



Sensomotorische Körpertherapie
nach Dr. Pohl®

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The Abdomen and its Muscles

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Summary: *This article deals with the many false assumptions about the workings of the abdominal musculature. Following explanation of the anatomical, spatial relationship between the abdominal muscles, inner organs and diaphragm, the causes of a protruding abdomen are demonstrated.*

Excepting the case of excess fat, the principal cause is postural. Such cases of incorrect posture are not attributable to weakness of the abdominal musculature, the strengthening of which is therefore pointless. The most frequent problem is that of excess tension in the musculature of the back and that of the front of the rib-cage. Exercises are recommended, through which this tension can be relieved.

Dear Franz Konz,

In a recent issue of *Natürlich Leben* you wrote the following: "You should not forget that when the intestines are correctly positioned, they lie behind the ribs, not in front of them. The constant strengthening of both the abdominal wall and the stomach muscles is necessary, in order to prevent your bowels from pushing their way outwards."

This is, with all due respect, nonsense.

Firstly, the intestines do not lie behind the ribs, but in the abdomen. Only the uppermost stretches of the large intestine come, after exhalation, to lie behind the ribs (fig. 1 & 2).

The lungs and the heart are to be found behind ribs; the liver, stomach, spleen and pancreas are situated within the cupola of the diaphragm. These locations are not to be understood statically, since the inner organs are constantly "on the move". By exhalation, the diaphragm (a panel of muscle) forms a steep dome pointing upwards, pushing the lungs together from underneath, forcing us to breathe out. The inner organs move inwards and upwards into the dome. By inhalation, the diaphragm resumes its flat form, creating a vacuum in the lungs: the lungs suck in air, while the organs are pushed downwards and forwards. The intestines lie quite naturally further out by inhalation than by exhalation. Prerequisite for this process is a loose, elastic abdominal musculature.

Secondly, strong stomach muscles are not in the least responsible for holding the bowels in any particular position; if they are active in this way, they are no longer able to move as they should. If the body's entire musculature is relaxed and flexible, the organs retain their most natural position automatically.

I am, of course, aware that not every human body functions under these "ideal" conditions. Distended abdomena are a common phenomenon. With the exceptions of pregnancy, nutritional oedema, abdominal dropsy and in the advanced stages of cancer, this arises as a result of one of the four following factors:

1. Fat. Most human bodies store excess fat principally in and around the abdomen
2. Flatulence and extreme constipation
3. Hollow back posture
4. A confined, stiff rib-cage

Since the first two factors are generally sufficiently understood, we will concern ourselves here only with the third and the fourth.

A hollow back posture comes to rise as follows: the pelvis is tipped forwards while the shoulders are drawn further back than the hip joints. This posture is retained by the tension of the back musculature. If you try it for yourself, you will notice that the abdomen is pushed forward into a most unnatural position. In this posture, the abdomen also feels unusually hard. Although they are naturally forced to stretch, the abdominal muscles must, at the same time, remain extremely tense in order to prevent the body from yielding to gravity and falling backwards. As a result of the overtense abdominal musculature, respiration is significantly impaired, as well as the inner organs being rendered immobile (fig. 3).

A confined rib-cage results from the drawing of the lower, front ribs inwards and the shoulders forwards. The upper back buckles over and the diaphragm is squeezed together. The organs of the upper abdomen are thereby pushed downwards, forcing the abdomen to bulge out at the front (fig. 4). This posture also hampers normal respiration; in order to allow the intake of sufficient air, the rib-cage is pulled upwards by the lateral neck muscles. They, in turn, become over stiff.

These four factors are, of course, frequently to be observed in combination with one another (fig. 5). Strong stomach muscles are, however, no help in the fight against any of them. Portliness arising from a hollow back can only be effectively treated by remobilising the back muscles; a stiff, restricted rib-cage requires the remobility of the entire rib and chest musculature.

A portly figure resulting from either of these two factors is not purely an aesthetic problem; long-term hindrance of the organs in their location and movement will result in their malfunction (fig. 6).

Equally damaging to one's health, however, is the drawing-in of the abdomen. "Tummy in, chest out!" is really the daftest piece of advice given in the history of mankind. Try it for yourself and you will see that "Tummy in!" results in the

immediate tension of the diaphragm, seriously hampering the breathing and restricting the movement of the organs. "Chest out!" tenses up the entire back musculature, right down to the sacral region.

Unfortunately, many people with a more rotund figure, whether the result of excess fat or unnatural posture, attempt to make their perceived "fat tummy" disappear by tensing up the stomach muscles and pulling everything inwards. Any aesthetic improvement is nullified by the significant risk to our health (both physical and psychic), since the human organism is even more dependent on sufficient, anatomically correct respiration as on healthy nutrition. Sadly, many genuinely slim human beings also consider themselves to be more attractive when they consciously draw their tummy in.

Dear Mr. Konz, I cannot advocate the strengthening of the musculature propagated by you as well as many others. All muscles require, more than anything else, **movement**, not strengthening. Muscular movement stimulates the metabolism, nutrition, circulation and the provision of oxygen to each individual cell.

In my body therapy practice, I have examined the muscles of literally hundreds of human beings. Never - I swear, not once - could one conclude that muscular weakness was the cause of any physical complaint. Muscles are adaptable organs. When subjected to more frequent and increased exertion, they gradually become thicker and stronger, in order to be better equipped for any future strain. If, on the other hand, the muscles are applied less by the body, they become thinner and weaker. Muscles accommodate themselves to that which is required of them.

A weak muscle is, however, not necessarily incapable of functioning usefully in everyday life. Anyone who has had a broken leg for a while in plaster will confirm that the muscles of the leg in question are, afterwards, out of condition, particularly those of the lower leg. The leg as a whole is thinner. This arises from the enforced immobility of the muscles in the plaster. The calf musculature, for example, becomes thinner because the immobility of the ankle prevents the bodyweight from being able to be supported by the calves when walking. However, when the plaster is removed,

one is immediately able to walk again; the relative weakness of the newly-healed leg does not cause us to fall over. If one uses that leg the same as the other one again in daily life, it will recover its former condition without the aid of any extra strengthening exercises. Should one experience any pain in the newly-liberated leg, or any restriction of movement, that is not the result of any muscular weakness. In this case, the weeks of staticity will have allowed the muscles and connective tissue to contract and remain stiff and inflexible.

Even when, years after an injury, the one leg is still thinner than the other, strengthening exercises for the limb in question will be of no benefit. The unequal strength of the two legs will have resulted from their nonuniform application in day to day life. The patient had, in all probability, developed an unnatural posture while the broken leg was healing, in an attempt, conscious or otherwise, to protect the leg from pressure and stress. The body-weight is supported principally by the uninjured leg by tensing up the back and lateral waist muscles. If the patient continues to be as active after the injury as before, the injured limb will remain thinner, while the fit one becomes even stronger and thicker.

It would, however, be incorrect to consider the stronger limb to be the "healthier" of the two. The problem lies in the unequal application of the legs and the retained immobility of parts of the torso musculature. The only beneficial therapy is to encourage the overtense muscles to regain their natural flexibility. This entails "relearning" to apply the entire body to all significant movement. One must stand with the weight burden shared equally between both legs and ensure that the weight is switched equally from limb to limb when walking. Only in this way can equality of strength be achieved.

Muscles do not exist in order to hold, but to move. The retention of our body in any particular position is the job of the ligaments.

What does this imply for the abdomen? No human being suffers from too weak stomach muscles! The abdominal musculature does not have the task of holding the bowels in place. Its primary function is to enable the movement necessary for

unhindered respiration. More occasional functions include supporting the body when leaning backwards, assisting us when lifting heavy objects or passing a stool, and enabling us to laugh, cry and sing.

It is, of course, possible that the abdominal musculature is too weak to facilitate the lifting of particularly heavy weights. This should, however, be like all natural movement processes, involving the muscles of the entire body (see diagram). Muscles are not applied individually for any such purposes; even breathing requires not only the application of the diaphragm, but of the musculature of the whole torso.

It is, therefore, nonsensical to strengthen individual muscles by way of specific exercises. They will become stronger, but to what end? The coordination of the body as a whole will actually deteriorate, rather than improve. If we want to be able to lift heavy weights, we must practise doing exactly that, applying the whole body.

If that is not, however, one's aim, it would be ill-advised to undertake such training; from a health point of view, it is of no worth. Body-builders are not healthier than any other human. On the contrary, this type of exercise leads to the long-term tension of the musculature. To illustrate the point, no cat requires a fitness studio in order to strengthen its abdominal muscles; no ape has ever been observed undertaking any specific exercise to such ends. All animals make movements with the entire body, suited either to a particular purpose or arising in play.

The isolated strengthening of individual muscles is equally unnatural as the taking of individual vitamin supplements, isolated from the nutrition as a whole.

If one wishes to invest time at a gym, the apparatus designed to enable complete body-movement and develop stamina should be made use of: running and rowing machines, cross-country skiing simulators and the like. Even better, of course, is the practice of such sports for real, outside in the fresh air.

All exercise, whether in a fitness studio or not, should be so undertaken that the muscles are not only forced to tense up, but immediately allowed to loosen again.

Muscular relaxation should not be accommodated for only after the workout is at an end.

Anything which forces muscles to remain tense for any length of time leads to long-term tension which can only make life more difficult. The same applies to all movement in day to day life. Whether walking, clearing snow, ironing or sawing wood, we should always ensure that the entire body is in action. In practice, this means applying the back and abdominal musculature to movement that might otherwise be executed only with the arms or legs. By ensuring that no muscles are held stiffly, we can actually do gymnastics the whole day long.

Food for thought: the human being is neither the strongest nor the fastest animal. He is, however, the most agile, versatile and differentiated creature. Let us, therefore, execute movement appropriate to the design of our body, instead of such daft training of individual muscles!

That which is conducive to the preservation of our muscular health as a whole is particularly relevant to the abdominal musculature: as much varied movement as possible is necessary in order to avoid permanent contraction. Muscular stiffness, along with malnutrition, is the root of almost all health problems. Rigid abdominal muscles cause not only pain (normally unexplainable for conventional medicine), but lead to the malfunction of the inner organs. This manifests itself commonly as constipation, stomach ache and bladder complaints. The hindrance to the breathing represented by overtense abdominal muscles has serious adverse consequences for the whole metabolism.

Life requires movement; not only tension or relaxation, but the rhythmical combination of the two. The majority of human beings today suffer from a predominance of tension of the muscles. It is, therefore, essential to focus on the easing of tension, rather than strengthening the muscles further.

Unfortunately, the medical world of the present day knows practically nothing about muscles, even less about their application in day to day life and absolutely nothing

about movement. Not a reassuring fact, considering that, without muscular movement, we could not do anything whatsoever - we would actually no longer live. Muscular movement is necessary for everything, from breathing and speaking to walking and writing. Muscular movement is even necessary in order that we can see clearly. Nonetheless, the study of anatomy is carried out on a corpse, even to this day. Any mention of the function of muscles is only to be found in the study of sports medicine and in this case only in the context of their strengthening. It has only come to the modern-day fad for muscle-strengthening as a result of the comprehensive lack of understanding of what the muscles are actually there for.

One example is the fairytale propagated by conventional medicine, that one should strengthen the back musculature in order to obviate potential spinal problems. It is said that the back muscles of one who walks buckled forward are too weak to hold him erect. The actual problem is that the abdominal and chest musculature is so contracted that the upper body is pulled forwards. The back muscles are, in turn, overtense preventing the entire body from tipping over forwards. This double tension is for even the layman evident; when the person in question walks or makes any movement at all, the staticity of the upper back is clearly visible. Every hunched back is a stiff back. The strengthening of the back or the stomach muscles is, however, of no benefit. Only the loosening-up of the entire musculature can lead to the retrieval of a naturally upright posture.

Muscles are built for movement, not for long-term holding. By manual examination of a naturally erect, relaxed human being (fig. 12 & 13), one notices that the entire back musculature is soft. In order to stand up as nature intended, one requires neither abdominal nor back muscles of any strength at all; our bodyweight is supported by the bones of the skeleton. As two-legged animals, we have a very small standing base and a high centre of balance. When standing up naturally, the muscles have the function, by way of minute adjustments to and fro, of ensuring the body does not lose its balance. A relaxed abdominal musculature is also very much involved in this process. The tenser the muscles, the more instable we become, the process of balance being denied its essential dynamism.

In our modern culture, we normally regard movement (and healthy movement at that) as being expansive, strong, fast and strenuous, even violent; anything less is considered to be a waste of time and energy. Since we are generally inclined to confuse a hard muscle with a strong one, many humans subject their abdominal musculature to extreme torture, until it presents itself as the so-called "six-pack". There is, however, almost nothing more damaging to ones health as a permanently tense abdomen.

To reiterate: the abdominal musculature must be relaxed and elastic. Only in this state is it capable of the movement necessary in everyday life, in conjunction with the other muscles of the body. Only in this state can it ensure that we keep breathing, unhindered, 24 hours per day.

If we abuse our muscles by forcing them to tense up for long periods of time, when retaining a "six-pack", permanently drawing our abdomen in or with a hollow back posture, for example, they will repay us with their long-term rigidity and immobility which will not release itself of its own accord. We need, therefore, exercises which help us to consciously relax our muscles and allow them to retain their flexibility.

All the unnatural states described above in which the abdomen can find itself, regardless of whether they arise from inappropriate training, permanent drawing-in or unconscious pushing-out of the tummy, are damaging enough to our health for the fact that they hamper our breathing. Natural respiration is at least as important for the whole body, for all the cells and for every function, as good, natural nutrition. Deficient respiration fosters the emergence of many illnesses, including cancer.

Dear Herr Konz, you have proved yourself to be an intelligent man, not generally prone simply to repeat the teachings of so-called authorities, but rather relying on your own experience and commonsense. I can, however, confidently claim that you have never encountered a human being, the bowels of whom were spilling forward due to the weakness of his stomach muscles. Could you not be persuaded to apply your normal methods to the topic of muscles and movement, in order that we can banish our cultural stereotypes in this matter? I promise you, it will open up a broad

perspective of a whole new understanding of the human organism. In order to do this, one needs only take seriously what one observes oneself - what one feels, sees and, sometimes, even hears (for example, hindrances to the breathing).

In conclusion, I would like to recommend three wonderful exercises for the abdomen to you and the readership.

In preparation, please lie down on your back, either on the ground or any other firm surface. Try to feel through the length and breadth of your body exactly where and how you are lying. Notice whether, and to what extent, the small of your back and your shoulders have contact with the floor. Pay attention, also, to how deep into the abdomen and how high into the rib-cage you breathe.

Exercise 1

While lying, bend your knees, the soles of the feet remaining flat on the ground. Clasp your hands together behind your head. While exhaling, raise your head slowly until your shoulders have also left the floor. At the same time, move your elbows slowly towards each other. While rising, notice how the abdominal muscles tense up and how this tension spreads over the rib, chest and frontal neck musculature. Continue to breathe normally, laying the head and shoulders very slowly back down on the floor and the elbows down as far as they naturally go.

Repeat this exercise a few times, paying attention to exactly what your body does: the frontal musculature tensing up and then gradually releasing the tension until you are lying down again, with the muscles totally relaxed. Do not repeat the exercise until every muscle is fully relaxed.

Be sure that the strain is taken principally by the stomach muscles, not by the neck, as this could lead to other problems.

Having repeated the exercise for the last time, feel how you are now lying and breathing. You will probably notice that your shoulders lie flatter on the floor than before (indicating a more erect posture when standing) and that you can breathe

more easily and further down into the abdomen.

Should you have noticed that the muscles "stuttered" while executing the exercise, this is a perfectly normal consequence of the tension in your body. The brain is able to send too little information per time-period, since it has, in effect, forgotten how to move these muscles. This "stutter" is only noticeable when letting the head down so slowly, because the brain is then learning all the degrees of tension and relaxation. This movement is considerably more differentiated than if one was to quickly raise the head and then quickly lower it, since this would require only two relatively crude impulses from the brain. If you continue to perform this exercise, slowly and attentively, the stutter will gradually disappear.

If you repeat this exercise on a regular basis, without having regularly exerted the stomach muscles to any degree in the recent past, the muscles will, of course, become gradually stronger. This is not, however, the objective, but purely a side effect. The aim is to be able to totally relax the abdominal and chest musculature, making it so flexible that it can contribute to all movement made in day to day life.

Exercise 2

The musculature of the abdomen does not function isolated from the rest of the body, but moves in conjunction with the back musculature. In the first exercise, how far one is able to raise the head and shoulders does not depend purely on the performance of the stomach muscles, but also on the extent to which the back muscles are able to yield and extend. Since portliness can be caused by excess tension of the muscles in the small of a hollow back, here is an exercise for the back muscles:

Lie down, knees bent with the soles of the feet flat on the floor. Lay your arms down at the sides of the body. While inhaling, form a hollow back by lifting the back at waist level off the floor, pushing the coccyx firmly downwards. Allow your abdomen to bulge outwards at the front. While exhaling, let your back down very slowly, allowing the tummy to go back in, without drawing it consciously inwards.

Observe how the back muscles at first tense up and then relax again and how the movement goes through the whole body in a wave. Try also to feel how the spine moves, vertebra for vertebra, then, in turn, the shoulder blades. Since the head is directly connected to the spine, it also becomes part of the movement.

After repeating the exercise a few times, lie down, relaxed, as at the beginning. Observe how you are now lying with your back, in particular with the sacral region, and whether a little of the tension has been released. If so, you should be able to lie with less of a hollow back and with a less portly abdomen.

Now see if you can execute the first exercise more effortlessly and maybe further than before.

Exercise 3

Since there may be cases of portliness among the readership resulting from stiffness in the chest musculature, here is an exercise especially for this problem:

Lying down, place the right hand on the bottom of the right-hand side of the rib-cage, the left hand similarly on the left-hand side. The little fingers should lie over the bottom edge of the rib-cage. Observe how your rib-cage moves in reaction to your breathing, if at all. While exhaling, draw the two halves of the rib-cage towards each other; while inhaling, push them apart. You can help yourself at the beginning by exerting gentle pressure with your hands while drawing the rib-cage together, retaining the pressure to a degree during inhalation in order to provide a little resistance. Notice how the lower abdomen pushes outwards while exhaling.

After several repetitions, leave the hands on the ribs and feel whether the rib-cage has become freer to partake in the breathing process. If so, the respiration should feel lighter and more effortless. Perhaps the lower abdomen bulges out a little less as well.

Apart from repeating the exercises daily, pay attention to your abdomen regularly during your waking hours. You may well notice that when you are under stress you

tense up the tummy muscles, hampering your breathing. Some people are susceptible to this simply when they concentrate their mind on something. When you determine this yourself, loosen the muscles by consciously contracting them when exhaling, then letting them relax when inhaling. This can be accomplished whether standing or sitting. When exhaling, draw the bottom of the rib-cage inwards and allow the back to curve forwards. While inhaling, form a hollow back. Be sure to release the tension respectively of the hunched back and the hollow back immediately. The resulting posture will - hopefully - be that which your body requires.

Your abdomen will thank you!

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