examine to what extent asanas and pranayama in particular can contribute to this aim.

Could yoga be a possibility to support a necessary change in the patients' habits? Wrong diet, lack of exercise, bad posture, stress, unfavourable mental attitude, etc. can be among the reasons for dysfunctions. Here it shall be analysed to what extent aspects of yoga can be usefully included in a specific home programme or in guidelines for the patients' regimen.

Could regular yoga practice influence the osteopath's ability to feel? This question will mainly be dealt with in the chapter "Discussion".

This study is an attempt to bring osteopathy and yoga closer together. It intentionally deals with parallels and comparable aspects. It is clear that osteopathy and yoga are different systems and I do not want to give the impression that they are nearly the same. In my opinion, however, the more common ground can be found, the better two concepts can be combined in a useful way.

In this introduction it must be pointed out, though, that, especially with regard to yoga, there is a danger that the dimension of the whole might be lost by simplifying and singling out certain aspects. Yoga has a holistic view of life, which intends to lead to salvation by influencing body and mind. From this point of view, singling out of certain aspects is not an acceptable method. It is, however, sometimes necessary for the purpose of this study. In general, there is a danger nowadays that yoga is reduced to a purely physical level.

This study is an analysis of literature. All the parallels found between osteopathy and yoga are supported by quotations in order to remain as objective as possible. Due to the very long history of yoga and the enormous number of writings on yoga I had to select. Of the old sources, particularly the classic writings by Patanjali and

Swatmarama were used. Furthermore, books by well-known yoga teachers, as for example Iyengar, and relevant articles from yoga journals were used.

I deliberately refrained from giving an outline of the ayurvedic background of yoga (ayurveda = Indian naturopathy that mitigates illnesses of body and soul and fosters well-being (1)), which is of great importance to the whole system. The reason for this was that it would also be beyond the scope of this study. I have put an emphasis on the physical aspects of yoga. This is only acceptable if it is made quite clear that these are only a small part of the concept of yoga. Although they will, isolatedly practised, lead to physical well-being, they will not lead to the actual goal of a practitioner of yoga, namely to reach the highest state of self-realization and to unite body, mind and soul, because they do not include the far-reaching mental and spiritual dimensions of yoga.

When this study was written, no papers on its subject could be found. The only osteopathic work that also deals with yoga was written by Gregory Ashley: “The use of yoga exercises for treatment of low back pain by osteopaths and yoga teachers’ knowledge of low back pain”. In this study, questionnaires are used to investigate how often osteopaths recommend yoga exercises to patients with low back pain, and what opinion osteopaths have of the expertise of yoga teachers. The work will not be discussed here because it has a totally different purpose.

1 FRAWLEY David, Yoga und Ayurveda, p.19,20

2 Origins of Osteopathy and Yoga

What is yoga? What is osteopathy?

In literature both yoga (B.K.S. Iyengar) and osteopathy (H.M. Wright) are regarded as a science, a philosophy and an art.

The roots of yoga can be traced back to pre-Christian times in India. Osteopathy, however, was described for the first time by A. Still in 1874, although some elements like the manipulation of articulations, for example, were already known in Hippocrates' times.

Patanjali was the first who concisely compiled the original tradition of yoga. He probably lived between the fifth century B.C. and the fourth century A.D. He wrote the yoga sutras, which have been the basis for all further development of the practice and philosophy of yoga. The real roots of yoga date back to a time much earlier than his. Most of what is known about Patanjali comes from legends. He is called a highly developed soul that took on a human form to surmount the ups and downs of our existence. In the yoga sutras he explains how to overcome the sufferings of the body and the fluctuations of emotional life. This study repeatedly refers to Patanjali and his writings.

Svatmarama is the author of the Hatha Yoga Pradipika, which puts an emphasis on the physical aspects of yoga. This study particularly deals with this "kind " of yoga.

The Hatha Yoga Pradipika describes the meaning of the word yoga as a union between Jivatman, the individual soul and the body's principle of life, and Paramatman, the supreme soul and the universal self, God. The word Jivatman is derived from the Sanskrit root yui = to bind, to unite, to tie, to yoke, and it means to guide and concentrate one's attention, to use it, to apply it. It means to yoke all the power of the body, the mind and the soul to God.
So we could describe hatha yoga as the form of yoga that focuses on the body in order to provide an adequate vessel for the soul.

According to Iyengar, an important hatha yoga teacher of our times, yoga is a science, an art and a philosophy. Yoga is a practical method through which we can give our life a direction, a meaning and dignity. It affects all levels of human life: the

physical, the mental and the spiritual one. (1) Thus, yoga is the art of leading a nervous and distracted mind to composure and reflection. (2)

The meaning of the term yoga can of course be interpreted more broadly. Patanjali defines the word yoga as citta-vritti-nirodha, i.e. as a state of mind in which the psycho-mental processes come to rest. This ability to bring the movements of the mind to a halt can be reached with the help of practice and self-restraint. (3)

Yoga, however, is no religion, as is often assumed, but one of the six orthodox systems of Indian philosophy. Nevertheless, people find Patanjali's words so clear and unadulterated that their divine origin has always been acknowledged.

A relation to God also becomes clear in osteopathy. Still, the founder of osteopathy, writes in his autobiography, "I do not claim to be the author of the science of Osteopathy. No human hand framed its law; I ask no greater honor than to have discovered it." (4) "Give me the age of God and I will give you the age of Osteopathy." (5) In his books he often calls God the Universal Architect. "I have the same confidence in His exactness and ability to make, arm, and equip the human machine so it will run from the cradle to the grave." (6) "Osteopathy is God's law, and whoever can improve on God's law is superior to God Himself. Osteopathy opens your eyes to see and see clearly; its practice covers all phases of disease and it is the law that keeps life in motion." (7)

Andrew Still (1828-1917) (Fig. 1) was the son of a Methodist preacher and medical doctor. Still studied Medicine, too, but he was not satisfied with the way medicine was practised at that time. When three of his children died of meningocephalitis despite intensive medical and theological care, he developed a new holistic medical system, osteopathy.

Fig. 1

People often have wrongly interpreted the word "osteopathy" as "bone disease". On that subject Still wrote, "That is a grave mistake. Osteopathy is compounded of two words, osteon, meaning bone; pathos, pathine, to suffer. I reasoned that the bone, "Osteon", was the starting point from which I was to

ascertain the cause of pathological conditions, and so I combined the “Osteo” with the “pathy” and had as a result “Osteopathy.”” (8)

Still found exact knowledge of anatomy and physiology very important and expected from an osteopath that he “must know the shape and position of every bone in the body, as well as that part to which every ligament and muscle is attached. He must know the blood and the nerve supply. He must comprehend the human system as an anatomist should, and also from a physiological standpoint.” (9)
Despite this exact knowledge and a distinct manual sensitivity, however, the expected good results of the treatment kept failing to materialize. Still felt that there had to be something else which was of great importance, something that he could only suspect at that time: ”…and another leaf is opened of why no good results are obtained and where is the mystery?“ He had acknowledged the craniosacral fluid as the highest known element, so his student William Garner Sutherland, DO, the founder of the craniosacral therapy, considers his cranial concept an osteopathic theory that Still had already called into existence in his mind.

Sutherland (1873-1954) applied the osteopathic principles to the cranium, which at that time was regarded as a rigid whole even by osteopaths. He discovered that the articular surfaces of the cranial bones are constructed in a way that can only serve one purpose, to facilitate movement. He called that rhythmical, involuntary movement “primary respiration“. He directed his attention towards the fluid parts of the body, especially the cerebrospinal fluid, and discovered that a wave-like fluctuating movement runs through the whole body, the power and energy of which he knew to use to release lesions. “We know that the cerebrospinal fluid is present and contains the “highest known element” and that we are now learning, through the cranial concept, how to utilize its force in behalf of the ills of mankind.” (10) This fluid stream is like a great river of life that has to be tapped, so that the “withering fields“ can be irrigated and health be maintained.

The image of those withering fields which have to be irrigated also appears in yoga in the work of Iyengar. Therefore, the topic related to this, which corresponds to one of the main principles of osteopathy, shall be anticipated here: “Practising the yoga positions provides the human body with energy and improves circulation. Practising the asanas removes all those obstacles within the body which are caused by poor circulation. The positions irrigate the organism and wash away the obstacles. As soon as one has been freed from complaints that had lead to disintegration, one

returns to integration and life, and health begins to bloom. But if one does not irrigate one's body, drought and famine occur in the body as incurable diseases." (11)

In summary, one can say that osteopathy is a very young "discipline" in comparison to yoga. It wants to support the human self-healing powers by influencing certain structures. Some important representatives connect osteopathy with a science-based form of therapy as well as with the Divine. With yoga, however, the Divine is more in the core of the concept. Yoga represents a great philosophical and spiritual system that serves spiritual welfare. In this, the body is an essential means to gain self-realization, sight of the soul or the unity of body, mind and soul.

1 IYENGAR B.K.S., Der Urquell des Yoga, p.10
2 IYENGAR B.K.S., Licht auf Pranayama, p.27
3 PATANJALI, Die Wurzeln des Yoga, p.16
4 STILL Andrew Taylor, Autobiography, p.302
5 STILL Andrew Taylor, Autobiography, p.229
6 STILL Andrew Taylor, Autobiography, p.228
7 STILL Andrew Taylor, Autobiography, p.224
8 STILL Andrew Taylor, Autobiography, p.184
9 STILL Andrew Taylor, Autobiographie, p.277
10 SUTHERLAND William Garner, Contributions of Thought, p.273
11 IYENGAR B.K.S., Der Baum des Yoga, p.99

3 Explanation of the Terms Hatha Yoga, Asana and Pranayama

In the following chapter I shall examine those yoga terms which I often refer to in this study.

3.1 Hatha Yoga

Hatha yoga is merely one of many possible paths to reach the goal of yoga, which is always the same. Hatha yoga is the path through physical discipline and the will, whereas there are other paths through the mind (raja yoga), through intellect and knowledge (jnana yoga), through duty and action (karma-yoga) or through the devotion to the Divine (bhakti yoga). The Bhagavad-Gita, which is regarded as the highest authority of yoga philosophy, mentions eighteen different paths or yogas all together.

Hatha yoga teaches how to realize the body better as a whole without separating it from the mind and the influence of the senses.

Swatmarama writes at the beginning of his Hatha Yoga Pradipika, “I salute the primeval Lord, who taught the Hathayoga-vidya, which is as a stairway for those who wish to attain the lofty Raja-yoga.” (1)

The hatha yoga is a “path of the body“. It does not stop there, however, but always bears man as a whole in mind. In that it differs from conventional gymnastic exercises. The many exercises for body, breathing and concentration, which hatha yoga has developed, are conceived with regard to different aims which complement one another. To the yogi the body is the main instrument to gain perfection. The yogi controls the body through the asanas (yoga positions) and makes it a suitable vessel for the mind. The mind is freed from the bounds of the body and lead to the soul.

Literally translated hatha means power or determined endeavour. Mostly, however, the mystic translation comes to the fore: “ha“ means sun and “tha“ means moon. Iyengar describes “ha“ as the sun of the body, i.e. the soul, and “tha“ as the moon, consciousness. The energy of the sun does never cease, the power of the moon, however, is subject to cyclic change. In the same way the sun that is our soul burns steadily, whereas the mind or consciousness knows vibrations, modulations, moods, ups and downs, corresponding to the phases of the moon. However, when

consciousness and the body are united the energy of consciousness becomes still. Then consciousness remains still and the soul flows through the whole of the body. (2) So to Iyengar hatha yoga means much more than the merely physical aspect.

3.2 Asana and Pranayama

The terms asana and pranayama originate from the records of Patanjali and play an important role in this study.

Patanjali describes eight limbs or steps of yoga, which are the right means when searching for the soul. Two of these steps are asana and pranayama.

All eight limbs or steps are interwoven and interdependent. Thus, each step is indispensable. (Who is not interested in the spiritual aspect of yoga, can practice it, of course, only for the sake of physical benefit.) Patanjali says, “Studying the eight limbs of yoga leads to purification of body, spirit and mind; the flame of knowledge is kept alive, and the power of judgement arises from it.“ The purer perception and action are, the brighter the power of judgement shines, thus illuminating almost all aspects of human life and its existential relationship to the objective world. (3)

The eight steps of Patanjali are:

- Yama, the treatment of others or the social discipline, ethical precepts in general.
- Niyama, the treatment of oneself or individual discipline.
- Asana, the practice of the postures to obtain physical discipline.
- Pranayama, the control of breath to obtain mental discipline.
- Pratyahara, the orientation towards the internal self or the discipline of the senses, the withdrawing and freeing of the mind from the governance of the senses and external objects.
- Dharana, the concentration.
- Dhyana, the meditation.
- Samadhi, the self-realization.

They constitute the eight-leaved blossom of yoga. We can divide them in three groups: yama and niyama are the socialethical and individualethical disciplines; asana, pranayama and pratyahara lead to the development of the individual, to awareness of the self; dharana, dhyana and samadhi are those effects of yoga which

bring about the experience of the sight of the soul, but they are not as such part of yoga practice.

This study focuses mainly on asanas and pranayama.

3.2.1 Asana

The third step of yoga is asana or position or posture. Asanas are a central characteristic of yoga. They show the path from the physical to the spiritual level and bring steadfastness, health and lightness of the limbs. Mobility, balance, stamina and great vitality develop through practising.
Asana means to keep the body in a specific position, and this physical posture shall reflect a specific mental attitude. When exercising an asana is not strenuous anymore and steadiness has been reached, the internal self and not the body will exercise that asana. By practising the asanas, the practitioner primarily obtains health, but also the state of perfect balance of body, thoughts and mind.

Patanjali describes asana as follows: ”An asana shall be stable and comfortable. The perfection of an asana is obtained, when the practitioner exercises it effortlessly and meditates on the infinite existence. From that time on the sadhaka (practitioner) will not be disturbed anymore by dualities.“ (4) Dualities like gain and loss, victory and defeat, fame and disgrace, body and mind, mind and soul cede when the practitioner masters the asanas.
And the Hatha Yoga Pradipika assures us: ”Asanas make one firm, free from maladies and light of limb.” (5)

Both of these works emphasize that we have to start with the body in order to reach higher levels. Body and mind are closely connected and interdependent. The mind is affected by a dysfunction of the body and vice versa. In yoga body and mind develop more and more power through various asanas.

Some asanas are named after plants (e.g. the tree), some after animals (e.g. locust, dog, serpent), others after heroes and sages. When practising asanas, the body takes on many forms which resemble various different creatures. The yogi knows that from the lowest insect to the perfect sage the same universal spirit breathes, and that it can take on countless forms. He also knows that the highest form is no form, and he finds oneness in wholeness. (6)

3.2.2 Pranayama

Pranayama is the fourth limb of yoga and the knowledge of breath and its control. It is an art using techniques to move deliberately, rhythmically and intensively and expand the respiratory organs. Pranayama consists of the longlasting delicate flow of inhalation (puraka) and exhalation (rechaka), and breath retention (kumbhaka). Puraka gets the organism going, rechaka draws off exhausted air and toxic substances, kumbhaka distributes the energy to the whole body. The movements comprise horizontal extension, vertical raising and increase in volume of the lungs and the chest. Disciplined breathing like that helps the practitioner to obtain composure and gives him sound health and a long life. Subtle chemical changes in the body of the practitioner occur owing to the substantial oxygen uptake. (7)

Prana means air, breath, vigour, vitality, energy. Prana is the energy which penetrates the Universe at all levels. This energy is of physical, emotional, mental, sexual, spiritual and cosmic nature. Prana is the breath of life of all beings in the Universe. It is often translated as breath, but this is only one of its manifold manifestations in the human body. Prana is in the body of the individual, part of the cosmic breath of the universal spirit. By practising pranayama, the practitioner tries to bring the individual breath into harmony with the cosmic breath. (8)

The Hatha Yoga Pradipika says on pranayama, “As the lion, elephant or tiger is tamed gradually, even so should Prana be brought under control. Else it will kill the practitioner.
Through the proper practice of pranayama there is freedom from all diseases. By a mistaken course of yoga, brings upon himself all diseases.” (9) “When the Prana and mind are in a state of absorption, an indefinable bliss ensures.” (10)

Patanjali describes the effects of pranayama as follows, “Pranayama removes the veil that hides the light of knowledge. And the inner mind becomes able to concentrate.“(11)
The Yoga Chudamani Upanisad calls pranayama great or sublime knowledge, the royal road to well-being, freedom and bliss.

1 SVATMARAMA, The Hathayogapradipika, p.3

2 IYENGAR B.K.S., Der Baum des Yoga, p.13

3 PATANJALI, Die Wurzeln des Yoga, p.119

4 IYENGAR B.K.S., Der Urquell des Yoga, p.194-197

5 SVATMARAMA, The Hathayogapradipika, p.11

6 IYENGAR B.K.S., Licht auf Yoga, p.36

7 IYENGAR B.K.S., Licht auf Pranayama, p.39

8 IYENGAR B.K.S., Licht auf Pranayama, p.37

9 SVATMARAMA, The Hathayogapradipika, p.25

10 SVATMARAMA, The Hathayogapradipika,.p.67

11 IYENGAR B.K.S., Der Urquell des Yoga, p.205,206

4 Basic Principles According to Still and Their Parallels to Yoga

The basic principles of osteopathy summarize the foundations written down by Still in his books. They are laws which underlie holistic medicine and partly correspond to yoga.

4.1 Motion Is Life

Motion is the clearest evidence and the prerequisite of life. If motion and mobility of the tissues are reduced, the supply of nutrients and oxygen will be restricted. The tissue will lose its vitality and become more susceptible to diseases.

Still writes, ”As motion is the first and only evidence of life, by this thought we are conducted to the machinery through which life works to accomplish the results as witnessed in “motion””. (1)
Assessing mobility represents the major diagnostic criterion in osteopathy, and not only the mobility of articulations is meant by this. Rollin E. Becker means mobility at different levels, “If you have life as a factor that manifests itself in motion and movement at all levels from gross motion and movements to minute electron levels within cellular function or fields of ego, mind, and emotion, then life as a factor should be studied and developed until it, too, can be a clinical experience synchronous with the clinical development of motion and movement as manifesting patterns of life.” (2)

Removing a mobility restriction at one of these levels represents a fundamental criterion of osteopathic treatment.

The importance of motion and mobility becomes clear in yoga, too. The mobility of the articulations, the elasticity of the muscles, the gliding ability and the quality of the fasciae increase by practising the various asanas. Iyengar writes, ”Mobility, balance, stamina and great vitality develop by practising asanas.“ (3)

4.2 The Body Functions as a Unity

Osteopathy considers all parts of the physical body, the mind and the soul (with the emotions which are interconnected through the neurohumoral system) as interconnected and interdependent. All cells, tissues and organs of the body must be

considered a unity. The person, in turn, forms a unity with other people, his environment and the whole cosmos. (4) (Fig. 2)

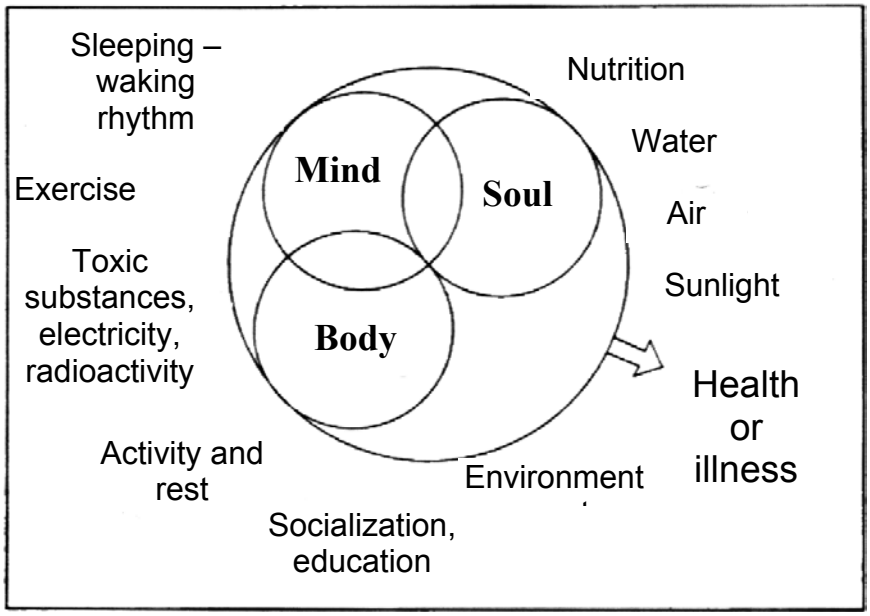


Fig. 2: The influence of environmental and life-style factors on the unity of body, mind and soul

Still already had these holistic views: ”We look at the body in health as meaning perfection and harmony, not in one part, but as the whole.“ (5) Rollin E. Becker interprets that unity as follows, “The body is a complete system of tissues and fluids in constant mobility and motility.” (6) Michael Kern adds a spiritual aspect to the term unity, “This law of unity applies to the whole person, not just our muscles and bones. The body is a part of a continuum – mind, body and spirit, and intelligently reflects the whole.” (7)

Yoga also deals with the unity of body, mind and soul. Iyengar writes, ”The aim is to unite what God gave to us: body, mind and soul. In every single person there is an enormous disintegration between body, mind and soul. The art of yoga was given to us to unite these disturbed vehicles of the self, so that manhood may develop as a whole. ...Practising the asanas and the pranayama serves the interrelationship of the countless parts of the body.“ (8) ”The practitioner realizes that internal and external perception, body and mind are eventually one, and he overcomes his disunity.“ (9)

The fasciae, among other things, are an essential link, so that the individual parts of the body can function as a unity. They are a possible cause for the development of osteopathic lesional chains, because, due to their limited elasticity, they can transmit local disturbances of the tissue mobility to remote body regions. Still writes, “We must remember, as we study the fascia, that it occupies the whole body.” (10) On the basis of these interconnections Still also says, “The failure of one organ will produce

disease of the whole body.” (11) Even the tiniest disturbances in the interaction of all individual parts can lead to lesions, which often appear far away from the place of their origin. The ways the organism compensates are very complex, because everything is interconnected.

Iyengar argues along parallel lines with regard to yoga. He warns of simply treating the place where the disease manifests itself. He points out that there are processes which are indirectly connected to the disease. He advises to look how the whole body acts. (12) Indirectly, he mentions the probability of compensatory mechanisms, writing, ”An experienced yoga teacher treats the place directly, when the disease has just occurred. Has the problem existed longer, however, the teacher then carefully considers it from all sides. First one heals the surrounding areas, only then one takes care of the affected part of the body and heals it too in good time.“ (13)

The physiologist Dr. Irwin Korr very pointedly formulates, “There is no such thing as a sick organ; there is only a sick man. Treating the part alone is not treating the man, while treating the man is to treat the part too.” (14)

4.3 The Rule of Arteries

“The rule of artery and vein is universal in all living beings, and the osteopath must know that, and abide by its rulings, or he will not succeed as a healer.” So according to Still, the success of the osteopath depends on “his ability to sustain the arteries to feed and the veins to purify by taking away the dead substances before they ferment in the lymphatic and cellular system.” (15) Still applies this rule not only to blood circulation:
“An osteopath cures by the correction of all hindering causes to the normal flow of blood and other fluids.“ (16)

This osteopathic principle applies, on the one hand, to all body fluids, which include liquor, lymph and synovial fluid, too, and on the other hand, the gas exchange, the unhindered transmission of nerve impulses and the free circulation of physical and mental energy. (17)

Blood circulation and the state of the arteries play an important role in yoga, too. Swami Vishnu-Devananda writes in his yoga book, ”Yoga exercises do contribute to

the improvement of blood circulation and the elasticity of the arteries. ...They aim at a steady distribution of blood to every part of the body.“ (18)

Ayurveda, the Indian art of medicine, speaks of doshas (=the humours: wind, bile and mucus) and dhatus (=viscous body secretions or body parts: juice, blood, flesh, fat, bones, marrow, semen). Any deficiency or abundance of doshas or dhatus or any hindrance of their flow produces imbalance and consequently indisposition or disease. If there is disharmony between the three humours the vessels do not function properly anymore. That, however, is essential to the maintenance of health. (19)

Air, water, blood, nutritients and other substances are transported through the whole body through nadis, which are tubules, conduits or canals. They correspond to arteries, veins, nerves, capillaries, bronchioles, etc. The word nadi is derived from the root “nad” and means stem, sound, vibration and resonance. In our so-called subtle material and spiritual bodies they are channels for cosmic, vital, productive and other energies, and also for feelings, consciousness and the spiritual aura. (20) Purification of the nadis is an essential goal of the regular yoga exercise.
The Hatha Yoga Pradipika says, “When the nadis are full of impurities, the breath does not go into the middle. …How can there be the attainment of the goal?” (21) “When the nadis are purified, there are external signs: leanness and brightness of the body are definitely produced.” (22)

The body is trained by practising the asanas. Thus, the canals for the flow of prana are kept clear. The energy cannot radiate through the whole body, when the nadis are blocked by impurities. If the nadis are disturbed, one cannot discover one’s true nature and the core of things. (23)

Iyengar also writes, ”Our health and survival are dependent on the respiratory system and blood circulation. These are the two doors to the kingdom of the human organism. ... By letting the blood circulate in the unhealthy areas of our body, they are fed, toxins dissolve and the various afflictions and symptoms of physical disease disappear.” (24)

In chapter one I have already referred to Iyengar’s comparison of the body to fields that have to be irrigated to avoid drought and famine. This idea also appears in osteopathic literature, “He who is able to reason will see that this great river of life

must be tapped and the withering field irrigated at once, or the harvest of health be forever lost.“ (25) Sutherland adds to this idea, “The cranial technician is learning how to irrigate Dr. Still’s withering fields.” (26)

4.4 Self-healing Powers

The aim of osteopathic treatment is to relieve the body from various pathogenic influences, so that the body is again able to heal itself. In his autobiography Still writes, “Believe that a loving, intelligent Maker of man had deposited in his body in some place or throughout the whole system drugs in abundance to cure all infirmities, on every voyage of exploration I have been able to bring back a cargo of indisputable truths, that all remedies necessary to health exist in the human body. They can be administered by adjusting the body in such a manner that the remedies may naturally associate themselves together, hear the cries, and relieve the afflicted. I have never failed to find all remedies in plain view on the front shelves and in the store house of the Infinite – the human body.” (27) “As osteopathic machinists we go no further than to adjust the abnormal conditions back to the normal. Nature will do the rest.” (28) “An osteopath is taught that nature is to be trusted to the end.” (29)

There is a parallel to this in yoga in the work of Iyengar: “Dissolving of toxins and the curing of illness can take time. It is a natural process which proceeds in the rhythm of natural processes. Think about it: When you take remedies recommended by modern medicine, those, too, activate certain processes to speed up the functions of nature, but they do not cure the disease – they only speed up the process. Not the drugs cure the disease. Only nature cures the disease. Yoga, however, does not use external remedies to speed up the process. You have to rely on your own nature and let nature alone put the human organism in a position to function as quick and effective as it is able to. This is why yoga works slower, but for certain.“ (30)

The healing powers of nature described by Iyengar correspond to the self-healing powers in osteopathy, which manifest themselves, for instance, in the ability of homeostasis: Michael Kern, a craniosacral therapist and osteopath, writes, ”The cells of the body have a remarkable capacity to remain in balance. …For cells to survive, the composition of the fluid that surrounds them needs to be constantly maintained in a state of equilibrium. Chemical balance, temperature and pressure are all factors which must be carefully regulated, or cells will suffer. …The nervous and hormonal system are constantly monitoring the body’s physiology and then making appropriate

adjustments. …These mechanisms endeavour to maintain a physiological balance." (31)

Furthermore, the self-healing powers manifest themselves in the immunity against pathogens: Still writes, "I began to realize the power of Nature to cure after a skillful correction of conditions causing abnormalities had been accomplished so as to bring forth pure and healthy blood, the greatest known germicide." (32) Self-healing mechanisms enable injured body tissues to heal and compensate irreparable damages. (33)

Rollin E. Becker includes the rhythmic and involuntary mobility of the tissues and fluids and the various tides, "They are contributing factors to the self-healing capacity of the body and should be recognized and accepted as self-functioning mechanisms" (34)

In her yoga book Swami Sivananda Rhada mentions healing reserves of the body which have to be aroused. (35)

4.5 Structure and Function are Interdependent

Dr. Still found that there is a close correspondence between the body's structural organization and the way in which we function. He noticed that restrictions of motion in the structural framework of the body affect its ability to receive the essential healthgiving ingredients carried in the fluids. (36)

The relationship between the structure or anatomy of the body and its function or physiology is the basis of osteopathic diagnosis and therapy. The bony, muscular, fascial, visceral and neural parts and the body fluids (in the sense of a movable or motile structure) are described by structure. There is a close relationship between the nature of the body structures and the ability and possibilities of a person to shape his life. Certain demands and functions, on the other hand, lead to certain structural changes in order to carry out that function in the best way possible. (37)

Yoga also describes the same interdependence. It uses other terms, however. It mentions three bodies which envelop the soul: the gross material body or the anatomical vesture, the subtle material body, which consists of the physiological, emotional and intellectual vesture, and the enjoyment body, the vesture of bliss. So

structure would correspond to the gross material, physical body, which is created by nutrition. Function would be assigned to the subtle material body, i.e. breathing, circulation, digestion, nerves, endocrine glands, excretion and reproduction, further to consciousness, feeling, motivation, thinking and judging. (following 38) The interdependence of structure and function is clarified in yoga by the following formulation: The body or the structure is the temple of the “Supreme “ or the soul and so it is important to the yogi, to maintain it pure and healthy. He practises asanas and pranayama to maintain his body or structure in a good, well-balanced state, with fluid flowing through (irrigating) all parts of the body. The body becomes strong and agile, and all organ systems are maintained in good function.
Iyengar writes: ”For the yogi the body is the main instrument to gain perfection. When the carriage (note: structure) breaks down, the traveller (note: function) cannot go any further. When the body is ruined, the student can obtain only little. Physical health is important to the mental development, because in a normal state thinking works through the nervous system. When the body is ill or the nervous system is strained, the thinking becomes restless or lazy and dull. Concentration or meditation become impossible.“ (39)

Conversely, function influences structure, too: By practising yoga, tendons, ligaments, and fasciae become longer, muscles become thicker, postural asymmetries are reduced, etc.

Dr. Still also deals with the interdependence of structure and function. He realized that the relationship between structure and function is reciprocal, each influences the other. Just as the body’s structure governs its function, so its function governs its structure. For example, if we have a poor workposture, the tissues of the body start to organize around these activities. A particular structural pattern will be created, which then influences how we function. (40)

1 STILL Andrew Taylor, The Philosophy and Mechanical Principles…, p.250

2 BECKER Rollin E , Life in Motion, p.53

3 IYENGAR B.K.S., Licht auf Yoga, p.34

4 LIEM Torsten, Kraniosakrale Osteopathie, p.6

5 STILL Andrew Taylor, The Philosophy and Mechanical Principles…, p.44

6 BECKER Rollin E , Life in Motion, p.116

7 KERN Michael, Wisdom in the Body, p.95

8 IYENGAR B.K.S., Der Baum des Yoga, p.165,103

9 IYENGAR B.K.S., Der Urquell des Yoga, p.43

10 STILL Andrew Taylor, The Philosophy and Mechanical Principles…, p.62

11 STILL Andrew Taylor, Osteopathy- Research and Practice, p.14

12 IYENGAR B.K.S., Der Baum des Yoga, p.107

13 IYENGAR B.K.S., Der Baum des Yoga, p.111

14 KERN Michael, Wisdom in the Body, p.94

15 STILL Andrew Taylor, The Philosophy and Mechanical Principles…,p.55

16 STILL Andrew Taylor, Osteopathy- Research and Practice, p.7

17 LIGNER Bernard, Bildatlas der Osteopathie, p.23

18 VISNU-DEVANANDA Swami, Das große illustrierte Yogabuch, p.66

19 IYENGAR Gita S., Yoga für die Frau, p.45

20 IYENGAR B.K.S., Licht auf Pranayama, p.60

21 SVATMARAMA, The Hathayogapradipika, p.22

22 SVATMARAMA, The Hathayogapradipika, p.25

23 IYENGAR B.K.S., Licht auf Pranayama, p.120

24 IYENGAR B.K.S., Der Baum des Yoga, p.99

25 STILL Andrew Taylor, The Philosophy and Mechanical Principles…, p.45

26 SUTHERLAND William Garner, Contributions of Thought, p.215

27 STILL Andrew Taylor, Autobiography, p.88

28 STILL Andrew Taylor, The Philosophy and Mechanical Principles…, p.33

29 STILL Andrew Taylor, Autobiography, p.252

30 IYENGAR B.K.S., Der Baum des Yoga, p.100

31 KERN Michael, Wisdom in the Body, p.97

32 STILL Andrew Taylor, The Philosophy and Mechanical Principles…, p.10

33 LIEM Torsten, Kraniosakrale Osteopathie, p.7

34 BECKER Rollin E , Life in Motion, p.119

35 RADHA Sivananda, Geheimnis Hatha Yoga, p.34

36 KERN Michael, Wisdom in the Body, p.92

37 LIEM Torsten, Kraniosakrale Osteopathie, p.7

38 IYENGAR B.K.S., Licht auf Pranayama, p.33

39 IYENGAR B.K.S., Licht auf Yoga, p.19

40 KERN Michael, Wisdom in the Body, p.92

5 Yoga from Osteopathy's Structural, Visceral and Craniosacral Point of View

Osteopathy tries to feel any restriction or loss of mobility that can cause a changed function of parts of the somatic system and its related vascular, lymphatic and nerval elements.
That lack of mobility affects neighbouring tissues as well as more remote functions and structures. Treatment of the restricted mobility is meant to restore the function in the "area of dysfunction" and in the organism as a whole.

In yoga one also exerts influence on the mobility of the body by practising asanas and some pranayama exercises. At the structural level some muscles and muscle chains are expanded and built up, at the visceral level the mobility and the gliding ability of the organs improve. The extent of the respiratory movements and the capacity of diaphragmatic respiration increase. This facilitates the relaxation of individual parts of the body and the body as a whole. Therefore, the release of osteopathic lesions is favoured. At the craniosacral level, the vitality of the primary respiration can improve and relaxation of the membranes can be achieved by increased flexibility and the intensification of breathing.

5.1 Stretching and Strengthening through Asanas

In osteopathy, direct stretching techniques, inter alia, are used for mobilization in structural therapy as well as in visceral and craniosacral therapy.

David Coulter, an anatomist from Minnesota, emphasizes the importance of stretching through yoga exercises, writing in his anatomy book, "Flexibility is one of the greatest challenges of hatha yoga."

In his book he also analyses, which structures are involved in the actual stretching and thus facilitate it: "What we can do is lengthen nerves and the bellies of muscles, the two kinds of extendable anatomical structures that run lengthwise through limbs and across joints. The individual muscle fibers within a muscle can grow in length by the addition of little contractile units called sarcomeres. A matching expansion of the connective tissue within and around the muscle is also needed, including the overlying fascia, the connective tissue that surrounds packets of muscle fibers, and the wrappings of individual fibers. And this is what happens during programs of

prolonged stretching. The connective tissue gradually follows the lead of the muscle fibers, the muscle as a whole gets longer, and flexibility is improved. Hatha yoga stretches are a safe and effective way to bring this about.
Nerves can accommodate to the stretch only because they don't take a straight course through the tissues that surround them and because their individual nerve fibers meander back and forth within the connective tissue ensheathments of the nerve itself. During the course of stretching a limb, the gross path of a nerve through the surrounding tissues is first straightened, and as the stretch continues, the serpentine course of the individual fibers within the nerve is also straightened. And after that, the enveloping connective tissues has enough elasticity to accommodate about 10-15% additional stretch without damaging the nerve fibers."

Furthermore, Coulter emphasizes the essential role of the nervous system, when it comes to relaxing or strengthening muscles in yoga. Whether the stretch must be allowed or limited, eventually depends on the kind of activity carried out by the nervous system. Without these protective functions the tissues would tear when the stretch becomes too severe. (1)

Greenman, a professor of biomechanics and osteopath, confirms the importance of nerval muscle control. To him, restoring the muscle balance, i.e. regaining the physiological length and strength of the muscle, and muscle control is a fundamental principle in the treatment of muscle dysbalances: "Many systems of exercise deal with length and strength, but few deal with the issues of motor control. A successful exercise program restores nervous system control of muscle function as much as possible. …Appropriate muscle balance of agonist and antagonist provides shock absorption and prevents impact loading of joint surfaces. …Body balance is a complex function and is the result of three primary afferent systems. Our orientation in three-dimensional space results from the visual system, the vestibular system, and the proprioceptive input from the soles of the feet." (2)

Many yoga standing postures are a big challenge with regard to the balance, thus training the proprioceptors and improving the motor control and the muscle balance. Ann Brownstone, a yoga teacher, describes this as follows, "Vestibular stimulation is abundant during the practice of yoga due to the multitude of head positions relative to gravity and relative to the rest of the body. The integration of the vestibular system with the proprioceptive and visual systems is potentiated in many postures, especially standing balance postures such as triangle pose (Fig. 3), where a novel

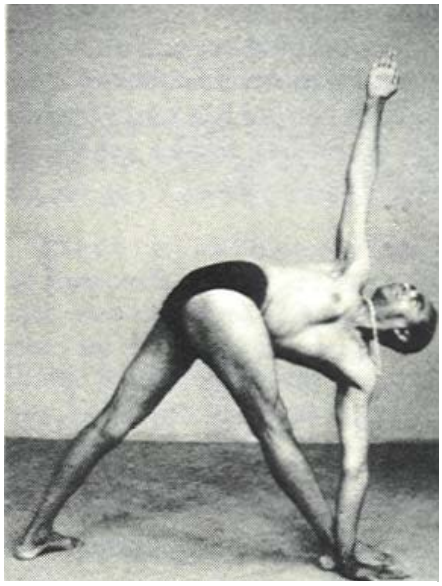


Fig. 3: Triangle pose

head position and visual focus is utilized to challenge the integrity of balance served by the vestibular and proprioceptive systems.” (3)

Mary Janisse, a physiotherapist and yoga therapist, emphasizes the importance of adhering to biomechanical principles and taking the exact joint structures into account when carrying out balance exercises: “The central premise of movement balancing is that mechanical efficiency will increase the longevity of our body’s movement system. When mechanical precision is lost, the joint surfaces wear unevenly and the soft tissue develops small tears (cumulative microtrauma). Joint stability requires a balance of active and passive forces acting on a joint. It is balance, not strength, that allows the body to function safely and freely.” (4)

Yoga can improve muscle balance in a very functional way. Frequently, a muscle is blocked by activating the antagonist, and relaxed and lengthened through controlled breathing. The antagonist is strengthened at the same time. Strengthening is also obtained by the difficult, often very unstable positions in which the body is held relative to gravity for some time.

Strengthening and stretching of structures occur at the same time in yoga. Donna Farhi, a yoga teacher and movement therapist, emphasizes the close connection between flexibility and strength, ”Flexibility without strength equals instability. Strength without flexibility equals rigidity. Either situation means trouble. Balanced exercise develops both flexibility and strength. As you increase your range of movement, the span between the joints needs to be supported by strong muscles and ligaments.” (5)

Practising asanas can improve muscle balance, because while a certain muscle group is stretched, other muscles, the activity of which is necessary to maintain the position, are strengthened at the same time.

Breathing generally plays an essential role in carrying out asanas. It helps to carry out the positions correctly by facilitating the intensification of the stretch position

through controlled exhalation, without going beyond the physiological limits of the tissue. Smooth, controlled breathing prevents excessive tension and facilitates a certain relaxation and inner rest, while holding the position.

In osteopathy, too, breathing can be used to support mobilization. Greenman writes on this topic, ”Another example of a physiological method is the use of respiratory effort to affect mobility of vertebral segments within spinal curvatures. Inhalation effort enhances straightening of the curves and hence backward bending movements in the thoracic spine and forward bending in the cervical and lumbal spines; exhalation effort causes just the reverse.” (6)

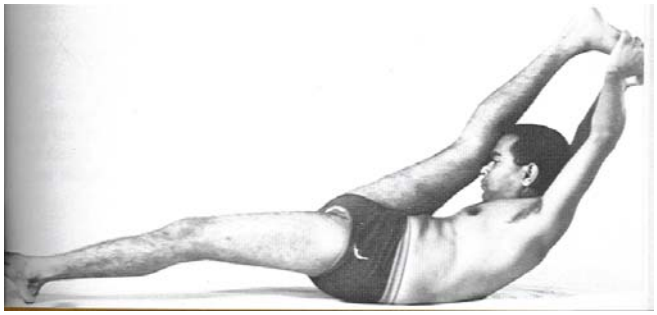
J. J. de Morree mentions the effectiveness of muscle stretching in yoga in his book on the human connective tissue, ”When the muscles are lengthened and, for a short time, statically tensed, deeper relaxation is possible. This technique is often used in different forms of yoga. Being clearly aware of the muscle helps to relax it. In addition, the stretch combined with tension activates blood flow. The postures and movements of yoga are a means to gain relaxation, better self control and concentration.” (7)

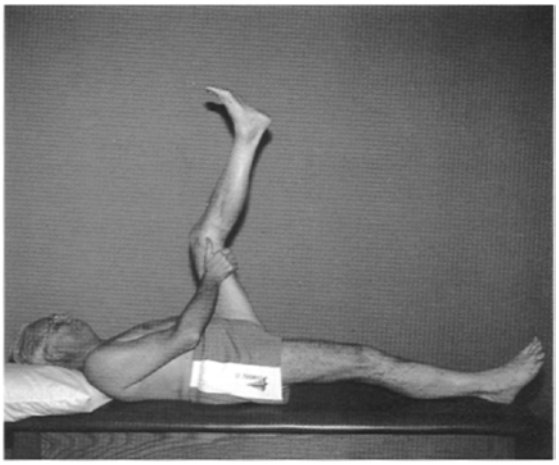
T.V. Ananthanarayanan, a student of T. Krishnamacharya, explains the stretching technique in yoga as follows, ”Asanas involve slow and steady movements and muscle stretch during the maintainance of a posture. The asana exercises fall into the category of isometrics and muscle relaxation. In the use of asanas as a therapeutic instrument, slow stretch is a very important method for achieving muscle relaxation and improved motor function. Thus asanas and counterposes utilize the two components of isometrics and muscular relaxation facilitied by intense stretching. The patient’s sensitivity to internal feedback mechanisms also increase with improved muscle control due to stretching being carried out by the patient himself. This element is absent if the stretch is applied by external means.” (8)

This is an important aspect which distinguishes the yoga practitioner from a patient who goes to an osteopath. The practitioner stretches and strengthens actively and on his or her own initiative while carrying out an asana. He is very aware and decides on his own, how far he wants to go and soon realizes, where his physical and mental limits are. During an osteopathic treatment the patient mostly takes on a passive role. He expects the osteopath to help him. The osteopath carries out the necessary corrections using manual techniques. If the complaints, however, are caused by an

unfavourable lifestyle, the willingness of the patient to eliminate or reduce possible causative factors like, for example, lack of exercise, bad posture, stress, would essentially contribute to long-lasting cure.
In our times, when the stress burden on the individual steadily increases, yoga could help a lot.

The following figures illustrate similar structural effects of yoga exercises such as Eka Pada Sirasan (Fig. 4) and stretching exercises which are used in osteopathy. (Fig. 5)





Above: Fig. 4: Eka Pada Sirasan
Right: Fig. 5: Self stretch hamstrings

5.2 Visceral Therapy and Comparable Aspects in Yoga

In osteopathy, good mobility of the organs is considered an important prerequisite for their proper functioning. The internal organs must allow a change of their shape and be able to glide well. Jean-Pierre Barral, a pioneer of visceral osteopathy, writes in the preface of one of his books, ”All pathology of the viscera results in what we will call visceral restrictions. When this happens, the viscera in question is no longer freely mobile in its cavity but is fixed to another structure. The body is forced to compensate for this situation, which leads to a functional problem and eventually, if the compensation is inadequate, to a structural problem.” (9) And, ”The peritoneum is a link between all the viscera and related structures, and acts like a reciprocal tension membrane.“ (10)

In yoga the organs are mobilized, too. In his writings Iyengar repeatedly emphasizes the mobilization of all body fluids through yoga exercise. It is a prerequisite for the mobility of the body fluids, however, to release those connective tissue structures, which impair the mobility. This in turn means that obstructions caused by tensions in

ligaments, fasciae and muscles have been removed, which inevitably leads to an improvement of the organs' ability to glide.

Asanas, as it has already been mentioned, improve blood circulation in the whole body. Those asanas directed to arms and legs keep the circulation as a whole active. Circulation in the arteries, capillaries and veins, as well as the lymphatic drainage, is stimulated by rhythmic contraction and relaxation of the muscles, which serve as pumps by opening new and unused vessel paths. This facilitates an effective supply and use of energy and considerably improves the power of resistance against disease. Although asanas cause similar effects in the trunk, it is pranayama that influences the rhythmic inhalation of the lungs by ensuring proper circulation of the body fluids in kidneys, stomach, liver, spleen, intestines, skin and other organs, which is a prerequisite for their proper functioning. (11)

The diaphragm plays a crucial role in the mobilization of the internal organs in both osteopathy and yoga. Therefore, the diaphragm will already be discussed in detail in this chapter. The focus will be on the mobilization of organs, however.

Richard C. Miller, psychotherapist and yoga therapist, writes on the importance of good diaphragm movement during breathing, ”Abdominal-diaphragmatic breathing not only promotes a rise in CO^2 throughout the system, but also promotes lymphatic circulation and venous return to the heart as well as enhances the ventilation-perfusion response in the lungs. These three effects result from the down-and-up movement of the diaphragm, which occurs on inhalation and exhalation. As the diaphragm descends during inhalation, it also presses upon and helps bring peristaltic movement to the stomach, intestines, and liver, thus promoting the health of these organs. The pericardium of the heart is attached to the diaphragm and is stretched as the diaphragm moves downward during inhalation providing a massaging action to the heart. During exhalation, the ascending force of the diaphragm helps the venous return to the heart as well as promotes lymphatic circulation throughout the body.” (12)

At the same time, slow, deep and continuous movement of the diaphragm activates the parasympathetic nervous system and reduces the activity of the sympathetic nervous system. This promotes reduction of indirect damages to the organs caused by stress, for example in the heart or in the brain.

Owing to the many fascial connections of the diaphragm with its environment, any inhalation or exhalation causes a massage and a shifting of the internal organs. The osteopath Andrew P. Thomas writes in a yoga journal, ”The fact that the heart is fascially bound to the diaphragm directly, and indirectly to the sternum and lower neck joints, would seem to be a device intended to ensure manipulation by diaphragmatic action. The fascial connection is so widespread that it is clear that any diaphragmatic movement will cause heart migration and, it is reasonable to assume, cause changes in shape – a sort of built-in heart massage. Indeed, this action makes a great deal of sense when one considers that diaphragmatic contraction also massages the liver which is directly up against the underside of the diaphragm and, by inference, massage to the whole abdominal cavity can occur with a strong diaphragmatic action.” (13)

As the volume of the internal organs is incompressible, changes in the shape of the abdominal cylinder must occur in order to obtain the massage effect. Barral explains the effect of the diaphragm on the organs as follows, ”Posteriorly and inferiorly, the cylinder is composed of skeletal structures: the vertebral column and the pelvic girdle. The force exerted by the movement of the diaphragm is insufficient to deform these structures, but is sufficient to push the anterior abdominal wall, composed only of muscle and connective tissue, forward. The volume lost due to a shortening of the distance between the diaphragm and the pelvis is regained by increasing the anteriorposterior diameter. The continual deformation of the abdominal wall, fluctuating between the two extremes of end-inhalation and end-exhalation, will cause the viscera to slide and rub against one another within the abdomen.” (14) The importance of the diaphragm’s pumping movement is increased by the fact that it takes place about 24,000 times a day.

In yoga some pranayama techniques activate the diaphragm and intensify breathing. Among these techniques are the bandhas. Bandha means “captivity, connection, bondage, grip, lock“. In hatha yoga this means contractions in certain areas of the trunk, which are exercised during the pranayama and which, above all, influence the direction in which energy moves. When prana is made to flow in the yogi’s body by the practice of pranayama, it is equally necessary for him to employ bandhas to prevent the dissipation of energy and to direct it upwards through sushumna nadi, the main channel for the flow of nerval energy, which is situated within the vertebral column.

One of the bandhas, udduyana bandha or abdominal lift (Fig. 6), shall be described here, because it has, apart from its actual energetic effect, a clearly recognizable mobilizing effect on the viscera, a stretching effect on the diaphragm. The technique is described, inter alia, by Coulter, “To do it you must exhale to your maximum, hold your breath out, try to inhale without inhaling and create a vacuum in your chest that sucks your diaphragm and abdominal organs to a higher than usual position in the torso. This can happen only if the body is sealed above and below – above at the glottis and below at the perineum. …The upper abdomen will form a deep concavity that extends up and underneath the ribcage. …Uddiyana bandha is a practice that frankly stretches the respiratory diaphragm. …It goes beyond the highest possible position the abdominal muscles can accomplish because the vacuum in the chest that is superimposed on full exhalation pulls the diaphragm (from above) to an even higher position. We can surmise that regular practice of uddiyana bandha will stretch, and in time lengthen the diaphragm’s muscle and connective tissue fibers, as well as keep the zone of apposition between the diaphragm and the chest wall healthy and slippery. You will be able to exhale more completely as you gradually lengthen the muscle fibers, and you will be able to breathe more comfortably and efficiently as you increase the diaphragm’s mobility.” (15)

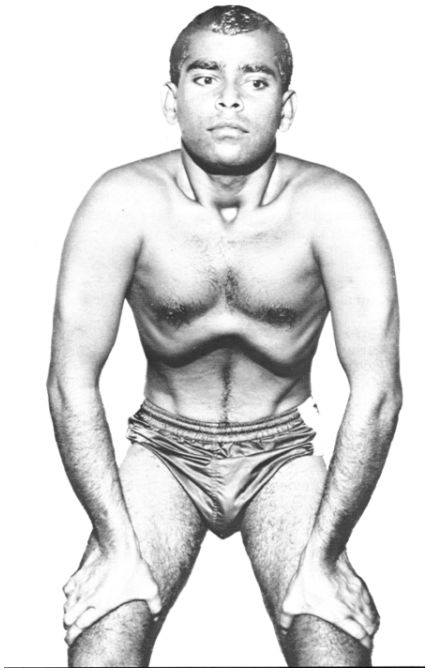


Fig. 6: Uddiyana bandha

Iyengar praises the effects of this bandha: “It is the best bandha, and he who practises it regularly, as it is taught by his guru, will be young again. It is said that it is the lion who defeats the elephant named Death.” (16) Apart from the massage effect on the internal organs, he also emphasizes the detoxicant effect of this bandha.

In osteopathy there are techniques to mobilize the diaphragm (lift) (Fig. 7) that are comparable to the effects of uddiyana bandha. Moreover, ptosis of internal organs relatively often indicates osteopathic treatment. In these cases the correctly practised and well-instructed exercise of uddiyana bandha could support the osteopathic treatment, because it counteracts the sinking of the organ.

Asanas can increase the movement of the internal organs against each other towards different directions. Inverse postures like the headstand, for example, reverse the effect of gravity and lead to mobilization of the organs in cranial direction. Forward and backward bending postures are more likely to lead to a shift in the sagittal plane, whereas twisting postures are more likely to shift the organs in the transversal plane.

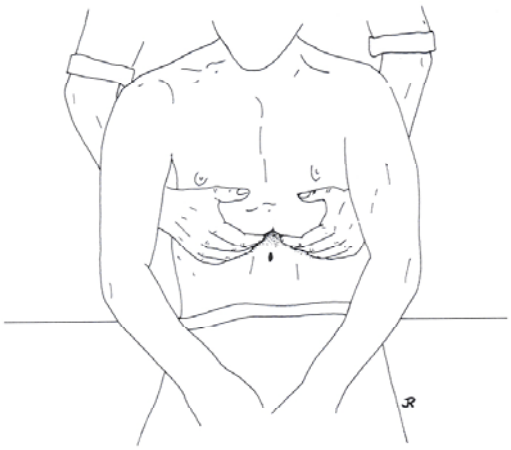


Fig. 7: Combined manipulation of the phrenic center

Coulter describes the effect of the asana groups on the functions of the internal organs as follows: “Forward bending postures seem to have mildly invigorating effects on the abdominal organs, possibly stimulating the enteric nervous system, and thereby enhancing digestion and assimilation of foodstuffs from the bowel, as well as relieving constipation.” (17) “Backbending postures stimulate the sympathetic nervous system and prepare you for activity. In twisting postures the axial compression of the spine and other structures of the torso improves nutritition to the intervertebral disks and squeezes blood out of the internal organs of the abdomen and pelvis, thus improving circulation in the great supportive systems of the body.” (18)

Another essential aspect in yoga is that by regular practice of the asanas the awareness and knowledge of one’s own body increases. Arpita, a former faculty member in Eastern Studies at the Himalayan Institute, writes in her article “Physiological and Psychological Effects of Hatha Yoga“: “The Hatha Yoga adept learns to visualize, with eyes closed, the specific muscles being contracted to hold the pose. This results in the ability to experience the energy flowing into them. With regular practice this expands to include awareness of internal organs, felt as areas of warmth near the corresponding muscles. The ability to concentrate awareness systematically throughout all of the organ systems helps the individual to develop awareness of internal processes and to ultimately gain control over the autonomic nervous system.” (19)

Increased awareness can have a great healing effect or even prevent oncoming disturbances, because by visualizing the structures the energy or the fluids can be

directed at will and internal organs can be influenced positively. (“Energy follows the mind“).

The visualization of structures, fluids or energy can also be an element in an osteopathic treatment. There can be fluid transition between structural and energetic treatment, which Barral also confirms in his book: “Osteopathy should be concerned with all the moves in the human body, from the smallest and simplest movements to the most complex. This leads to a confluence of the structural and energetic approaches. Osteopathic treatment, whatever form it takes, is an energetic action because the fact that we can have an impact on motion contributes to an improvement in the distribution of energy.” (20)

5.3 Craniosacral Therapy and Comparable Aspects in Yoga

Craniosacral therapy aims at the improvement of mobility in case of joint restrictions in the area of the skull and the sacrum, the improvement of circulation, the reduction of nerval irritations in the passage through the cranial floor, and the improvement of the cranial rhythm’s vitality.

The osteopath Greenman describes possible causes of disturbances in the craniosacral area: “Alteration in membranous tension affects the venous sinuses within the skull, resulting in the reduction of venous drainage and overall intracranious congestion. Abnormal dural tension might contribute to neural entrapment and result in altered neural function.” (21)

In yoga both pranayama and asanas can influence the craniosacral system positively. Further parallels are energetic relations and the idea of universality and stillness.

5.3.1 Breathing

The diaphragm as the main respiratory muscle plays an essential role with regard to breathing.
According to Paoletti the diaphragm is also an important buffer zone for the whole fascial system including the meningeal fascial chain. (22)

Practising pranayama improves breathing mechanics, keeps the diaphragm supple and in good function, and can thus improve the quality of the meningeal fasciae.

Greenman describes in what way breathing can influence the craniosacral motion in osteopathy: “Voluntary inhalation enhances flexion movement of the craniosacral mechanism, and voluntary exhalation enhances extension movement. The use of forced inhalation or exhalation and breath retention at the extreme of movement can be used as an activating force to enhance motion in any direction.” (23)

So craniosacral motion can be directed towards flexion or extension by using pranayama techniques which intensify inhalation or exhalation.

5.3.2 Asanas

Practising asanas is another possibility to influence the craniosacral system by yoga.

Good mobility of the whole body, as it is obtained by practising asanas, also affects the craniosacral system via the fasciae positively. Dorsiflexion of the foot, for example, can increase the range of flexion at the sphenobasilar synchondrosis, whereas plantarflexion can increase the range of extension. The more freely these supporting movements can be carried out, the greater will be the effect on the craniosacral system. By practising halasana (plough) (Fig. 8), for example, the posterior fascial chain and the meningeal fascial chain with their connection to the posterior longitudinal ligament become relaxed, which can be felt as a deep tissue tone different to a feeling of muscular stretching.

Fig. 8: Halasana

Rollin E. Becker, an important cranial osteopath, gives the example of the lotus position (padmasana) (Fig. 9). The shifting of weight to the ischial tuberosities and the thighs and the correct upright position of the vertebral column prevent the restriction of the primary respiratory mechanism: “They have suspended their primary

respiratory mechanism in midair - their entire mechanism from the cranial vault down to the sacrum is literally hanging in space. Because this involuntary mechanism is rhythmically moving to and fro, the fluid, the reciprocal tension membrane, the central nervous system, and the articular mechanism can just hang there in suspension and allow the potency within the cerebrospinal fluid to nourish every single cell in the body. It allows the reciprocal tension membrane to gently rock the fascias into flexion/external rotation and back again; it allows the bones, ligaments, central nervous system, and everything else to shift and modify their pattern at a microlevel, which permits them to shift back towards a more normal physiological mechanism. They are literally in a state of self-treatment when they are in that position; they are making this mechanism a living factor of function." (24)

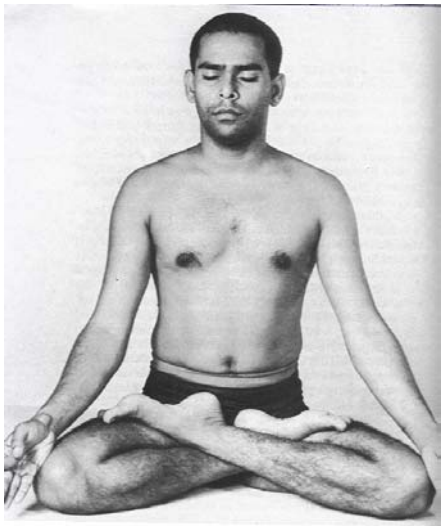
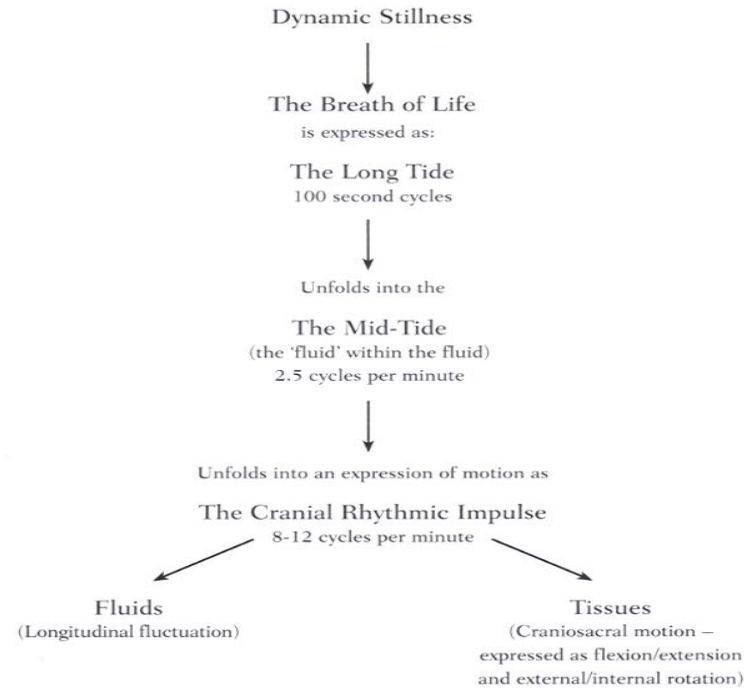


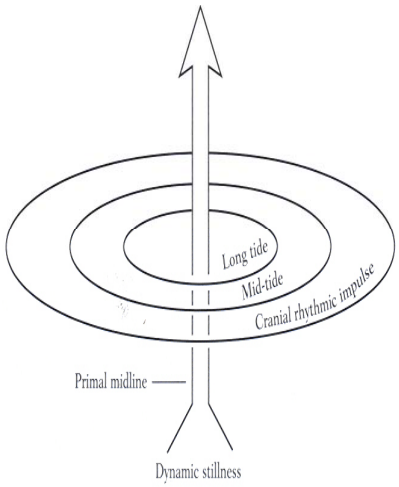
Fig. 9: Padmasana

Iyengar puts more emphasis on the energetic effect of padmasana. He calls padmasana (lotus position) the king position for practising pranayama or meditating. The prana energy flows steadily and spreads out through the whole body. (25)
The 47th verse of the Hatha Yoga Pradipika promises the destruction of all diseases by practising padmasana. (26) The free mobility of the membranes and the unrestricted primary respiratory mechanism mentioned above probably are a prerequisite to the free and unrestricted flow of energies.

5.3.3 Energy

The energetic aspect of craniosacral osteopathy also has its equivalent in yoga.
Not only the cranial rhythmic impulse is used in craniosacral therapy. There are two more important rhythms, the mid-tide and the long-tide. These "three tides" are manifestations of the "breath of life", the life force that is also called "primary energy". (Fig. 10) Michael Kern gives an illustration of the three tides depicted as circles of beams arranged around a primal midline. (Fig. 11) He describes the axis and links it with yoga: "The notochord provides the axis of development for the central nervous system and vertebral column. Once the growth of these tissues has been established, the notochord disappears. Nevertheless, as more and more cells divide and other systems are formed, the primal midline remains the cardinal axis of





embryological development. The primal midline becomes “the main energetic and structural organizing axis of the human body”…The breath of life is continually arising along this axis throughout life. In yoga theory it is the sushumna (the central energy channel). (Fig. 12) The Breath of life has been called primary energy, for it is our most undifferentiated form of energy, like the reference beam of a hologram.” (27)

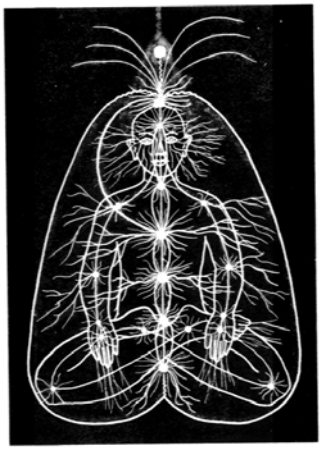


Fig. 12: The nadis with the Sushumna

The primary energy also plays a role in yoga. Jim Dreaver, a holistic chiropractor and somatic educator in health, healing, spirituality and somatic education, describes this energy as follows: “We experience Being as an energy, a flow, a presence. It is something that can be felt. It is the power behind the universe, the source of all life and creation…”

He emphasizes how important it is that this energy can flow freely within us. Structural and emotional blocks can obstruct that flow of energy, which expresses itself in our body as increased tension and stress. The aim is to feel

and recognize the patterns behind the tension that are hidden from our consciousness, because only then we can get rid of them. Dreaver continues: “When the body/mind relaxes, energy is liberated.” (28)

So that life force or potency plays a crucial role in both systems, osteopathy and yoga. Both systems aim at the free, unrestricted flow of energy, which is part of the universal energy.

5.3.4 Universality

The idea that the human body and human life are part of a universal wholeness can also be found in both osteopathy and yoga.

On that subject the osteopath Becker writes: “We have something called a mind, consciousness, or awareness, to allow us to realize we are a product of a total environment, and not merely our own, and that we must be in rhythmic balanced interchange with that environment. These are some of the elements for the integrated function of the self-organization of life for the individual in maintaining health and adapting to trauma and/or disease.” (29*)* In another of his books he writes: “We are in relation to the whole universe and respond or reflect as positive and negative spirals in relation to the whole – not to the limited mechanism within our skins.” (30)

The psychologist, yoga teacher and yoga therapist M. Keane calls this concept of energy which is the basis of all body experiences, emotions and thoughts the key to the understanding of yoga: “The universe is simply vibrating waves and particles taking form and shape. All the elements of our world, stone, wood, fire, air and water are different vibrations of particles. Our words and our thoughts emerge as vibrations of our nervous system. All our emotions are expressions of the energy of our mind/body systems. For the yogi the goal is not just the adjustment of a symptom but the alignment of personal energy with universal energy…”

This, however, requires the unrestricted flow of personal energy. In connection with this he describes the effects of traumatising experiences on the body. The body intensifies its tension to protect itself from those negative influences. The protective tension in turn blocks the free flow of energy, which limits a person’s perception: “Yoga seeks greater consciousness beginning with the body. …It is important to note that for the yogi, energy and life force are synonymous.” (31)

In osteopathy a kind of memory function is attributed to the connective tissue / the fasciae. It stores physical as well as mental traumata in form of energy. Treatment of the affected tissues releases that energy, which often manifests itself as emotions coming up or a revival of the traumata.

Keane explains in his article: Yogi Amrit Desai (1993) describes the principle of energy and gives it general validity for both osteopathy and yoga: “At the most basic level our life force or energy, expands and contracts our hearts, digests our food, heals our physical wounds and breathes in and out of us in a reliable way. This higher life force has many higher evolutionary potentials that are meant to work through all human experience – the physical, emotional, mental, and beyond. The higher potentials manifest themselves fully only as we learn to access this power and cooperate with its innate wisdom. Yogis call this life force prana, which functions in perfect harmony with universal laws.” (32)

In osteopathy this life force would be called “breath of life“. In both osteopathy and yoga life force, potency or prana enables the body to cure itself of diseases or traumata. This positive change often begins with the stillness of the tide or the stillness of the motion of the mind.

5.3.5 Stillness

Another term that shall be explained here in more detail is “stillness”. Again there are sources both in osteopathy and yoga which deal with the healing effect of “becoming still”.

Becker describes this stillpoint as the point when the motion of the cerebrospinal fluid becomes still: “During this stillpoint, there is an immediate shift within the tide and an interchange between the cerebrospinal fluid and all the fluids of the body – a transmutation between the dynamics of the Potency, with its Breath of Life, and the vitality of every living tissue and fluid in the body. It is a point wherein a transmutation takes place between the Potency and its manifesting, visible physiological functioning in the whole body. …In this response to the stillness of the tide and the transmutation, the effects go beyond a simple release of somatic dysfunction to a release which initiates a return to health functioning. Knowledge and use of the cerebrospinal fluid tide provide an example wherein one “allows physiological

function within to manifest its own unerring potency rather than use of blind force from without."" (33)

During an osteopathic treatment the patient must be lead to this stillpoint. It is, at the same time, the point of balanced tension, when the least possible resistance can be found in the tissue, the least extent of "push and pull". On that subject Kern writes, "When this point is reached, the tissues settle into stillness. ...And the practitioner need only wait for the intrinsic forces of the patient's own physiology to get to work." (34)

In yoga the stillpoint is the point, when the mind becomes still. This state is reached by practising pranayama and meditation instead of an osteopathic treatment.
Marc Halpern, the founder-director of the California College of Ayurveda, makes the parallels to the text by Becker obvious when he writes, "In the stillness created, the body is relaxed and prana flows freely without obstruction through the physical body to heal and repair any damaged areas." (35)

The text by Jim Dreaver could also be found in a book on biodynamic craniosacral osteopathy: "In the silence that follows the ending of thought, we actually experience a gathering, an accumulation of energy. It is like being at the ocean. If we sit still and let everything in our mind go, then the crashing of the surf on the beach and the cry of the gulls suddenly fills our whole being. We become aware of the immense creative power of the universe. We begin to realize we are one with that power. It cleanses us and renews us. It heals us at the deepest level of our being. We feel ready to go out and meet the world again." (36)

In yoga the tensions of the tissues are reduced to the greatest possible extent by asanas and pranayama and, above all, the free flow of prana is facilitated by pranayama and meditation. In a yoga journal a text by Jean Klein that is valid in both yoga and osteopathy can be found: "By the simple presence of silence, things find their natural harmony." (37)

5.4 Example: Shirshasana (Headstand)

The headstand is one of the best-known and most important yoga positions. The old books call shirshasana the king of asanas.

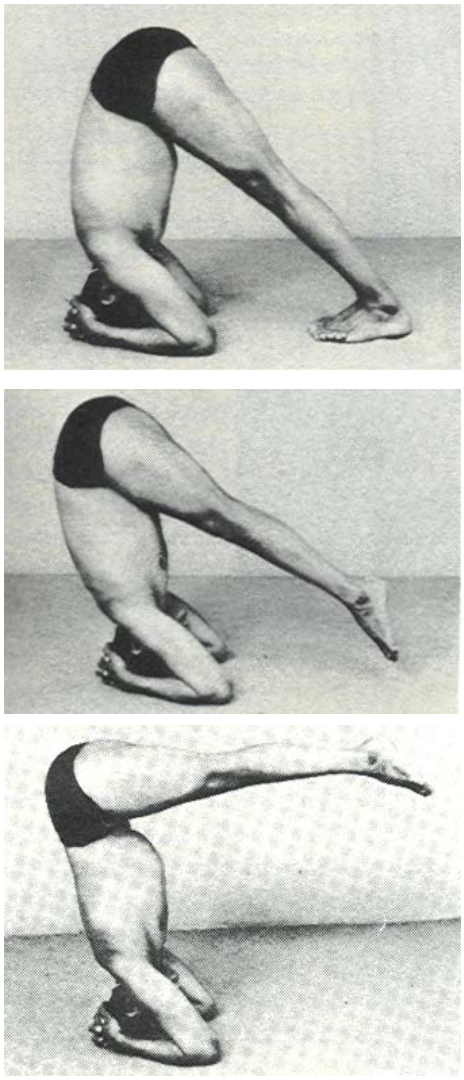


Fig. 13- 16
Shirshasana

Iyengar describes the technique as follows,"1. Fold a blanket four times, place it on the floor and kneel down in front of it. 2. Place your forearms on the blanket, taking care that the distance between the elbows is not wider than the shoulders. 3. Interlock your fingers completely so that the palms form a cup. 4. Place only the crown of the head on the blanket so that the back of the head touches the palms. Neither the forehead nor the back of the head, but only the crown of the head is allowed to rest on the blanket. 5. Straighten your legs and try to press your heels against the ground, while the back remains in upright position. 6. Exhale, lift the heels and lift the toes off the ground with a backward movement of the pelvis. Inhale. 7. Exhale and lift your legs until they are vertical. (Fig. 13-16) Stay in this position for up to five minutes, breathing normally. Mastery of shirshasana gives balance and stability, both physically and mentally." (38)

The anatomist David Coulter describes the effects of the headstand in detail, "The headstand not only inverts our vision of the world, it inverts the pattern of blood pressure in the body – increasing it in the head and dropping it to practically nothing in the feet. The physical pressures (on top of the head, in the arteries and veins, in the soft tissues of the head and neck) and psychological pressures affect every system in the body in one way or another: musculoskeletal, nervous, endocrine, circulatory, respiratory, digestive, urinary, immune, and reproductive." (39)

5.4.1 Visceral Effect

5.4.1.1 Cardiovascular System

Turning upside down in the headstand reverses the figures seen standing in a straight-forward fashion. Blood pressure will remain at 120/80 mmHg at heart level, at least if you are not under too much stress, but the pressure in the arm will rise to about 140/100 mmHg because the arm is alongside the head and below the heart instead of level with it. We can calculate that blood pressure will only be about 40/0 mmHg in the feet and that it increases to 150/100 mmHg at the top of the head. (Fig. 17) ...Increased blood pressure in any posture stimulates the baroreceptors in the large arteries that lead from the heart to the head, which in turn affects both limbs of the autonomic nervous system: it increases parasympathetic nervous system input to the heart, and it reduces sympathetic nervous system input to both the heart and the arterioles – all of this tend to lower blood pressure. This is called reflex hypotension. If you are entirely comfortable in the headstand, the input of the baroreceptors to the central nervous system will generally produce a lower heart rate and blood pressure than what is assumed simply on the basis of fluid dynamics. (40)

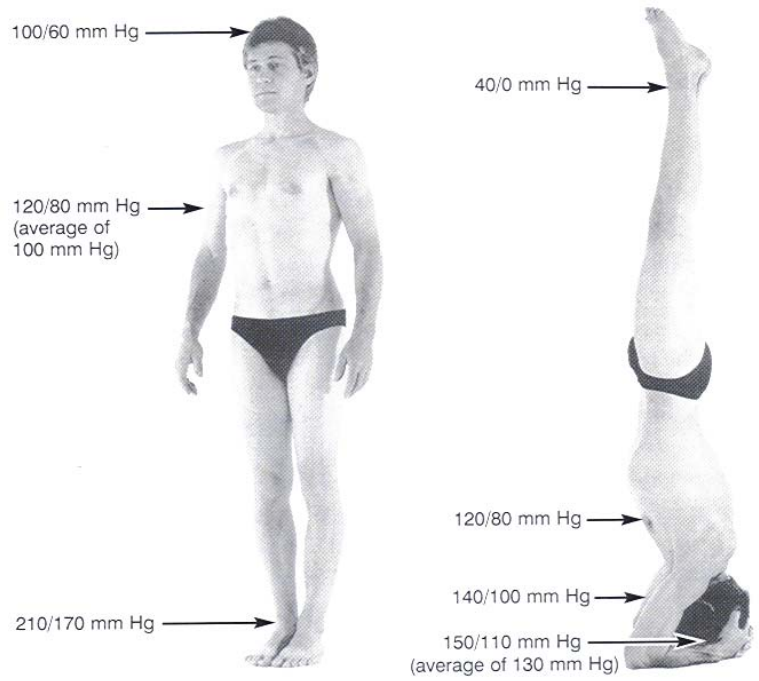


Fig. 17:
Left: Arterial blood pressure in a standing posture,
Right: Calculated blood pressure in the headstand

Dr. F. J. Chandra, qualified in Medicine and Human and Experimental Physiology at London University, also describes the effect of the baroreceptors, which try to bring blood pressure that has increased by 20 per cent in the headstand back to normal. “This can be effected either by slowing of the heart, or by dilation of blood vessels to

drain blood away from the neck. In addition, there is a drop in the pulse rate (from 80/min to 65/min are typical figures): This is true of nearly any head- down position in yoga where the carotid body is stimulated, since when the head goes below the heart blood tends to flood into the neck, stimulating the baroreceptor there which will tend to slow the heart. It is possible this could have therapeutic use in cases of heart disease where damage is not too severe, but nobody has tried it out." He also mentions another effect of the stimulation of the carotid pressure organ, the inhibitory effect on the reticular formation in the brain. "Thus the headstand promotes an improved pattern of blood flow through the brain, but at the same time quietens down the reticular formation. Practice of headstand does not make people sleepy, but there are many claims that practiced before going to bed, it helps cure insomnia, and this seems to be the reason." (41)

This cardiovascular effect of the headstand also leads to an improvement of the nutritional saturation on the cellular level. Ann Brownstone, a body- work therapist and yoga teacher, describes that in her article: "The vascular dilation and resultant increased blood flow to muscle influences the nutritional saturation on the cellular level (trophotropic system), and general muscle tone in the form of muscle tightness is reduced." (42)

Coulter discusses it in more detail, "If you can remain in an inverted posture for just 3-5 minutes, blood will not only drain quickly to the heart from the lower extremities and the abdominal and pelvic organs, but tissue fluids will flow more efficiently into the veins and lymph channels, and this will make for a healthier exchange of nutrients and wastes between cells and capillaries." (43)

Dr. Chandra describes the effect of the headstand on the veins and in what way it has a positive influence on varicosis, "If someone with varicose veins practices headstand, two things happen. One, the veins are emptied of stagnant blood temporarily and when normal posture is resumed fresh blood will re-fill the veins. Two, it is possible the release of anticoagulants is stimulated, helping to prevent clotting which is quite common in varicose veins. This has not been used therapeutically or tested clinically." (44)

Coulter also describes possible effects of the headstand on the blood flow in the lungs: "Although studies of pulmonary arterial pressure relationships and blood flow in inverted yogapostures have not been published, it seems certain that the patterns

of pressure and flow of blood in the lungs will be reversed, and that inversion will cause the upper rather than the lower parts of the lungs to be perfused with blood most efficiently.” (45)

5.4.1.2 Breathing Issues

Thoracal and paradoxical breathing is impeded because the trunk musculature including the intercostal muscles contributes to the maintenance and stabilization of the headstand. This position calls for abdominal and diaphragmatic breathing.
At the end of exhalation the abdominal organs are pressed cranially (toward the floor) by the force of gravity, which results in a maximum lengthening of the muscle fibres of the diaphragm.

Coulter also describes the strengthening effect of the headstand on the diaphragm, “The diaphragm will not only be drawing air into the lungs, it will be pressing the abdominal organs to a more inferior position in the trunk (toward the ceiling) from fixed origins on the base of the rib cage and the lumbar lordosis. And even so it is working against the force of gravity, this is the easiest way you can inhale. It’s also extra exercise, it strengthens the diaphragm, and it creates the purest form of abdomino-diaphragmatic breathing. … Upside down, the diaphragm stays in a state of eccentric contraction throughout exhalation to restrain the abdominal organs from a free fall toward the head. ...Because the muscle fibers of the diaphragm are lengthened to their working maximum during an inverted exhalation, the functional residual capacity of the lungs will be substantially reduced. This means that a constant alveolar ventilation of 4200 ml/minute will be more efficient in transferring oxygen and carbon dioxide to and from the blood in the headstand than in an upright posture.” (46) (Fig.18)

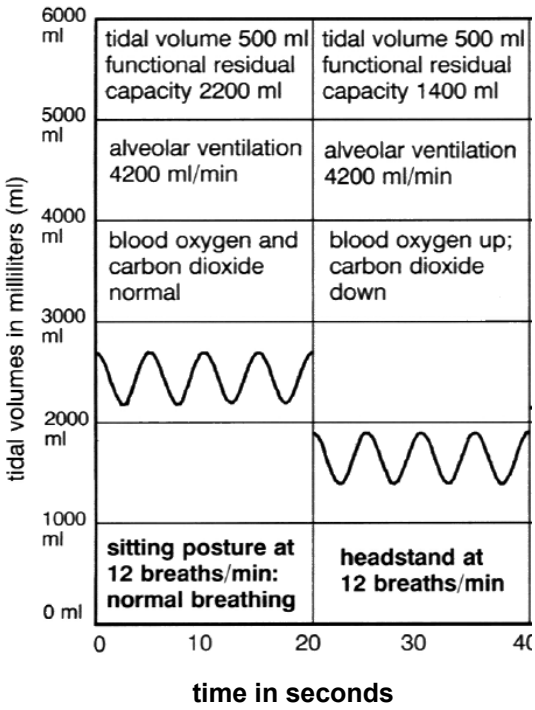


Fig. 18: Simulated ventilation, sitting upright and in the headstand

In his article Dr. Chandra also deals with the drainage effect of the headstand on the lungs: “If one considers the secretion at the bottom of the lungs, clearly it is difficult to cough these up in an erect position. If one can hold the head-down position long enough, say several minutes, the secretions can drain headwards under the influence of gravity, and reach larger bronchioles, from which they can more easily be coughed up when one is upright again.” (47)

5.4.1.3 Effect on the Position of Internal Organs

Owing to the reverse effect of gravity in the headstand, ptoses of organs generally can be influenced positively, if the inverse position can be held long enough.

Dr. Chandra describes, for example, the effect of the headstand on the position of the uterus, ”As one goes up into the headstand, one goes through an approximation of a stage of the knee-chest position used for correcting retroversion of the uterus. Under the influence of gravity and the way in which the body is positioned, the womb gradually twists and assumes at least a median position, if not the correct position. It would seem to me in the headstand the full force of gravity of the womb, and probably the way in which one goes up into the headstand tend to bring the womb forward and bring it into the correct position. Whether the effect persists no work has yet shown, but it is a theoretical possibility it may help retroversion.” (48)

In addition to this, Iyengar emphasizes the positive effect of the headstand in case of constipation, and an improvement of blood supply to the hypophysis and the pineal gland. (49)

5.4.2 Structural Effect

According to Dr. Chandra the headstand clearly has a strengthening and stabilizing effect:
“If we consider the headstand position, to prevent the legs collapsing at the knee or hip and to prevent the back from collapsing in various possible ways, agonist and antagonist muscles on both sides of the body must be kept in mild contraction to convert one’s body into a pillar that will be able to remain vertical. The arms are, of course, an exception as one is using them as a support but bent, and not as straight, rigid columns. However elsewhere many muscles are exercised in pairs, so this form of exercise may be considered efficient in this sense.” (50)

In the headstand the cilia of the vestibular system are activated, which results in an increased tone especially in the postural muscles.
Ann Brownstone writes on the benefit of this effect in the case of depressive symptoms: “These muscles include the neck, trunk, and limb girdle anti-gravity muscles necessary for erect posture and carriage against the incessant pull of gravity. This mechanism of increased extensor tone in the spine and chest challenges the hypotonic (low tone) effect of grief, depression, and other negative affective states. We can speculate that enhanced mood experienced during and after inverted postures is partly due to this challenging or contrasting of tone and resultant effect on the limbic cortex (emotional centers) and frontal cortical functioning.” (51)

5.4.3 Craniosacral Effect

The contact of the head with the floor corresponds to the point of the vertex in the area of the superior sagittal suture. This region takes most of the body’s weight in the headstand. This results in caudal pressure on that point of the parietal bone.
Magoun, a student of Sutherland writes on the physiological motion of the parietal bones: “This is external and internal rotation on an arbitrary axis which, for each bone, runs from a point on the coronal border, slightly lateral to bregma, in a posterolateral direction to the parietal eminence. In external rotation, synchronous with sphenobasilar flexion, the parietal rotates about this axis to carry the sphenoid angle anteriolaterally while the mastoid angle is moving more laterally than anteriorly. In so doing the sagittal margins are slightly depressed and separated from each other, especially posteriorly.” (52)

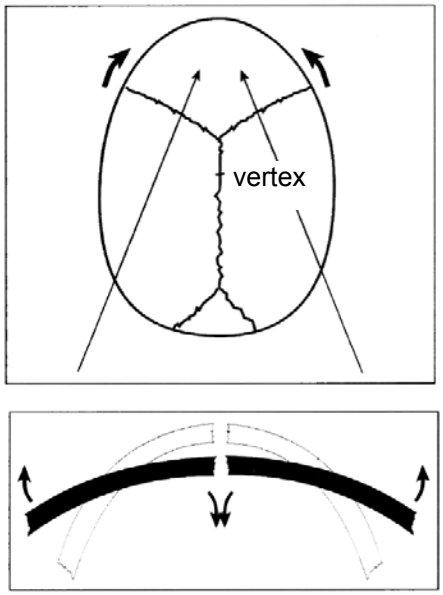


Fig. 19: The parietal bone during inhalation
Above: seen from above
Below: seen from behind

Owing to the pressure that is exerted on the parietal bones in the headstand, the parietal bones are brought in external rotation about these axes (Fig. 19), which might initiate a flexion of the system, an opening. Moreover, it might lead to an improvement of the drainage in the superior and inferior sagittal sinus, and to an improvement of the

blood flow in the subarachnoid space and in the lateral ventricles. No studies have been carried out on this topic yet.
This effect could be compared to the osteopathic spread-technique at the parietal bone.

Yoga exercises such as the headstand affect numerous systems of the body that are also influenced or treated in an osteopathic treatment. The effect of an osteopathic correction of a ptosis of an internal organ, for example, could be supported by regular practice of an inverse position, thus preventing the reocurrence of the organ's sinking.

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6 The Connective Tissue – A Link between Osteopathy and Yoga

In one of his books Torsten Liem writes: “The state of the tissues in general and of the connective tissues in particular, is the osteopath’s field of activity.” (1)

Still already realized the importance of the connective tissues for osteopathy: “The soul of man, with all streams of pure living water, seems to dwell in the fascia of his body. Does it not throw hot shot and shells of thought into man’s famishing chamber of reason to feel that he has seen in the fascia the framework of life, the dwelling-place in which life sojourns? He feels that he there can find all disturbing causes of life, the places in which disease germinate and develop the seeds of sickness and death. …I write a length of the universality of the fascia to impress the reader with the idea that this connecting substance must be free at all parts to receive and discharge all fluids, and to appropriate and use them in sustaining animal life, and eject all impurities, that health may not be impaired by dead and poisonous fluids. A knowledge of the universal extent of the fascia is imperative, and is one of the greatest aids to the person who seeks the causes of disease. The fascia and its nerves demand his attention, and on his knowledge of them much of his success depends.” (2)

Still’s words clearly appeal to the osteopath, to pay attention to the quality of the connective tissue as well as to the fascial connection during evaluation and treatment. These fasciae partly or completely form membranes, aponeuroses, ligaments and mesos and are made up of connective tissue (embryologically of mesenchymal tissue). Therefore, they can be found everywhere in the whole body, cover all anatomical structures and take on various functions. They support the muscles and thus ensure their function. As fascial chains they transmit forces in the body, they take on shock-absorbing and protective functions and play an important role in metabolism and the defensive system. As has already been briefly mentioned in the chapter before, the osteopath Serge Paoletti even attributes the function of a peripheral brain to them: “Fasciae permanently communicate with the cell via the ground substance, thus securing communication between the intracellular and the extracellular environment. As a kind of guard that can intervene before the general system has to, they are able to make decisions autonomously. This is why one can speak of a “peripheral brain“. Fasciae are equipped with a “cellular memory“. As a heritance of the embryological development the fasciae have retained their motility,

their rhythmical motions.” (3) Motility is used in diagnosis and treatment after long palpatory training.

Paoletti deals with the structure of the connective tissue in greater detail. The ground substance is made up of fibroblasts and forms a hydrated network around the fibre proteins, comparable to gel. Thus, it can absorb shock and resist compression forces. Owing to the intensive exchange between the ground substance and capillary blood, the ground substance plays an important role in the nutrition of the cells.

Paoletti writes, ”The connective tissue and the ground substance also have close contact to the cellular elements of the human body through their mediators. The vascular system, the lymphatic system and the nervous system end in the area of the ground substance and do not lead any further into the cell. All these different systems supply the ground substance with the necessary nutrients and information from the periphery, and exchange them for metabolic waste and information from the cells. The cells literally bathe in the extracellular fluid, which enables communication with the ground substance. The aim of this dialogue is to build up a defence barrier and to protect the cell from attacks.” (4)

The quality of a tissue and its mechanical dynamics are determined by the local concentration of proteoglycans and hyaluronic acid, which in turn is determined by endogenous and exogenous factors. Genetic factors, malnutrition, stress, bacterial and viral infections, traumata...can lead to a solidification of the ground substance with a thickening of the collagenous fibres.

Paoletti also writes, ”Under continuous pressure the connective tissue completely changes its structure, especially at the points of insertion, where calcification starts. In the case of very strong tensions we become aware of certain ligamentous or fascial attachments which calcify progressively. As a result of irritations, inflammations and repeated severe pressure the connective tissue has built up a defence system, transforming into bony tissue. Here we get to know a remarkable adaptation system, which is reversible.” (5)

The palpation of the qualitative improvement of the tissues represents an essential indication of the success of an osteopathic therapy.

The quality of the connective tissues also plays a role in yoga. Solidifications, adhesions, calcifications... reduce the flexibility of the body. To the yogi a mobile, healthy, permeable body is a prerequisite for his further mental and spiritual development.

Coulter writes, inter alia, on the rehydrating effect of yoga exercises, “Fascia is flexible if we keep moving, stretching, and breathing, but if we allow any part of the body to remain immobile, its fasciae become less flexible and eventually restrict our movements, like gloves that fit so tight that you can’t bend your fingers. … Groundsubstance is normally fluid, but it congeals and loses moisture if the surrounding tissues are inactive. And as it looses moisture it loses its lubricating properties. The entire body tightens down. Tendons, ligaments, and joint capsules become brittle, muscles lose much of their elasticity and ability to function smoothly, and the tissues become susceptible to injury. These reversals are the main reasons for morning stiffness, and they are a compelling argument for beginning every day with a session of hatha yoga. To rehydrate the ground substance a short, lazy practice is not as effective as a long and vigorous one, and you get what you pay for. The benefit is well-being; the payment is work and stretch.” (6)

In his article “Yoga and Fascia“ the osteopath A. Thomas also confirms that yoga exercises influence the fasciae positively. Especially when dealing with a restricted range of motion that is caused by habitual postures and lack of exercise and which shows as retraction of the fasciae, yoga can make a valuable contribution to mobilization and the improvement of tissue functions: “Practicing the yoga postures is one of the only processes which satisfies the criteria for restructuring fascia, namely, broadening and lengthening it past the existing limits of extensibility. Numerous positions must be practiced in order that this may occur throughout the entire body. …Since we know that fascia carry many communicating structures, this process of releasing compression on the fascial structures is bound to lead to better nerve signalling, vascular performance and lymph drainage.” (7)

W. Thomas Crow describes the effect of the primary respiratory mechanism on the fine structure of the connective tissues in his article “Effects of Manipulation on the Connective Tissue“. He deals with the metabolic status of tissue cells and confirms that those cells which are farthest away from the capillaries get the same amount of nutrients and can dispose of their waste products as easily as those cells which are close to the capillaries, arterioles and venules. Histological section shows that the

individual cells are organized in a matrix which forms canals to supply the cells farthest away with nutritious body fluid. “The primary respiratory mechanism presses fluids into that basic structure, thus causing fluidal waves in the body. It is this hydrodynamic fluctuation that nourishes every cell. The cells are dependent on these tides in order to prevent the formation of lactic acids, carbon dioxide and other waste products around the cell and inside of it. …If this matrix is disturbed, the canals will not function to supply the innermost cells. That area becomes a dead spot, a place where the hydrodynamic fluctuation does not work anymore. You have an area in which there is no motion. We speak of a somatic dysfunction at the cellular level.”

Crow also describes the way manipulations and fascial techniques work. These are meant to move extracellular interstitial fluid through and within the closed fluid system of the functional fascia by optimising the primary respiratory mechanism: “Manipulation of the body can influence us at the cellular level. The effects of the hydrodynamic fluctuations of the body fluids restore motion and bring back life to dead spots or somatic dysfunctions by changing tissue structures. Research has shown that changes in the tissue structures of the body change the structure of the endoskeleton. Such endoskeletal changes in turn change the gene expression and the metabolism of the individual cell. Therefore, we can cause significant changes at all levels by manipulating the body tissue.” (8)

If we can assume that the practice of certain yoga positions can improve the quality of the fasciae and the connective tissues, reduce or eliminate unphysiological tensions and optimize the primary respiratory mechanism (as for example padmasana), then yoga exercises could improve the supply of the cells and thus the trophism of the tissue. Asanas could contribute to the elimination of somatic dysfunctions or even prevent the formation of an osteopathic dysfunction.

1 LIEM Torsten, Kraniosakrale Osteopathie, p.5

2 STILL Andrew Taylor, The Philosophy and Mechanical Principles…, p.61

3 PAOLETTI Serge, Faszien, p.V

4 PAOLETTI Serge, Grundsubstanz und Faszien, p.3

5 PAOLETTI Serge, Grundsubstanz und Faszien, p.4

6 COULTER H. David, Anatomy of Hatha Yoga, p.59,60

7 THOMAS Andrew, Yoga and Fascia , J.3: 41

8 CROW William Thomas, Wirkungen der Manipulation, p.3,5

7 Effects of Yoga That Could Support Osteopathic Treatment

According to “A Review of the Literature” by Arpita, a former faculty member in Eastern Studies at the Himalayan Institute, yoga positions have the aim to bring all systems of the body to the highest possible effectivity by their mild ”massage“ effect. This happens with little energy consumption and without necessarily increasing the muscular mass. Arpita quotes Ryan, who states that “yoga gives its participants the characteristics of youth, flexibility, vitality, relaxation, alertness, clarity of mind, endurance, maintenance of proper circulation, and firmness and strength of muscles.” (1)

Some of these parameters are also of great importance to osteopathy, because osteopathic treatment often also wants to improve, for example, flexibility, relaxation, power or circulation. Vitality is one of those parameters that characterize the quality of the craniosacral rhythm.

In her article Arpita also writes, ”Health, personal integration, and spiritual growth are the traditional goals of practicing the hatha yoga postures. They were designed to systematically stretch and massage all parts of the body, thereby yielding improved functioning of the muscular, respiratory, digestive, endocrine, central nervous, reproductive, and urinary systems and increasing autonomic balance and control.” (2)

The purpose of the review is to critically examine the physical aspect of yoga, that is, those investigations dealing with hatha yoga asanas. Not all of the studies provide sound statistical backing. Those which do not are reported merely to point out possible tendencies and directions for further research. Arpita, after having examined several studies, describes effects at a behavioral, physical, physiological, mental and personality level. (Fig. 20) Hatha yoga could be a helpful adjunct to medical and physiological treatment when practiced regularly by clients on their own to improve their feelings of physical health, reduce their anxiety, and enhance their self-concepts and emotional tone. (3)

Behavioral	Physical	Physiological	Mental	Personality
Weight ↓	Hand steadiness ↑	EEG alpha ↑	Concentration ↑	Anxiety ↓
Nervousness ↓	Reactivity to stressors ↓	Sympathetic tine ↓	Memory ↑	Depression ↓
Health complaints ↓	Flexibility ↑	Respiratory efficiency & competence ↑	Mental fatigability ↓	Neuroticism ↓
Clinical assessment of psychiatric patients ↑	Relaxation ↑	Oxygen consumption (energy expenditure) ↓	Intelligence quotient ↑	Conflict resolution ↑
Psychological complaints ↓	Muscular electrical activity (EMG) ↓	Respiration rate ↓	Performance quotient ↑	Openness to experience ↑
	Muscle tone ↓	Chest expansion ↑	Shift in sequence of ideas ↑	Defensiveness ↓
	Fitness ↑	Lung capacity ↑		Guilt ↓
		Breath holding time ↑		Tension and instability ↓
		Tidal volume ↑		Projective measures: number of responses ↑
		Respiratory amplitude ↑		Delay in responses ↓
		Cardio-vascular efficiency & competence ↑		Hostility ↓
		Systolic and diastolic blood pressure ↓		Submissiveness ↓
		Heart rate ↓		Self-criticism ↓
		Peripheral blood flow ↑		Self-concept ↑
		Oxygen transport system ↑		Assertiveness and emotional stability in females ↑
		Adrenocortical efficiency & competence ↑		Body image ↑
		Endocrine and metabolic competence ↑		Interpersonal relationships ↑
		Function and stability ↑		Self-esteem ↑
		Base metabolism rate ↑		Ethical self ↑
		Adrenocortical activity ↑		Self-actualizations ↑
		Biochemical blood analysis ↑		Spiritual orientation ↑
		Humoral system ↑		
		Acetecholine & cholinesterase ↓		

Key:
↓ = decreased or lowered
↑ = increased or improved

Fig. 20: Summary of the outcome of hatha yoga practice

7.1 Stretching and Strengthening

The stretching (mobilizing) and strengthening effects of hatha yoga techniques have already been described in some of the chapters above.

7.2 Detoxification

Detoxification is another effect that is important to both yoga and osteopathy.

In a speech on the healing power of yoga, Dr. Daya Mullins describes the accumulation of toxicants as one of the main factors that are responsible for the formation of every disease. “Proper function of digestion is essential to gain or maintain health.” Breathing also makes an important contribution to detoxification: “By inhaling we burn the impurities, by exhaling we remove the water-soluble waste products from our system.” (4)

Many yoga positions such as inverse postures support good digestion, the purification practices of yoga and pranayama serve, among other things, to eliminate metabolic waste products in the form of mucus, acids or gases.

Accumulation of toxicants as a cause of diseases is also acknowledged in osteopathy.

In his “Philosophy of Osteopathy“ Still writes, ”I have thought for many years that the lymphatics and cellular system of the fascia, of the brain, the lungs, and the heart throughout the whole system of blood supply, do get filled up with impure and unhealthy fluids, long before any disease makes its appearance, and that the procedure of changes known as fermentation, with its electromagnetic disturbances, were the cause of at least ninety per cent of the diseases that we labor to relieve by some chemical preparation called drugs.”
As a result of this realization, Still directs his attention to the liberation of the system from those toxicants: “I have tried to see if I could not get more directly to the lymphatic system of nerves, and cause the millions of vessels to begin to unload their contents and continue that action until all impurities were discharged by way of the bowels, lungs, kidneys and porous system.” (5) “Osteopathic adjustment means to so adjust the body that normal action will be sufficient to supply nerve force equal to the demand for construction, and to keep the body or organ in a healthy condition by casting out all impure substances before they become oppressive either from quantity or destructive and deadly poisonous chemical changes which result from stagnant fluids in the body.” (6)

In osteopathy lymphatic techniques, fluid-drive techniques, visceral techniques at liver, kidney, lung and bowel promote the detoxification processes of the body, stimulate the discharge of metabolic waste products and thus eliminate the cause of many diseases.

Virendra Kumar, a senior consultant Yoga Physician at the Yoga Nidhi in India, investigated the efficacy of hatha yoga techniques, for example with irritable bowel syndrome. The bowel can develop its detoxicant effect, if it is kept in a good state. “One hundred cases of Irritable Bowel Syndrome formed the subject matter for the present study. Subjects were divided into three groups in order to compare the efficacy of different modalities of treatment: (A) Drug (N=36), (B) Drug + yoga (N=28), and (C) yoga (N=36). During eighteen weeks of follow-up studies, changes in

symptoms and hemoglobin levels were measured for each patient. Statistical analysis of the data revealed that the Hathayogic practices alone or in combination with drug therapy provided significant relief in Irritable Bowel Syndrome." (7) The following histogram illustrates the changes of diarrhea symptoms in the three groups. (Fig. 21)

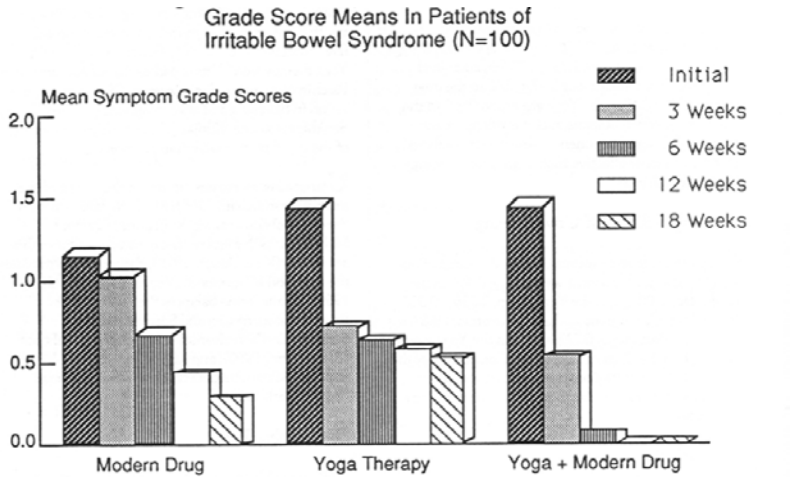

Fig. 21: Histogram showing diarrhea symptoms

Apart from having numerous other effects, pranayama techniques make a major contribution to the detoxification of the body. In an article on the effect of pranayama, Marc Halpern, the founder-director of the California College of Ayurveda in Grass Valley, California, mentions, among other things, the positive influence on lung, liver, kidney and bowel. These organs are involved in detoxification processes. Pranayama also has been reported to have the following physiological effects: improved circulation, purification of the lungs, physiological support for the liver, spleen, and kidney, stimulation of peristalsis improving fecal excretion, sharpening of the intellect, and improved memory. (8)

7.3 Relaxation

Relaxation is another major effect of yoga. Relaxation is necessary to change the stress response. In her article „Stress Management through Yoga" Ellen Serber, a certified Iyengar yoga teacher, quotes Robert Sapolsky, who describes the hormonal regulation of stress: The hormonal path of stress response moves like this, "When something stressful happens or you think a stressful thought, the hypothalamus

secrets an array of releasing hormones into the hypothalamic-pituitary circulatory system. …The principal such releaser is called CRF (corticotropin releasing factor), while a variety of minor players synergize with CRF. Within fifteen seconds or so, CRF triggers the pituitary to release hormone ACTH (corticotropin). After ACTH is released into the bloodstream, it reaches the adrenal gland, and within a few minutes triggers glucocorticoid release. Together, glucocorticoids and the secretions of the sympathetic nervous system (epinephrine and norepinephrine) account for a large percentage of what happens in our body during stress."

Serber emphasizes that especially a continuous stress burden can lead to illness. The cardiovascular system, for example, responds by an increase in cardiovascular output in order to deliver oxygen and energy to exercising muscles. A vascular response of constriction of the major arteries makes the blood pressure rise. A continued stress response, however, keeps the cardiovascular system in this heightened state, wearing out the heart and arteries.
She describes the contribution that yoga can make to reduce stress: "It is possible that some of the most beneficial aspects of yoga practice are the sense that things are improving and that one has some control over what is happening, two factors that help mediate stress."

She also quotes Udupa, who regards a combination of asanas, breathing exercises and meditation as an important counterbalance to stress in today's society. Udupa, in referring to the yamas and niyamas of classical yoga, emphasizes that changing one's life-style can increase the effect of these exercises further. (See chapter 3.2) Yama includes ethical precepts such as non-violence, truth, non-stealing, continence and non-covetousness. Some niyamas are guidelines that refer to personal discipline. These are purity, contentment, eagerness, self-study and surrender to God.

Serber also quotes Roger Cole, who in turn emphasizes the influence of asanas on the nervous system, "To promote deepest relaxation, one must minimize stimulation of the brain's reticular activating system (RAS), posterior hypothalamus and sympathetic nerve centers in the brainstem, and maximize stimulation of the brain centers that actively inhibit the RAS and promote parasympathetic activity." His relaxation sequence that aims at changing the physiological response of the stress response emphasizes the head-down positions and chest expansion. (9) So reducing stimulation of the nervous system is a prerequisite for deep relaxation.

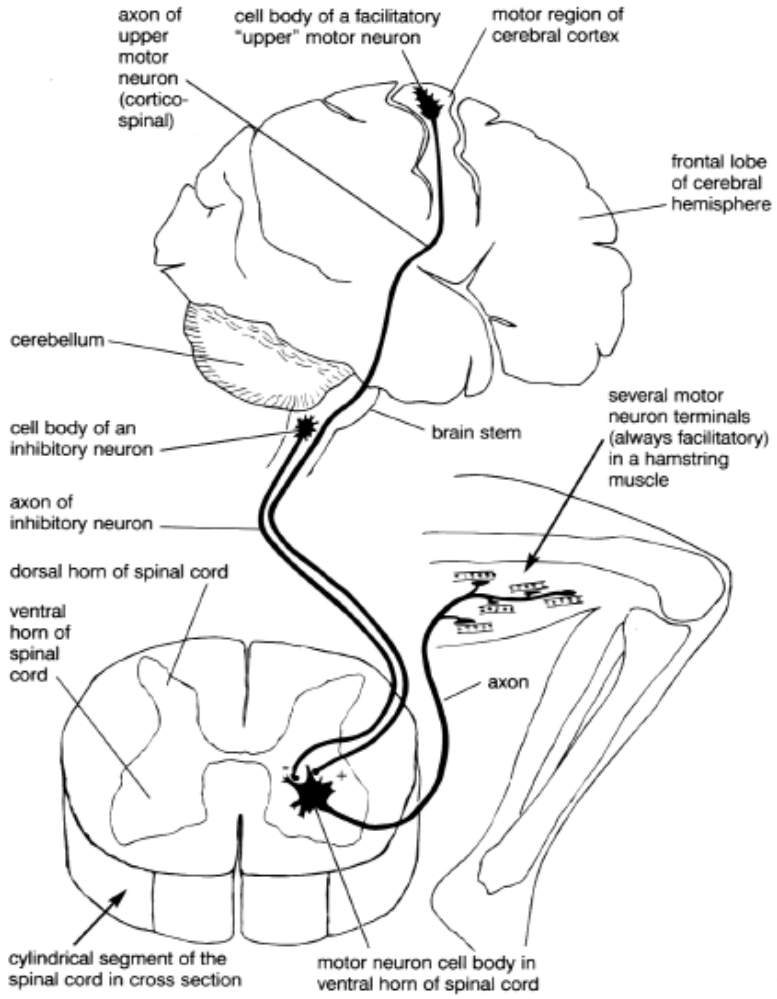

Fig. 22: Pathways for relaxation of skeletal muscles

Coulter describes three possibilities of obtaining muscle relaxation through the CNS: "To relax we can conceive of decreasing the firing rate of motor neurons in three ways: by decreasing the rate of firing of the facilitatory neurons whose axons impinge on the motor neurons, by increasing the rate of firing of the inhibitory neurons, or by both in combination. (Fig. 22)

Speaking simplicistically, that's what is happening every time you do not respond to some desire or sensory signal."

He warns against excessive relaxation practice carried out in isolation without the counterbalancing effect of hatha exercises, because that way conscious control of the motor neurons decreases: "If the circuits from the cerebral cortex are intact, the potential for willed relaxation as well as willed movement is available, but if those higher circuits are not used regularly, they gradually become dysfunctional and the unconscious input from other regions of the brain gets bossier. And because these non-cortical circuits are not under conscious control, their continuing activity prevents conscious relaxation. More encouraging, as long as the circuits from the cerebral cortex are intact, hatha yoga can help train them." (10)

Stress plays an essential role in the formation and course of diseases such as asthma, multiple sclerosis, migraine, rheumatoid arthritis, diabetes or heart problems.

Clinical characteristics of this kind also indicate an osteopathic treatment. In addition to a specific, holistic osteopathic treatment long-term reduction of stress obtained by regular yoga exercise could improve the success of the therapy further.

7.4 Strengthening of the Immune System

The strengthening of the immune system is another effect of yoga. In her article „Yoga and Aids“ Paula Kout, a writer and yoga teacher, writes, ”Handstand, forearm balance, headstand and shoulderstand work on the immune system. …They actually renovate the hormonal system of the body, the ductless glands of the body, to start to balance their activities. Production of hormones, the endocrine system as a whole, is all renovated.”
The thymus gland is one of the endocrine glands. Its importance is widely underestimated nowadays. It produces thymosins. “Thymosins not only regulate white blood cells, specifically T-cells, but control other hormones and are important in the growth and aging process. The thymus gland, as one immunologist put it, directs the immunologic orchestra.”
Positions that open the thorax stimulate the thymus gland. Conversely, the chest automatically tightens up if the immune system becomes weaker and the organism more and more ill. (11)

Osteopathic techniques can also influence the immune system. Techniques at the liver or at the thymus gland, for example, can improve the defence mechanism.
Craniosacral osteopathy influences the immune system through the immune axis, which is made up of the third ventricle, the motor of the longitudinal fluctuation and a region of numerous immunological, neurological and endocrine structures, the chyle cisterna, the reservoir of the lymph, and the navel, an embryonic fulcrum.

Mobilization, detoxification, relaxation and the strengthening of the immune system are aims of both osteopathy and yoga. Those factors keep the organism as a whole in better function and reduce the probability of disturbances or dysfunctions.

1 ARPITA, Physiological and Psychological Effects, J.1: 2

2 ARPITA, Physiological and Psychological Effects, J.1: 2

3 ARPITA, Physiological and Psychological Effects, J.1: 24

4 MULLINS Daya Dr., Die Heilkraft des Yoga, p.2

5 STILL Andrew Taylor, Philosophy of Osteopathy, p.260-261
6 STILL Andrew Taylor, Osteopathy- Research and Practice, p.19
7 KUMAR Virendra, A Study on the Therapeutic Potential, J.3: 37
8 HALPERN Marc, Pranayama,Yoga, and Ayurveda, J.10: 41
9 SERBER Ellen, Stress Management through Yoga, J.10: 15
10 COULTER H. David, Anatomy of Hatha Yoga, p.544,546
11 KOUT Paula, Yoga and Aids, J.3:19

8 The Importance of Breathing in Osteopathy and Yoga

Breathing plays a major role in osteopathy. It is comparable to a pump, which spreads out energy and life force with the aid of circulation in the body.

According to Rollin Becker, costal breathing is one of the four major patterns of motion and movement, along with the neuromusculoskeletal motion, the craniosacral fluctuation and the large tide-like motion. He calls thoracic breathing “the secondary costal respiratory mechanisms which move all tissues of the body during the respiratory cycles of breathing.“ (1)

Therefore, breathing should be monitored and taken into account in every patient during an osteopathic treatment. Good breathing improves circulation as well as elimination, which prevents toxicants from getting into the blood and accumulating further in musculature, ligaments and articulations, which would in turn lead to an impairment of breathing.

In yoga breathing is also considered very important. One of pranayama’s aims is to maintain the respiratory system in its best possible state.
On that subject Iyengar writes, ”This automatically improves circulation. Bad circulation would impair the digestive and excretory organs. Toxicants would accumulate, diseases would spread out in the body, and soon bad health would be normal. The respiratory system is the door to purification of body, soul and mind. The key is pranayama.” (2)

In osteopathy breathing mechanics are described as a movement that includes nearly the whole body. Proper respiratory movement requires proper tension of the scalene muscles and the transversospinal muscles, because they constitute the necessary fixed point for the action of the external intercostal muscles on the one hand and the pumping movement of the ribs on the other hand. During inhalation the longus colli muscle leads to a decrease in the lordosis of the cervical spine, the multifidus muscle to the straightening of the thoracic spine and the intercostal muscles to the elevation of the ribs and to the lowering of the diaphragm. The respiratory wave spreads downward to the 12^{th} thoracic segment, then forward towards the psoas muscle to the coxofemoral articulations and from there via the adductors in caudal direction. This results in straightening of the vertebral column, a relief of the 9^{th} thoracic segment, the central pivot point of the vertebral column at the

maximum curvature of the thoracic spine, which often tries to compensate for disturbances, and a pre-tension of the psoas muscle, which requires good tension in the levator ani muscle and the piriformis muscle. (3)

Greenman uses the effect of the respiration on the vertebral column for mobilization. (See chapter 5.1) He distinguishes extrinsic and intrinsic activating forces and counts breathing among the intrinsic group, those forces that occur from within the patient's body and are used for their therapeutic effectiveness. (4)

The yogis are also aware of the effect of breathing on the vertebral column.
T.K.V. Desikachar, the son and student of Sri T. Krishnamacharya, one of the great yoga teachers of the last century, emphasizes the straightening of the vertebral column as follows: "The technique that I have presented to you (the thorax moving first and then the diaphragm or the abdomen), has the great advantage that it straightens the vertebral column and the back. At that moment, when we start inhaling, our ribs elevate, and the vertebral column, which they are attached to, straightens. …The elevation of the thorax provides space for the diaphragm, where it can move freely." (5)

According to Iyengar, full breathing or pranayama uses the total capacity of the lungs. He emphasizes the pre-tension of the abdominal muscles during inhalation, which presses the organs upwards and lowers and supports the domed diaphragm, thus facilitating the maximum effect of the diaphragm. Its vertical pull leads to the elevation and expansion of the lower thorax (Fig. 23) , thus causing the intercostal muscles to move, one after another, which results in the corresponding widest-ranging movements of the ribs: the caliper rib motion of the floating ribs, the bucket handle rib motion of the sternal ribs, and elevation and expansion of the whole thorax to full extent, beginning from the spine. Furthermore, the uppermost intercostal muscles and those

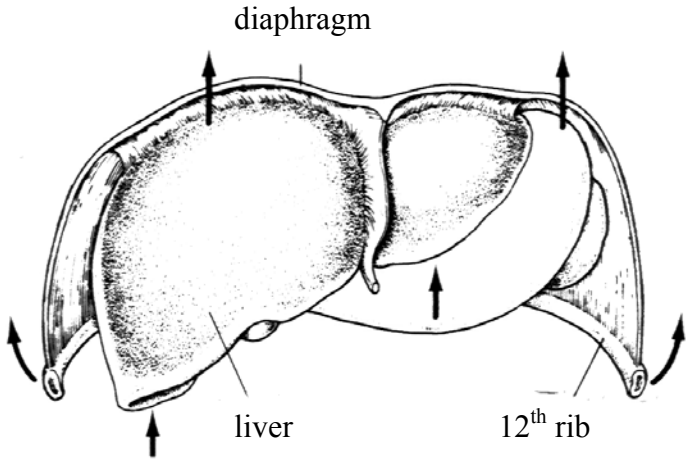

Fig. 23: Elevation of the floating ribs by the diaphragm during inhalation

connecting the upper ribs, the sternum and the clavicle with the neck and the skull, contract and thus facilitate the filling of the upper tips of the lung. The already widened thorax expands further anteriorly, cranially and laterally. These sequential movements of abdomen, thoracic wall and neck, where each step is based on another one, leads to maximum filling of the lungs and provides the space which the inflowing air needs to reach every corner of the lungs. (6)
Owing to the pre-tension of the abdominal muscles, the forward movement of the abdomen is stopped, and during inhalation the expansion of the thorax becomes particularly noticeable. Thus, the two breathing techniques by Desikachar and Iyengar seem less contradictory.

The importance and effect of breathing was already described in old yoga sources. In his yoga sutras Patanjali writes on the importance of the ability to control breathing. Iyengar commentates on Patanjali's text to make it understandable:
"When perfection of an asana is reached, pranayama follows, the retention of the inflowing and outflowing breath. …Pranayama consists of three movements: inhalation, exhalation and retention. All three are either long-lasting or subtle and depend on place, duration and counting. …The fourth kind of pranayama transcends the outer and inner pranayama. (Comment: One has reached this state, when the respiratory movements happen without conscious will or making efforts. The movements of the inner mind and of the consciousness come to a halt. …A kind of rest develops, in breathing as well as at the mental level. Out of this rest a new awakening arises, and the inner being of the sadhaka (practitioner) is filled with the light of intelligence.) …Pranayama removes the veil which covers the light of knowledge. (Comment: The pranayama exercise drives away the delusion consisting of ignorance, longing and blindness that obscures intelligence, and lets the inner light of wisdom shine.)" (7)

In chapter two of the Hatha Yoga Pradipika, Swatmarama emphasizes how important it is to restrain the breath: "When the breath is irregular, the mind is unsteady, but when the breath is still, so is the mind still and the Yogin obtains the power of stillness. Therefore the breath should be restrained. Life is said to exist only so long as there is breath in the body; its departure is death. So one should restrain the breath." (8)

So both of them speak of the same idea of stillness that is also common in osteopathy (Cf. chapter 5.3.5), a rest, out of which something new can arise.

Donna Fahri, a movement therapist and yoga teacher describes this all-embracing spiritual aspect of breathing, calling breathing a “whole-body experience“: “The cells provide the matrix for the entire body, so when we bring our awareness into them, we become conscious of the global nature of breathing. This consciousness of our cellular level of organisation is characterized by stillness, rest, relaxation, and most of all by a deep and compassionate self-acceptance. When we bring awareness to our cells we are physically organizing ourselves to enter the act of meditation. …In any asana, alignment is the attempt to find a harmonious relationship between the core and the periphery, bringing all parts to play as a whole. If I can find clear pathways between my core and my limbs, my breath will move from my center outward unimpeded. …In yogic asanas, we attempt to feel the dynamic inner movements within the relatively static form of the postures. …The whole body oscillates and moves slightly during free breathing. This movement does not occur as result of suppressing movement somewhere else but arises effortlessly. The oscillation has a way of traveling sequentially through the body from the center to the periphery and back to the center. …Just as waves arise in endless variation in the sea, the breath arises with endless variation and adaptability. The breath changes as your thoughts, feelings, and movements change.” (9)

This text contains on the one hand the holistic aspect of osteopathy, on the other hand an important osteopathic principle. The osteopath tries to direct his awareness exactly to the individual tissues and further on to the cells in order to integrate dysfunctioning areas into the general system, so that the power of health that exists in everyone can bring about healing. This process is often preceded by a phase of all-embracing stillness that is characterized by deepening and slowing down of breathing, followed by a slow fluidal wave that engulfs the whole body. The change occurs all by itself without any effort and use of force. The osteopath’s job is to support the body in reaching the stillpoint, to trust in the self-healing power of the patient and to allow the change to happen.

In yoga one could reach this stillpoint and activate the ”inner therapist“ by practising asanas and pranayama. In his book “The Stillness of Life“ Rollin Becker writes, ”The patient is the physician and the teacher. In fact the patient is not even the patient.” (10)

David Frawley, the director of the “American Institute of Vedic Studies“, gives some physical, mental and energetic effects of breathing and pranayama: “Pranayama is

an integral part of the Ayurveda. It is most effective with diseases of the respiratory organs, circulation and the nerves, which are dependent on the unimpeded flow of prana. Moreover, it is an excellent means for treating weakness, lack of energy, chronic exhaustion, weak immune system and for recovery. It probably is the most important individual measure to improve health."
He once more discusses the massage effect of breathing, which strengthens the organs, improves the blood flow and makes the elimination of waste products easier. On the mental effect of pranayama Frawley writes: "Pranayama is an important help with mental disturbances. It alleviates depressions, grief and attachment and reduces stress and tensions. No stimulant can improve the mood so lastingly." (11)

The effect of breathing on the mind is also described in the article "The Breathing Self: Experience of Breath as an Art to Healing Yourself." by Prof. Ilse Middendorf, the founder of the Institute for the Perceptible Breath in Berlin: "Breathing not only reaches our inner world and moves us, it connects us to the world outside. It brings us closer to each other and breaks down our sense of isolation. …The unconscious mode of breathing is part of the autonomic nervous system, and accompanies every act of the body - be it physical, spiritual, or emotional. Whereas anxiety restricts our breathing, joy permits it to flow freely. Every activity changes our breathing pattern. If we have worries, fears, struggles - either of an internal or external nature - our muscles become tight and inflexible, and disturb the normal function of our organs, eventually causing illness. We become cramped and tense. These states restrict our natural breathing and are harmful to us." (12)

The osteopath feels the tension in the tissue, caused by mental strain. The emotional energy stored in these tissues, often in the areas of the diaphragms, can be released by treating the tense tissues, which the patient feels as relief and liberation.

In yoga the same is to be obtained by breathing exercise. Middendorf describes, "Natural breathing frees us from superfluous concerns, tensions, and prejudices. We can gain an immediate, direct experience of our true nature and the profound joy which comes with it." (13)

Martin Jerry, a psychologist, medical doctor and yoga practitioner, explains along which path breathing influences the mind: "At the simplest level the breath can be used to consciously balance neural inputs into the autonomic nervous system and the psychoneuroimmunology (PNI) system. This is accomplished using

diaphragmatic breathing or two-to-one breathing (prolonged exhalation). Through innervation of the respiratory muscles, especially the diaphragm, inhalation produces sympathetic input and exhalation gives parasympathetic stimulation to the system. This is most easily observed with the sinus arrhythmia associated with respiration on an electrocardiogram. The foundation exercise for this kind of regulation is called nadi-shodhana or alternative nostril breathing. It has utility for calming emotional disturbances, in drug dependency, in anger management, in manic depression, in resolving migraines, and in relieving angina from coronary spasm." (14)

David Coulter briefly and accurately describes the importance of breathing in yoga: "Yogis say flatly, for example, that the breath is the link between the mind and the body, and that if we can control our respiration we can control every aspect of our being. This is the endpoint, that begins with simple hatha yoga breathing exercises." (15)

In osteopathy breathing is used as a specific aid to correct osteopathic lesions. Greenman, for example, describes a technique, where the listening hand gets in contact with the dysfunctional segment and the motor hand searches with small movements for a balance point of maximum ease within each range. Once each of the ranges within the dysfunctional segment has been "stacked" at the point of maximum ease, inhalation and exhalation effort is introduced. The phase of respiration found to be the most free is then held as long as comfortably possible. This is usually for 5-30 seconds. At the end of the comfortable retention of the breath, the patient is instructed to breath normally and naturally. A new balance point is sought for each of the motion directions. The respiratory effort is repeated. The entire process is repeated until release of restriction is felt and increased mobility is obtained. The usual operator sense is that the neutral point is returning more and more toward normal and that range is increasing. (16)

Another example is the decompression of L5/S1, which Torsten Liem describes in his book: The patient inhales deeply. In the course of it the therapist follows the upward movement of the sacrum with his hand. Then the patient exhales deeply and at the end of the exhalation phase holds his breath as long as possible. In the course of it the therapist follows the downward movement of the sacrum with his hand. When inhalation spontaneously sets in, the therapist prevents the upward movement of the sacrum with his hand. This cycle can be repeated one to three times, depending on the severity of the compression. (17)

In yoga breathing can also be specifically used depending on the kind of problem. T.K.V. Desikachar, for example, uses breath retention to intensify the effect of an asana towards a certain direction: “Breath retention after exhalation will intensify the effect of the asana on the abdominal region. Simply spoken, this means that we will intensify the effect on the thoracic area, if we hold our breath after inhalation in certain asanas.” (18)

In osteopathy as well as in yoga the healing effect of breathing is acknowledged and is used for healing. It is useful to give the patient a home programme of breathing exercises after an osteopathic treatment has been carried out, in order to maintain the mobility of a previously restricted kidney, for example, to improve elimination or to maintain a proper lung function. Moreover, optimization of the breathing technique can improve posture and reduce unnatural tensions or stress. In this area yoga could support an osteopathic treatment by a specific sequence of asanas and pranayama exercises.

1 BECKER Rollin E., Life in Motion, p.54

2 IYENGAR B.K.S., Licht auf Pranayama, p.45

3 Manuscript of a lecture by B. Ligner

4 GREENMAN Philip E., Principles of Manual Medicine, p.50

5 DESIKACHAR T.K.V., Yoga – Tradition und Erfahrung, p.41

6 IYENGAR B.K.S., Licht auf Pranayama, p.49,50

7 IYENGAR B.K.S., Der Urquell des Yoga, p.198,203-205

8 SVATMARAMA, The Hathayogapradipika, p.22

9 FARHI Donna, The Breath That Moves Us, J.8: 9,15-16

10 BECKER Rollin E., The Stillness of Life, p.15

11 FRAWLEY David, Yoga and Ayurveda, p.224,225

12 MIDDENDORF Ilse, The Breathing Self, J.5 :13-14

13 MIDDENDORF Ilse, The Breathing Self, J.5 :14

14 JERRY Martin, Body, Breath, Mind, and Spirit, J.10: 78

15 COULTER H. David, Anatomy of Hatha Yoga, p.67

16 GREENMAN Philip E., Principles of Manual Medicine, p.107

17 LIEM Torsten, Kraniosakrale Osteopathie, p.416

18 DESIKACHAR T.K.V., Yoga – Tradition und Erfahrung, p.65

9 The Importance of the Diaphragms in Osteopathy and Yoga

The diaphragms are important both in osteopathy and in yoga.
In osteopathy they are considered horizontal fascial planes, running crosswise and supporting the longitudinal system. They can, however, impede the fine mobility of the longitudinal fasciae in case of disturbances such as hypertension or adhesions.

In yoga certain asanas influence the diaphragms. (See “headstand“). In pranayama one can control blood circulation, the nervous system, the endocrine glands and the flow of energy by using special techniques at the diaphragms.

The great importance of the diaphragms has been emphasized since the beginnings of osteopathy.
In his books Still very impressively writes on the diaphragm, “This diaphragm says, ”By me you live and by me you die. I hold in my hands the powers of life and death. Aquaint now thyself with me and be at ease”” (1) Still also writes, ”The diaphragm surely gives much food for one who would search for the great “whys” of disease. …It must be normal in place, as it is so situated that it will admit of no abnormality. It must be stretched, just as Nature intended it should be, like a drumhead. …It must, by all reason, be kept normal in tightness at all places, without a fold or wrinkle that would press the aorta, nerves, oesophagus, or anything that contributes to the supply or circulation of any vital substance.” (2)

Still makes the importance of the diaphragm clear, emphasizing, that the whole blood of the lower part of the body and the nerval supply as well must pass the diaphragm. He describes the results of a malposition of the diaphragm: “The diaphragm is often pulled down on both the vena cava and thoracic duct, obstructing blood and chyle from returning to the heart, so that it reduces the amount of the chyle below the requirement of healthy blood, or even suppresses the nerve-action of lymphatics to a degree causing dropsy of the abdomen, or stoppage of venous blood by pressure on the vena cava so long that venous blood is in stages of ferment when it enters the heart for renovation, and when purified and returned, the supply is too small to sustain life to a normal standard.” (3)

Sutherland, too, emphasizes the importance of the diaphragm, considering it part of a big internal combustion engine: “The normal activity of the diaphragm is important in control of acute diseases. The diaphragm is the “piston“ to the big “combustion

cylinder“ of the body. Its crura are the “legs” that lead down from the piston to the “crankshaft” in the lumbar vertebrae. Its ligamenta arcuata are the “piston rings”. The lungs might represent the big “combustion chamber” to the cylinder with the nasal region the “carburetor”, while the “ignition “ and “self-starter” might be found somewhere within the “cranial bowl”. When there is a tight bearing down in the lumbar crankshaft, or the ligamenta arcuata piston rings are sprung in tension, then the big compression cylinder loses its motive activity.” (4)

Sutherland also writes that special manipulation of the central tendon of the diaphragm can cause a reaction at the sphenobasilar synchondrosis and that the primary respiratory mechanism is influenced via fascial connections. (5)

Among the most important transversal planes, apart from the diaphragm, are the pelvic diaphragms, the cervicothoracic diaphragm, the craniocervical diaphragm and the cerebellar tentorium. An osteopathic model divides the body into three functional triangles separated by the diaphragms. All structures within a triangle are closely interconnected functionally, physiologically and pathologically. The state of the diaphragms is of great importance to the proper functioning of the individual triangles. (Fig. 24)

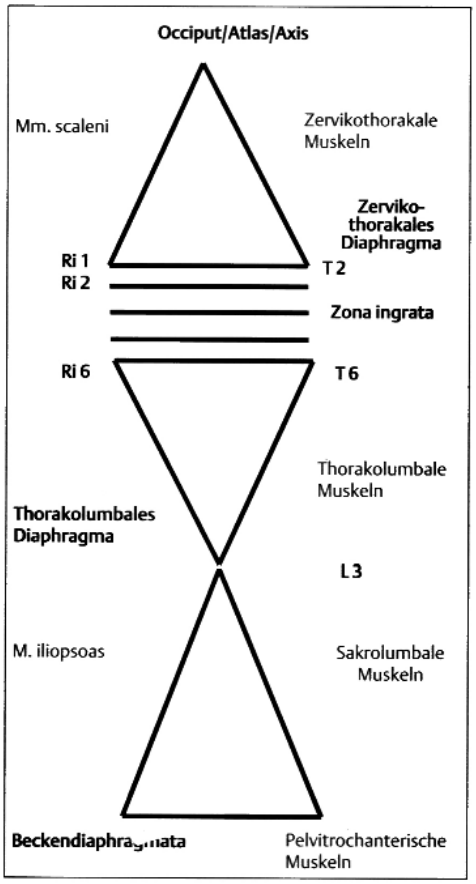

Fig. 24: Functional triangles

Torsten Liem describes, in what ways the diaphragms can influence the motion of the craniosacral system: “The coccygeus muscle, which is part of the pelvic diaphragm, is attached to the sacrum and the coccyx and can pull them forward in case of contraction or strong tension, thus causing fixation in flexion or restriction in extension of the craniosacral system. (Fig. 25). ... The pelvic diaphragms influence the mobility of the sacrum and the coccyx, the longitudinal fasciae and the fluidal flow in that region. Therefore, relaxation of this diaphragm is absolutely necessary for physiological craniosacral motion.” (6)

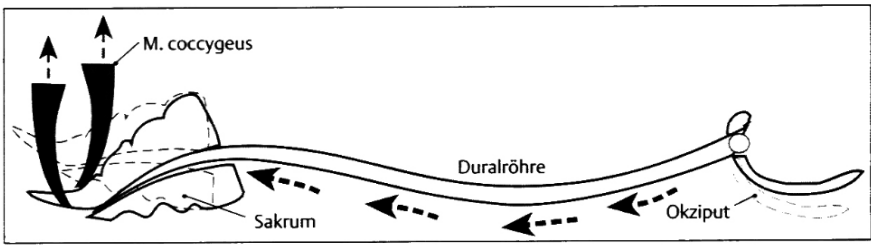

Fig. 25: Hypertension of the coccygeus muscle causes flexion of the sacrum and the occiput

Liem also summarizes, in what ways the diaphragm can influence breathing, statics, circulation, digestion, phonation and mobility of the craniosacral system, owing to its numerous fascial and ligamental connections.

The cervicothoracic diaphragm or thoracic inlet with its transversely running bony, muscular and connective tissue structures can also impede the longitudinal fascial mobility and the fine motility of the cranial bones. Moreover, the venous drainage of the skull via the internal jugular vein and the arterial supply via the internal carotid artery can be impeded. (7)

The craniocervical diaphragm, the atlanto-occipital joint, together with the atlanto-axial joint and with their numerous muscular attachments, connects the cervical spine with the cranial floor. All muscles and fasciae which insert at the occiput can more or less impede or block the craniosacral system in case of hypertension. In that region, at the level of the fourth ventricle, lie most of the nuclei of cranial nerves and the medulla oblongata, which contains the respiratory centre, the cardiovascular centre and other vital centres. Moreover, the pyramidal tract fibres decussate approximately at that level. So this place is particularly important to the motor co-ordination of movements. (8)

The pelvic girdle, the diaphragm, the shoulder girdle, the hyoid bone and the cervico-occipital junction are among the most important buffer zones.
Serge Paoletti describes that the fascial chains transmit their mobility to the whole body, but are at the same time a place of tensions that can impede their functioning. Buffer zones exist to prevent such disturbances from automatically spreading along the whole fascial chain. (9)

Greenman emphasizes the importance of the close co-ordination of tentorium cerebelli, diaphragm and pelvic diaphragm. All three of them descend during inhalation and reciprocally influence one another: One can then view the body from

the perspective of the three diaphragms: the tentorium cerebelli, the thoracoabdominal diaphragm, and the pelvic diaphragm. In health, these diaphragms should function in a synchronous fashion. If dysfunction interferes with the capacity of any of the three, it is reasonable to assume that the other two will be altered as well. (10)

Because of the numerous influences mentioned above which the diaphragms can exert on the whole system, special attention is paid on these transversely running structures in osteopathy. The diaphragms often have a key position in osteopathic treatment.

In yoga the individual diaphragms can be assigned to the bandhas (See chapter 5). Bandhas are muscle contractions in the regions of the diaphragms which influence blood circulation, the nervous system and the endocrine glands. (11) In yoga bandhas are used to prevent the dissipation of energy, which is made to flow by the practice of pranayama, and to direct it to the right places without any harm. Of the bandhas mentioned in the hatha yoga texts jalandhara, uddiyana and mula bandha are essential to pranayama. They contribute to the spreading of energy and prevent wasting it by supplying the body with a maximum amount of air. (12)

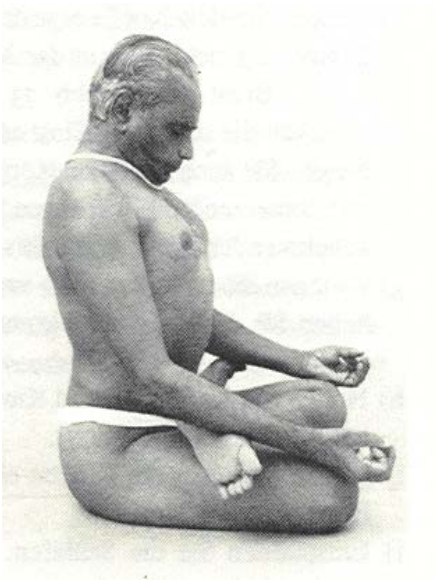

Fig. 26:
Jalandhara bandha

In the technique of the jalandhara bandha (Fig. 26), the neck and throat are contracted and the chin rests on the chest in the notch between the clavicles and the tip of the sternum. Jalandhara bandha regulates and controls the blood flow and the flow of prana towards the heart, the cervical glands (thyroid gland and parathyroid gland), the head and the brain. (13) Jalandhara bandha can be assigned to the craniocervical and cervicothoracic diaphragm, because the muscles of the neck are contracted, the throat is compressed and the nuchal region is stretched. It is used with longer-lasting breath retentions and its purpose is to protect the heart and the circulation system from harmful effects of longer-lasting breath retention, an increase in the arterial tension and an increase in the heart rate by exerting soft pressure on the carotid sinus. (14)

Iyengar describes the yogic effect of this bandha as follows: “The solar plexus lies in the middle of the trunk. According to yoga it is the place of digestive fire, which burns the food and produces heat. The lunar plexus is situated in the middle of the brain and produces coolness. When jalandhara bandha is practised, the cool energy of the lunar plexus cannot flow downwards owing to the obstruction of the nadis around the neck and it cannot be dissipated by the hot energy of the solar plexus. In that way we can store the elixir of life and prolong life itself. The bandha also clamps the ida channels and pingala channels (energy channels / nadis running on the left and on the right along the vertebral column) and enables the prana to flow through the sushumna.” (15)

In the old texts of the Hatha Yoga Pradipika a rejuvenating and death-destroying effect is attributed to this bandha. Moreover, it prevents or cures all diseases of the throat. (16)

The technique of the uddiyana bandha, where the diaphragm is lifted and the abdominal organs are sucked backwards towards the vertebral column, has already been described in chapter 5.2. It acts on the diaphragm and the abdominal organs and thus has a close relationship to the thoracoabdominal diaphragm. The importance of this bandha is also impressively described in the Hatha Yoga Pradipika, which indirectly also emphasizes the importance of the region of the diaphragm: “Uddiyana Bandha is so called by the Yogins, for when it is practised the Prana is arrested and flies through the Sushumna. Because through this, the great bird (Prana) flies up incessantly (through the Sushumna) it is the Uddiyana (“ut” and “di” means to “fly up”). …Of all the Bandhas, the Uddiyana is the most excellent. When this has been mastered, liberation follows naturally.” (17)

Iyengar also assigns a central position to the diaphragm, calling it a meeting point of the physiological and the spiritual body. (18)

In his article “Yoga and Cardiovascular Function” the osteopath Andrew P. Thomas allocates the function of a second heart to the diaphragm, “Because the Vena Cava pierces the diaphragm, the action of diaphragmatic contraction and lower rib extension laterally causes the Vena Cava to be increased in size momentarily, which in turn reduces pipe blood pressure and allows an acceleration of blood flow back to the heart. The fully and correctly operating diaphragm is thus a second heart.” (19)

The pelvic diaphragm is of significance in yoga in connection with mula bandha or the root lock (Fig. 27), which Coulter described in his anatomy book as mild contraction of the pelvic diaphragm and the muscles of the urogenital triangle, which seals urogenital energy within the body, controlling and restraining it during breathing exercises and meditation. “With practice you will be able to sense the contraction of successive layers of muscles from the outside in. Starting superficially and with minimal effort, you can feel activity in the ischiocavernosus, bulbospongiosus, and superficial transverse perineal muscles. And with a little more attention you can activate the deep transverse perineal muscles and the urethral sphincter. And with yet more effort you can activate the pelvic diaphragm.” (20) Improvement of co-ordination and body feeling in this region will automatically go along with improvement of the function of the pelvic diaphragm.

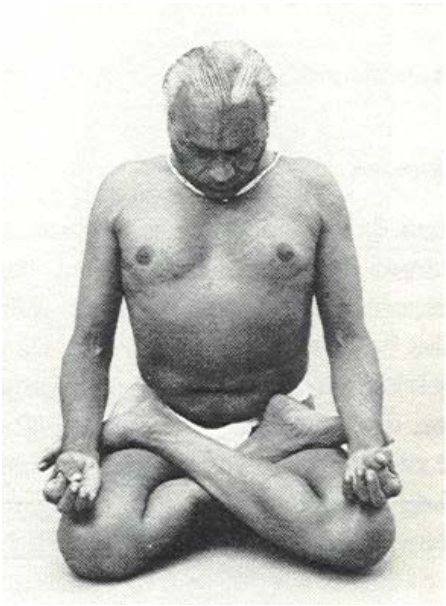

Fig. 27: Mula bandha

According to Iyengar in this bandha the muscles between the anus and the genital organs are contracted and vertically elevated towards the navel.
At the same time the abdomen below the navel is pressed upwards and backwards towards the spine. (21) This makes apana-vayu (the prana in the lower abdomen), which flows downwards, flow upwards to unite with prana-vayu, which is situated in the breast region. (22) Swatmarama promises with regular practice of mula bandha: “A union of Prana and Apana is achieved. Urine and excrement decrease and even the aged become young.” (23)

According to Andre van Lysbeth mula bandha affects the vegetative nervous system. Accordingly, the nerve endings of the coccygeal body are stimulated during mula bandha. The coccygeal body is a mass of cells which lie at the downmost tip of the coccyx. It has the size of a pea, an oval shape, is interspersed with blood vessels and has independent nerve fibres. This gland resembles the carotid body, which influences arterial tension, breathing and sleep. Owing to the tension in the pelvic diaphragm, the effect of the breath retentions in pranayama that stimulates the parasympathetic nerve spreads to the region of the lower abdomen. (24)

Fig. 28: The principles of the three bandhas

All of the three bandhas play a great role in yoga, when it comes to the idea of purification. On that subject T.K.V. Desikachar writes: “We know from the texts that, with the help of bandha, the fire in the body can be directed exactly towards the places where the ”waste“ has got a foothold and is obstructing the flow of energies. So the bandhas increase the effect of the fire, as illustrated in Fig. 28. Jalandhara bandha (=J) arranges the body so that the vertebral column is upright, so that prana can direct the fire (=F) towards the waste better. Uddiyana bandha (=U) then carries the waste to the fire, and mula bandha (=M) helps us to keep it there long enough for burning.” (25) The detoxicating effect of yoga has already been dealt with in an earlier chapter, too.

In the same way the diaphragms are of great importance with regard to the free flow of fluids in osteopathy, they play an important role in yoga when it comes to controlling and directing energy. Osteopathy also tries to pay attention to the different energy levels of the patient. The psycho-emotional level is closely connected with the diaphragms. With psycho-emotional dysfunctions dysbalance is often found in the area of the individual diaphragms. Techniques at the tentorium, cervicothoracic diaphragm, diaphragm or pelvic floor often prove to be an effective therapeutical approach. (26)

Moreover, the diaphragms are crucial in both systems, because they are directly connected with breathing, as has already been explained.

1 STILL Andrew Taylor, The Philosophy and Mechanical Principles… , p.145

2 STILL Andrew Taylor, The Philosophy and Mechanical Principles… , p.137,138

3 STILL Andrew Taylor, The Philosophy and Mechanical Principles… , p.51

4 SUTHERLAND William Garner, Contributions of Thought, p.35

5 SUTHERLAND William Garner, Contributions of Thought, p.252

6 LIEM Torsten, Kraniosakrale Osteopathie, p.358,359

7 LIEM Torsten, Kraniosakrale Osteopathie, p.362,363

8 LIEM Torsten, Kraniosakrale Osteopathie, p.382

9 PAOLETTI Serge, Faszien, p.185

10 GREENMAN Philip E., Principles of Manual Medicine, p.165

11 VAN LYSEBETH Andre, Die große Kraft des Atems, p.158

12 IYENGAR B.K.S., Licht auf Pranayama, p.124
13 IYENGAR B.K.S., Licht auf Yoga, p.400
14 VAN LYSEBETH Andre, Die große Kraft des Atems, p.163
15 IYENGAR B.K.S., Licht auf Pranayama, p.128
16 SVATMARAMA, The Hathayogapradipika, p.50
17 SVATMARAMA, The Hathayogapradipika, p.47,48
18 IYENGAR B.K.S., Der Baum des Yoga, p.151
19 THOMAS Andrew P., Yoga and Cardiovascular Function, J.4: 40
20 COULTER H. David, Anatomy of Hatha Yoga, p.184,187
21 IYENGAR B.K.S., Licht auf Pranayama, p.133
22 IYENGAR B.K.S., Licht auf Yoga, p.401
23 SVATMARAMA, The Hathayogapradipika, p.49
24 VAN LYSEBETH Andre, Die große Kraft des Atems, p.228-230
25 DESIKACHAR T.K.V., Yoga – Tradition und Erfahrung, p.167,168
26 Manuscript of a lecture by J. Arlot

10 Discussion

The aim of this study was to examine whether comparable aspects can be found in osteopathy and yoga, which could result in a combination of the two systems.
Furthermore, it was meant to find out, to what extent elements of yoga could specifically and usefully complement an osteopathic treatment.
As this first examination of the subject shows (As already been mentioned in the Introduction no work has been written on this subject yet.) there are numerous parallels in the theoretical and philosophical field as well as in the practical field. In the latter the effects of osteopathic techniques or treatments are compared to those of yoga exercises.

In the philosophical field, for example, parallels show with regard to the divine. Still calls osteopathy a science created by God. There are numerous passages in his books, where he refers to God. Selected quotations can be found in chapter 2. Furthermore, he writes that osteopathy is a law of God.

The divine origin of the yoga sutras of Patanjali, who is known as one of the founders of yogic philosophy, is also acknowledged. The conception of God is also included in the meaning of the word ”yoga“, as described in chapter 2, as yoking the body, the mind and the soul to God.

Further philosophical concepts that the two systems have in common are the ideas of unity and universality. In contrast to today’s western medicine, for example, where this aspect of wholeness has almost completely been lost, both osteopathy and yoga emphasize that they regard the body with all its most different tissues and systems as a whole, and acknowledge the unity of body, mind and soul. (See chapter 4.2)

Both philosophies take a further step in regarding the body and the human life as part of a universal whole. So man forms a unity with the cosmos and functions in interdependence with his entire environment. Therefore, to be with “that environment in rhythmic balanced interchange” can be one of the aims of osteopathy. The yogic aim is defined, inter alia, as “the alignment of personal energy with universal energy”. (Both quotations from chapter 5.3.4) Both aims actually mean the same.

The parallels in the practical field can be clearly deduced from this study. This already becomes clear in the basic principles according to Still. The law of the

arteries, which demands the unrestricted flow of the fluids as a prerequisite for health and also for the cure of diseases, finds a totally clear and striking parallel in yoga. Still and Iyengar even use the same metaphor: Both yoga exercises and osteopathic techniques are compared to the rain which prevents withering fields and thus the loss of the harvest of health or famine. (Chapter 4.3)

The aspect of self-healing powers, which shall be aroused or improved, and the aspect of the interdependence of structure and function also find their equivalent in yoga. (Chapter 4.4 and 4.5)

Just as there are some techniques in osteopathy dealing with the structure, the viscera or the craniosacral system, there are also several yoga exercises showing effects in all these fields. The mobilizing and strengthening effect of asanas is obvious. In the visceral field there are also yoga techniques comparable to osteopathic techniques. The pranayama technique using the abdominal lift has been compared to the osteopathic lift of the diaphragm as an example in chapter 5.2. Both techniques effectively mobilize the diaphragm and thus cause, among other things, the mobilization or “massage“ of the abdominal organs.

The osteopath Rollin E. Becker very credibly describes the effect of the asanas on the craniosacral system. He takes the lotus position as an example and describes, how it liberates the whole mechanism from the cranium to the sacrum and thus also the fluids and the membranes. (Chapter 5.3.2) The fact that a well-known and acknowledged cranial osteopath looks into the effect of a yoga position clearly establishes a connection between the two systems already. Moreover, intensification of breathing by practising pranayama or asanas can also influence the craniosacral system. (Chapter 5.3.1)

While only a few examples have been mentioned here, other important parallels have been dealt with in the study.

On the basis of that common ground between osteopathy and yoga, I shall focus on the questions mentioned in the Introduction, which can be of practical importance to osteopathy:

To what extent can yoga exercises support an osteopathic treatment?

To answer this question, the effects that yoga exercises and osteopathic techniques have in common shall be mentioned here once again. Among these effects are general and specific mobilization, detoxification, relaxation and also strengthening of the immune system. Osteopathic treatment tries to eliminate the cause of a lesion or a disease. Such a cause can be, for example, structural blockage of the musculoskeletal system, metabolic imbalance or overstrain, massive stress burden followed by excessive strain, or susceptibility to infections caused by different factors. Osteopathic treatment gives impulses that shall activate the self-healing powers. In order to do so, the osteopath can use manipulation or a relaxing soft tissue technique, or techniques which stimulate detoxification, such as liver techniques, kidney techniques or bowel techniques to activate excretion, or lymph techniques to strengthen the immune system, or techniques at thymus gland or liver. Often several weeks lie between the individual treatments. Therefore, it seems useful that during this time the patient contributes independently and actively to his recovery. Yoga offers an appropriate possibility here to contribute to the reduction or elimination of factors that could cause a disease. Such appropriate measures which usefully support osteopathic treatment are pranayama techniques stimulating detoxification processes in the body (Chapter 7.2), inverse postures such as the headstand or asanas opening the thorax, which particularly activate the immune system (Chapter 7.4), or yoga exercises reducing the activity of the sympathetic nervous system and the reticular formation, thus reducing the stress reaction of the body. (Chapter 7.3)

In this connection the question arises to what extent yoga can reduce the probability of the recurrence of an osteopathic lesion?

Although no long-term studies have been carried out yet, a thesis must be put forward here that yoga is capable of acting preventively in this regard. In chapter 5.4.1.3, for example, it has been pointed out that inverse postures affect the position of organs positively. If regular yoga exercises that include headstand, shoulderstand or other inverse postures are practised after successful osteopathic correction of a ptosis of an organ or a malposition of the womb, for example, it is very likely that the probability of the renewed sinking of the organ or the recurrence of its wrong position will be reduced. In the same way, organs such as liver, stomach, spleen or bowel can be kept in better functioning by regular practice of pranayama, which improves breathing mechanics and activates the diaphragm, for instance. (Chapter 5.2)

After these considerations it seems quite useful to give the patient a specific home programme consisting of a sequence of yoga exercises adapted to the individual patient. It is also often necessary that the patient ponders his lifestyle and tries to reduce or eliminate factors which cause or maintain diseases. This leads directly to the next question:

Could yoga support the patients in making the necessary change of habits?

In chapter 7.2 it has been pointed out that a change of lifestyle can further increase the positive effect of yoga exercises. Necessary change of diet, improvement of posture, reduction of stress, etc. certainly enhance the effect of osteopathic treatment, too. If the body has fewer straining influences to deal with, it will probably be easier for it to adapt to the new situation created by osteopathic treatment, and its self-healing powers will more rapidly bring about improvement or cure of the disease. In the chapter mentioned above I have referred to the first two steps of yoga, yamas and niyamas, in this connection. (Chapter 3.2) They can be understood as guidelines, which demand careful dealing with oneself and others. They can add to the list of changes of habits recommended by the osteopath.

The last question mentioned in the introduction has not yet been dealt with. It contains an aspect, however, that might be of interest to the osteopath:

Could regular practice of yoga influence the osteopath’s ability to feel?

Each treatment is an interaction between the therapist and the patient. On that subject Donna Fahri, a movement therapist and yoga teacher, writes: “When we lay our hands on someone, we need to be aware that an exchange of information is taking place between two resonant fields.” This means that if an osteopath wants tense tissue to relax under his hands, it is necessary that his own body is relaxed and permeable as much as possible. Fahri also writes: “You cannot, in essence, make someone breathe (or relax) through force, but only through providing a situation in which breathing (relaxing) can happen. The situation is strongly affected by our own resonant field.” (1)
If the osteopath bears too much tension in his own body, he will transmit this tension to the patient during the treatment. The tissue under his hands which he wants to diagnose or treat will also increase its tension. The osteopath will probably feel less. A good starting position with good “earthing“ and certain permeability to the energy

that flows between the patient and the therapist are good conditions for subtly differentiated feeling. In this regard, the practice of asanas, pranayama and meditation could enhance the ability to feel and provide beneficial counterbalance to the work of the osteopath. It could promote the free flow of energy in the body and prevent the therapist from storing possibly exhausting energies or from transmitting too much energy to his patients.

In conclusion we can say that looking into yoga could be beneficial to the osteopath and his patients at different levels.

1 FARHI Donna, The Breath That Moves Us, J.8: 16

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