

Dancing with the Breath in Rolfing® SI

Pre-movement, Orientation, and the Cycle of the Breath

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ABSTRACT *How we breathe is how we live, and the ways that we occupy the spaces of our breath reflect distinct physiological and psychobiological potentials. The author deftly describes our different modes of breathing and encourages us to strive for balance, teaching us how we can help ourselves and our clients.*

Author's Note: I have opted in this article to use the pronoun 'they' when speaking about people in a general way. This is out of respect for the cultural moment in which we find ourselves when gender is no longer a binary process. As the 1960s brought the freedom to use the pronoun 'she' instead of the classic 'he', so this new century brings the freedom to not be identified either as a 'she' or a 'he'; and thus, 'they' is my pronoun of choice.

Beginning Considerations

An average human being breathes anywhere between 17,000-25,000 times per day. Even with a margin of error of 8,000 breaths, it is still safe to say that breathing is one of our most repetitive movements, and as such, one of the most potent factors in creating our structures.

We breathe as long as we are alive. When we stop breathing, we die; thus, breathing is life. The way that we breathe or do not breathe is intricately related to our autonomic nervous system, to

our emotions, to our beliefs, to the way that we orient in the world, and to the way we relate to ourselves and others. Breathing is one of our oldest and deepest automatic movements; and yet, to a degree, we can also override the autonomic signals and take conscious control of our breath. Breathing is one of the places in our body/beings where conscious and unconscious, nature and will, meet each other.

When we speak or sing, we take control of our breath causing it to flow across our larynxes in such a way as to produce sound. Speech is one of the functions that makes us fully human and allows us the many nuances of verbal communication that are part of our complex social interactions. Our capacity to exhale in a slow, steady fashion – which is also linked to the deep coordination of core stability – is inextricably intertwined with our capacity to communicate.

We find our breath at the center of movement where conscious and unconscious meet and in the place where function creates structure; and structure, in its turn, feeds

back into function. When we consider working with someone to help them create changes in their structure, we address only a part of the issue if we do not take into consideration their habitual patterns of movement, especially breathing,

When we ask what constitutes a healthy way of breathing, the answer is as varied as all the activities that the human being may perform. Breathing adjusts to the ever-changing landscape of the body's necessities, running the gamut between 'thoracic and fast' when the need for oxygen is high, to 'slow and abdominal' when we are in a predominately parasympathetic state. A healthy breathing capacity, then, is one which can adapt to the situation in which we find ourselves.

When we think of some of our clients, we quickly realize that some bodies are more adapted to certain kinds of breath than others. For example, think of the person with a rib cage that is caught in the movement of inspiration. The sternum is high and forward; the front-to-back depth dimension predominates over the side-to-side dimension; and the erector spinae (specifically the iliocostalis) are tonic and overworking. This is often a person who is active, excitable, and has a hard time slowing down. This is a person for whom abdominal breathing and the parasympathetic activities of moving slowly, resting, silencing, and grounding may not be fully supported by their structure.

A healthy capacity for breath involves a structure, both physical and psychobiological, that is adaptable and able to embrace all kinds of breathing and multiple internal states. On the other hand, an adaptable breathing pattern will create a structure that is flexible and fluid, able to adjust easily to different necessities for oxygen and different levels of activity.

Like the proverbial chicken and egg, physical structure and habitual movement patterns flow into and create each other – often so seamlessly that it is difficult to tell where one begins and the other ends. In the case of breathing, because it is such a repetitive movement, the movement itself needs to be addressed if a lasting structural change is to be obtained.

Breathing – Willingness as Opposed to Willfulness

How then, do we address breathing? It is very tempting to just try to make it happen, to breathe in deeply, and to push the breath out with a forced exhalation. But

the profound automatism of the breath can only temporarily be overridden, and this control has a high price.

The breath is modulated by the respiratory centers in the brainstem that have chemical and mechanical receptors. When the CO₂ levels in the brainstem reach a certain level, the inspiratory centers will stimulate the phrenic nerves to contract the diaphragm; and we breathe in. When stretch receptors in the lungs indicate to our brainstem that the lungs are full and CO₂ levels in the blood decrease, inspiration is inhibited, and expiration follows. Expiration, when we are not in high physical activity, is a passive movement in which the diaphragm relaxes and returns to its high dome-like position. Elastic recoil in the lung tissue also helps the return of the diaphragm.

In the brainstem resides our body's deep organic intelligence. It knows best when it comes to modulating the breath. However, there are many factors in our bodies and our lives that can alter this somatic intelligence in ways that do not support our highest state of well-being. Poor posture, sedentary lifestyle, breathing difficulties (such as asthma or bronchitis), or chronic emotional states are a few of the factors that can kidnap the autonomic intelligence of our breathing.

Thus, we may encounter a client with a collapsed, expiration-preference rib cage who can't get a full thoracic in-breath because of myofascial restrictions. Another client, who may have a tendency towards anxiety, has co-opted the breathing pattern into short, shallow breaths where neither the in-breath nor the out-breath ever get a chance to complete. A client with asthma or a drowning incident in their past may never complete an exhalation because of the fear imprinted in the body from these experiences. (The body is loath to release the last of the air in the lungs when it does not know if it will be able to get sufficient air on the next in-breath.)

Telling the client to take conscious charge of their breathing will last only as long as the client's concentrated attention and may often do more harm than good. As an example, we can think about the out-breath – a moment when the body in quiet activity oscillates naturally into a parasympathetic state. As the diaphragm lets go and moves upward inside the rib cage, back to its relaxed, dome-shaped position, the intercostal muscles release; and the rib cage becomes soft and pliable. The ribs ripple downwards, one at

a time, like venetian blinds closing, and the belly softens. The lumbar rest back into a 'de-lordosed' position.

But what happens when we try to push the breath out to consciously create this moment of rest and ease? When we expel the breath, the intercostal muscles, instead of softening and releasing, they contract. The differentiated venetian blind movement of the ribs in exhalation is lost, and the rib cage becomes a solid unit. This is what our rib cage does to stabilize when we prepare for effort or impact. Our body listens to proprioceptive input more than it does to cortical intention; so the effect of pushing the breath out is that we do not relax. Instead, our body prepares for impact and upregulates into sympathetic activity, and the moment of parasympathetic release is lost.

Breathing, Orientation, and Pre-movement

The optimal time to change any movement, including breathing, is in the pre-movement – the moment that our body prepares for the movement that we intend to do. At this moment, the entire body, from head to toe, organizes itself to be able to maintain balance while the movement is performed. Once this full-body orchestration has occurred, it takes a lot of energy to reroute the movement. For example, anybody who has raised their fist to punch a pesky little brother only to have their mother walk into the room, knows that it is almost impossible to disguise the pre-movement of a punch as something more harmless, such as scratching one's head. In the shifting of weight and the tonic preparation from head to toe, the body's intention for movement is expressed; and the movement itself is determined. Thus, timing is of the essence!

To change the movement that will emerge, we have to change the pre-movement. In other words, we have to change the way that we conceive of that movement, and thus, the body's preparation for the movement. We make this change, not by willing or controlling, not by acts of tension, but by acts of attention and imagination.

In the split second in which we prepare for movement, we draw upon immense archives of information – both internal and external. Only 2.5% of the neurons in the motor cortex descend to the pyramidal system from where movement is determined. The other 97.5% of these neurons are interneurons that make connections to bring in information from

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the body, the environment, and from the rich internal databank of associative information. These interneurons offer us information about the context in which we are moving and the meaning of the movement that we are doing. To return to the above example, although scratching my head and punching my little brother both involved raising a closed hand, the intention is very different, as is the tonic preparation for the movement and the result!

One of the big sources of external information that we rely on to organize our movement is orientation to our environment. According to Hubert Godard, researcher, founder of the Department of Dance Movement Analysis at the University of Paris and Rolf Movement Faculty, we have two basic modalities of orientation. We orient downward to ground, gravity, and to our surroundings; and we orient out into space, to other, to connection. When our capacity to orient to gravity and to space is balanced, the information that our body receives to organize movement is also balanced. Then, in the pre-movement, the spine lengthens, the joints open, and the movement that emerges manifests grace and ease. However, most of us have a preference for orienting in one of these directions; and this preference creates an imbalance in the way that we organize movement.

To give a simple example: someone who orients more to ground than to space will rarely trip over irregularities in the ground, but may easily be surprised by an overhanging branch that knocks their hat off before they see it. This person may be more introspective and will often demonstrate a preference for either abdominal breathing or the phase of expiration.

Someone who orients more to space will rarely be surprised by overhanging branches but may easily trip when they encounter a hole or obstacle on the ground. This will often be a person who is more interactive with others; and who has more breath on the phase of inhalation rather than exhalation; and who gets more air into their thorax.

The above examples are gross oversimplifications, but they do give us an

image of what each orienting preference may manifest. If we examine them further, they will also yield information about how we may work with the cycle of the breath in such a way that we engage the client's act of attention and allowing instead of willing or forcing.

Learning to 'Inhibit the Inhibition'

The cycle of breath is one of the best places to start to help the client to balance their breathing. For our interests, we will consider the cycle of breath as having three phases: inspiration, exhalation, and the pause between the end of the exhalation and the next inspiration. We will not consider the possible pause at the end of inspiration because this pause, when it occurs, tends to activate the client sympathetically and locks the breath. As such, it is not nearly as interesting for helping the client to find a smooth easy flow of breathing.

When we work with the cycle of the breath, our goal is to help the client to find the optimal breathing rhythm of their body in a way that is easeful and free of effort. Depending on the client's habitual pattern of breathing, this may require the Rolfer™ to suggest new ways of orienting and to encourage the client to, in the words of F.M. Alexander, "inhibit the inhibition."

Inhibiting the inhibition means that when we discover ways in which the client does not allow the breath to flow freely – ways in which the client is inhibiting their breath via patterns of habit, incomplete orientation, or trauma, to name only a few – we help the client to become aware of the moment when this inhibition occurs. From there,

instead of proceeding with the habitual coordination sequence, we encourage the client to inhibit this sequence and offer the system other information so that something new can occur.

As an example, let's take a client who had asthma as a child. Although it has been many years since the last asthma attack, the patterned response is still there in the client's coordination. So, this client, as they exhale, may not allow the exhalation to complete. Instead, halfway through the out-breath, they switch to an in-breath. The in-breath that comes is unconsciously colored by the panic of past asthma attacks.

The scalenes, which in normal breathing give the very slightest pulsation at the beginning of inhalation, come on full force. We can see the neck activate; sometimes the sternocleidomastoid and even the platysma contract visibly as the body remembers the 'state of emergency' that it once lived through. In this breathing sequence, the exhalation is not completed; and the pause at the end of the out-breath never occurs. Besides this, the overactivation of the auxiliary muscles of breathing gives the body a continual message of alert and panic, which makes it hard to return to a more normal rhythm of breathing.

With such a client, 'inhibiting the inhibition' might start with helping the client bring their attention to the fact that while they continually feel that there is never enough air, that in truth, they are never releasing more than 30% of the air in their lungs. This, of course, means that at most, they will only manage to get 30% of their lung capacity in any given breath. Usually, helping the client to notice this will be sufficient to catch their attention and curiosity – especially if the feeling of never having enough air is something that causes them discomfort.

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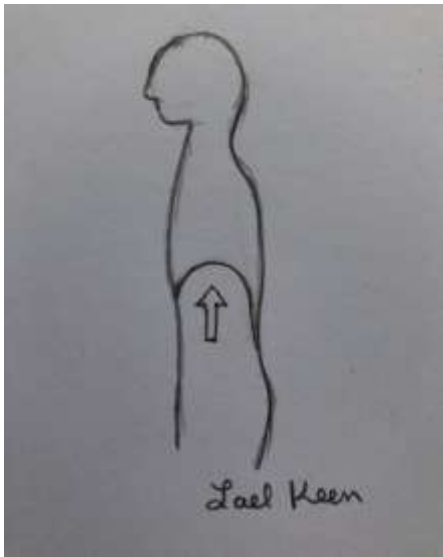


Figure 1: Out-breath.

Once the client's curiosity has been engaged, we begin to encourage them to attend to the coordinative *crossroads* where the habitual occurs. Instead of allowing their body to follow the grooved path of habit, we ask them to wait just a moment at the crossroads to see if the body (which always orients to maximal health and well-being when we allow it) will find a new path forward. At this moment, helping the client to orient to a sense of gravity – the weight of their back on the table, becoming slightly heavier as the breath flows out, and the softening of the ribs as the rib cage settles back towards the table – may be sufficient for them to allow a slightly longer out-breath. This time they may release 50% of the air in their lungs and thus allow 20% more of their lung capacity to come online. In this way, the client has allowed more air to go out with the exhalation, not by forcing or expelling the air, but simply by waiting and allowing the natural movement of the out-breath to come closer to completing.

The Cycle of Breath

Let us now examine more closely each phase of the cycle of the breath.

The Out-breath

One of the most useful points of entry into the client's breathing pattern is the out-breath. In normal quiet breathing, the out-breath is a passive movement when the diaphragm, which contracts and flattens downward on inspiration, relaxes and

returns to its dome-like resting position, aided by the elastic components of the lungs (see Figure 1). The out-breath is the phase of the breathing when the autonomic nervous system oscillates into a slight parasympathetic activity, and we relax and release. When performing other functions, such as talking, singing, or preparing for various types of effort or impact, the exhalation goes from being a passive movement to an active movement. For this, we have the auxiliary muscles of breathing (i.e., the intercostals, the abdominals, and pelvic floor, to name a few). As we modulate the flow of air across the larynx to vocalize or push the air out and lock down in preparation for lifting a heavy weight, these muscles contract, and the out-breath becomes a moment of activity – no longer a release and letting go.

Our body, in its wisdom, has as many different responses and coordination patterns as it does activities. The problem comes when the coordination of one movement gets confused somatically with a different movement. This frequently happens with the out-breath, which becomes an active movement of expelling the air, even when no other function has been engaged. When this happens, we miss not only the moment of parasympathetic release, but also the possibility of softening and differentiation that occurs between each individual rib as the wave of relaxation moves downward through the belly when the out-breath is released instead of pushed.

Another important aspect of the out-breath is that our body knows it is safe when the out-breath is slightly longer than the in-breath. A longer out-breath not only deepens the moment of parasympathetic release, but it also sends an uncontested message to the body that we are in a situation of safety. Why is this? Because in any situation of danger or impending danger, one of the first things that happens is that our heart rate and breathing rate increase so that we may have a larger and more efficient delivery of oxygen in preparation for fight or flight. At this moment, the in-breath will become salient, as the body focuses on bringing in the maximum amount of oxygen. And as happens so often, the underlying coordination and physiology of the body gives us a strong, unconscious message about what is happening in our environment. Therefore, a longer out-breath that is released, instead of expelled, is a

robust contribution to a body-based sense of security.

The orienting direction that offers the most support for the out-breath is orientation to gravity and ground.

The Pause

When the breathing pattern is healthy, a pause comes at the end of the out-breath. In the time when the breathing apparatus is not actively engaged, the oxygen/carbon dioxide exchange is occurring within the cells in the farthest corners of the body. This pause is a moment of limbo, and it is also one of the most powerful moments to help the entire breathing pattern to reset. As we help the client to rest into the pause, instead of reflexively pulling in the next breath of air, a very profound relaxation becomes possible. In the space where we are neither inhaling nor exhaling, we can rest and settle. This becomes a moment of deep parasympathetic activity and letting go.

The orienting direction that most supports the pause at the end of the exhale is ground or gravity orientation.

The In-breath

From the pause, the body naturally moves into breathing in. Here, we find that whether or not we have allowed the pause to be present has an immediate effect on the quality of our next in-breath and can determine whether this in-breath comes from the deep bodily intelligence of the brainstem or from a voluntary override mechanism. During the pause, the carbon dioxide levels in the blood slowly rise. One of the main stimuli that causes us to breath in is the increased acidity of the blood that occurs from the buildup of carbon dioxide. As the concentration of carbon dioxide in the blood increases and the ratio of carbon dioxide to oxygen also increases, chemical receptors in the aortic and carotid bodies and the brainstem detect this; and the inspiratory center in the brainstem stimulates the phrenic nerves so that we begin to breath in. This inspiration, when it is initiated by the respiratory centers in the brainstem, will respond to the exact qualities and quantities of breath that our physiology requires in that particular moment.

A metaphor that is often used to speak of the breath is 'waves in the ocean'. If one sits beside the sea and watches the waves, one will quickly notice that each

wave is completely unique, in size, in shape, and in timing. As the waves are determined by multiple factors under the influence of the entire ocean, tide, moon phase, wind, shape of beach, etc., so each in-breath, when orchestrated by the body's organic intelligence, is also a unique response to changing levels of activity, need for oxygen, emotional state, and expectation of immediate activity. A lower level of activity and a calm emotional state, for example, will call forth a predominately abdominal breath that moves into the belly, the lower back, and the sides of the rib cage; while, on the other hand, an agitated emotional state or a high level of activity will call for a more thoracic breath. If we rest into the pause at the end of the out-breath, the next wave that comes – the next in-breath – will be the body's perfect response to the needs of the moment. The sensation is that we are being breathed. There is minimal, if any, effort. If we override the pause and breath in before the inspiratory centers in the brainstem have had time to fire, our in-breath will be an act of doing.

The orientation direction that gives support for the in-breath, especially an in-breath that moves upward into the chest, is space orientation.

The Cycle

Each phase of the cycle of breath influences the next one. If the in-breath is pulled in, upstaging the impulse that comes from the brainstem, it is very likely that the out-breath will be pushed out forcibly instead of released; and the pause will be overridden again. As such, it is very easy to find oneself in a pattern of *doing* – pushing and pulling each breath instead of *allowing* the in-breath, releasing the out-breath, and resting into the pause. When we think of these two contrasting qualities of breathing, multiplied by 17,000-25,000 times per day, we begin to perceive the

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immense difference that this can make in life. Does one of our most basic life movements come from effort or ease? What is the underlying psychobiological belief system of someone who must work for each breath, as opposed to someone who trusts the basic physiology of the body?

Interventions for Working with the Cycle of the Breath

In this section, interventions for aiding the client with each phase of the cycle of breath will be offered. It is essential to remember that any change that creates more ease will come from an act of attention and willingness, rather than an act of will or imposition.

Interventions for the Out-breath

An out-breath is the best point of entry for most clients when working with the cycle of the breath. When we work with the client's out-breath, we are thinking of two issues: (1) allowing the breath to flow out without pushing or forcing and (2) giving the out-breath time to complete and settle into the pause.

We start by slipping our hands underneath the client's upper back and encouraging them to simply notice how the weight of their rib cage drops back into our hands as they breathe out. This is a natural movement; and as they bring their attention to it, it will increase. For some clients, this may be all that is necessary. As they notice the weight of the rib cage settling, they will let down and the length of the out-breath will increase naturally, as will the softening and relaxation of the rib cage on the exhale. Sometimes if the Rolfer

places a hand lightly on the rib cage (the Rolfer's hand is like a leaf that drifts down on the wave of the breath) and helps the client to feel the settling of the weight from above, this may further help the client to notice the differentiated movement of the ribs, rotating caudally, as the movement of exhalation passes through the rib cage. Eventually, if the client continues attending to this, they may begin to drop into the pause and rest there.

For other clients, it may not be so easy. Often there is a habit of pushing out the breath that is so deeply engrained that it feels natural and normal, and this habit is one that may take some time and persistence to address successfully. There is a simple way to know whether the client is letting go or pushing the out-breath. Any time the breath is forced out, we will hear it. This refers to even a very small sighing sound. When the sound of the out-breath is audible, this means that the auxiliary muscles have engaged; and the breath is being expelled instead of released. Often some education may be needed, as the audible out-breath is a hallmark of many yoga, exercise, and meditation practices that teach this as a way of relaxing.

It helps to have the client place their hands on the Rolfer's rib cage while the Rolfer releases the out-breath (hoping here that the Rolfer has embodied this quality!). The client should be able to feel the softening of the rib cage and the differentiated movement of each rib. Then have them place their hands on their own rib cage and feel how it hardens and solidifies as they push the breath out. Inviting the client to release the breath without making a sound (almost as if they were sneaking it past the Rolfer's hands), and then, when a softening, releasing breath occurs, validating it by

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asking them what it felt like, can be helpful. How was that breath different from their habitual way of breathing?

Helping the client to return again and again to the out-breath that softens and releases, getting them to notice how it feels, and identifying what they did differently is the road to help the breath to change. It does take time and persistence. When I work with someone who has this kind of breathing pattern, I will usually identify it and help them to notice it sometime in the first session; and I will return to it, even if only for a moment or two, in each subsequent session. Having them notice the relief and ease that occurs when they do let go is an important motivator for them to take on the daily path of playing with the breath, bringing their attention there, and patiently inhibiting the inhibition so that something different and more enlivening can occur.

Another challenge that can emerge when the client is invited to stretch the out-breath and then rest into the pause is that the client may feel as if they can't get enough air. This can obviously be frightening and a deterrent to further exploration. What is usually happening when the client presents this issue is that, over time, the client's system has become accustomed to a pattern of over-breathing (over-breathing, defined here as breathing more than the body's current need for oxygen). Over-breathing is often accompanied by a tendency to breathe through the mouth with high shallow thoracic breaths. When this has become a habit, the body undergoes a series of physiological changes that cause the client to feel as if they do not have enough air, even when the breath begins to come closer to the body's real need for oxygen. This is called hyperventilation syndrome and must be treated gently and slowly.

If this is the case, it will take time for the body to reset; and we must work within

the client's comfort zone by allowing the out-breath to release just a little bit longer than the habitual exhalation – long enough to begin to stimulate a change but not long enough to set off a fear response. Helping the client learn to allow the air in through the nose can also be helpful in this case, and we will discuss this more in the section on the in-breath. Stimulating the client's curiosity and desire to continue to engage this pattern over a longer period of time is also important. Something that may help to motivate this long-term commitment to playing with the breath is the fact that often patterns of over-breathing are accompanied by anxiety. Sometimes, with just a little shift in the breath, the client will be able to feel their anxiety levels drop.

Interventions for Working with the Pause

In the section above, we discussed the pause at the end of the out-breath and its importance to the entire cycle of the breath. To work with the client's pause, first and foremost, we need to help them to release enough of the out-breath that they can find the pause. This may be challenging for some of the reasons already mentioned and can require patience and persistence – two qualities that are richly rewarded if we can help the client to stay with it long enough to encounter the pause.

Once the client is able to release more of the out-breath, we begin to encourage them to rest into the pause. This encouragement happens when the Rolfer is attuned to the client's cycle of breath and able to give the client both verbal and touch cues, timed to the moment of the pause. These cues help them to feel the pause and allow it to stretch out – just a little longer – and then they can notice the sense of relaxation that appears as they surrender into it.

Interventions with the pause are simple: they consist of helping the client to rest into and feel the space between out-breath and in-breath, to notice its salutary effects on their system.

When the client is able to be present with and settle into the pause, the next inhalation will come from the body wisdom of the brainstem. An in-breath, directed by the impulse emerging from the brainstem, leads to an exhalation that is released instead of pushed, which leads in turn to a pause, and the whole system can reset once again. Soon we find ourselves in a rhythm where the breath expresses itself naturally with pleasure and ease.

Interventions for Working with the In-breath

When thinking of the in-breath, it helps to consider the three different segments of the body that can receive the breath: the belly, the chest, and the upper airways of the nose and nasal passages.

Chest and Belly Breathing

We will discuss thoracic and abdominal breathing – two qualities of breath that are different and complementary, which contribute, each in its own way, to balanced breathing.

When we begin to inhale, the central tendon of the diaphragm, which is high inside the rib cage, moves downward. A look at an anatomy book will show that the diaphragm looks a little like a child's drawing of a sun with fibers that attach both into the central tendon and all around the periphery of the rib cage. Initially, as these fibers contract, the fixed point of the movement is the attachments around the bottom edge of the rib cage and the mobile point (the central tendon and the center of the diaphragm) moves downward.

As the central tendon descends, placing pressure on the abdominal organs, the belly and lower back swell, the sacrum counternutates, and the pelvic floor widens and drops. This is the moment of abdominal in-breath (see Figure 2). Because of the movement of the sacrum, it stimulates the parasympathetic nervous system and has a calming effect. This first phase of the inspiration represents about 25% of our respiratory capacity.

At a certain point, the central tendon of the diaphragm can no longer move downward for two reasons: (1) it bumps into the subdiaphragmatic viscera, and (2) it reaches the elastic endpoint of a

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Figure 2: Abdominal in-breath.

chain of connective tissue that runs all the way from the fascial ring that attaches around the base of the foramen magnum to the diaphragm. This continuous fascial connection, which bears different names depending on its various attachments, runs from the foramen magnum down through the middle fascial layer of the cervical region; becomes the pericardial ligaments that bind the pericardium into the sternum and the front of the thoracic spine; and eventually becomes the fibrous base of the pericardium that attaches on the upper side of the central tendon of the diaphragm.

As the central tendon of the diaphragm moves downward in the first phase of the inhalation, this line of connective tissue stretches and eventually reaches capacity – about the same time that the diaphragm can no longer descend. At this moment, the fixed point/mobile point of diaphragmatic movement reverses. The central tendon stabilizes atop the pillar of the abdominal organs, and here the capacity for containment and stabilization offered by the transversus abdominus is essential! The perimeter of the rib cage begins to lift as the fibers of the diaphragm continue to shorten – only now with a different fixed point. It is during this second phase of the breath that the rib cage expands in all three dimensions; and the air flows upward into the thorax (see Figure 3).

Thoracic breath represents about 75% of our respiratory capacity and includes

a slight oscillation of the autonomic nervous system towards sympathetic activation. The sympathetic chain runs down both sides of the thoracic spine; hence our intercostal spaces are home to many sympathetic receptors. Thus, the breath brings an energizing quality as it moves through the thorax.

Balanced Breathing

For balanced breathing, we need both the calming and less active abdominal breath as well as the stimulation and higher oxygen capacity of the chest breath. Working with the client's inhalation often means working to stimulate the area into which the breath flows less habitually.

Belly Breather

When the client is a 'belly breather', often their chest will be quiet and have an expiration preference in its posture/positioning. Because 75% of our respiratory capacity is thoracic, we know that this client is not receiving their full allotment of air, and thus, is not fully adapted for vigorous activity – neither physical nor mental.

There are two issues to address with the belly breather. The first one is for the belly breather who pushes their belly outward with each in-breath. This is a client whose sacrum does not counternutate as the breath comes downward, nor does the lumbar region drop back to the table. Instead of there being a widening all around the lumbo-sacral-abdominal perimeter, there will be a distension of the belly wall forward with each in-breath. This particular pattern of breathing breaks down core stability by overstretching the transversus abdominus and disorganizes the viscera that rely heavily on the tonic presence of the transversus to keep their places.

Often, as the belly pushes forward, there is simultaneously a downward pull through the fascial chain that goes from diaphragm to foramen magnum; and the person's head pulls downward towards the center of the diaphragm. For this type of client, we need to help them learn the art of 'sacral breathing', allowing the downward movement of the breath not only into the belly but also into the lumbar region. Then we help them to feel how the sacrum rocks into counternutation as the breath comes in. When the expansion of the abdominal breath comes into the whole lower region, not just the front, the

client will then be able to profit from the moment of parasympathetic stimulation as well as prepare for the next phase of the in-breath, i.e., when it moves upward into the thorax.

Helping the client who pushes their belly forward with the in-breath may involve working with the rectus abdominus. Often with this profile of breathing, the client, besides having a prominent belly, will also have a breakdown in the smooth, wavelike coordination of the fibers of the rectus abdominus. Some of the packets will be overly fibrous; others will be atrophied and they will no longer work together. Working with touch to soften the fibrous packets and wake up the atrophied packets can be helpful. Working with the sacrum to help restore its rocking movement into counternutation (sacral base dropping posteriorly) as the breath flows downward is essential. Helping the client to again feel their weight dropping back into the table can be an important part of this.

The second issue to address with the belly breather is to help the air move up into the thorax, and this already brings us into the realm of chest breathing. When the air, as it moves downwards in the first phase of the in-breath, pushes into the abdomen and distends the abdomen forward, the transversus abdominus gets overwhelmed and stretched with a quality of stretching that becomes static and flaccid. It is then unable to offer its



Figure 3: Thoracic in-breath.

essential help to the movement of the air upwards into the thorax.

By contrast, when the movement of the breath downwards widens the whole lumbar-sacral-abdominal area, the transversus abdominus is gently stretched all through its extension from the insertion along the lumbar to the insertion in front. This, in turn, sets off a stretch reflex that causes the transversus to gently contract (just enough to stabilize the abdominal area) so that the central tendon of the diaphragm encounters the necessary support from the abdominal viscera and the fixed point of the diaphragm can shift. This allows the ribs to lift, and the rib cage to lengthen vertically and to widen side to side and front to back as the air flows up into the thorax. At this moment, not only does the fixed point of the diaphragm shift; but also, as the transversus abdominus comes online, the sacrum nutates. This, in turn, sends a wave of extension all the way up the spine to the head.

Aiding the In-breath to Move Upward

When the breath does not move naturally up into the thorax, one of the most common reasons is that the client's space orientation is not fully online. The reader may feel how space orientation or lack thereof contributes to the capacity of the breath to move upwards by trying this simple exploration – best done in a seated position with the spine straight and the weight of the upper body balanced easily over the sit bones.

Start by looking down at the ground around your feet. Breathe in and notice how far up into the rib cage your breath moves. If you continue to look down while breathing in, you will probably feel that only the bottom of your rib cage can fill.

Now let your eyes find the level of the horizon and gaze slightly above the horizon. This time, as you breathe in, notice how far up in your rib cage your breath can move. If you continue to orient just above the horizon, you will probably notice that air can come in all the way to the upper ribs now without exerting any extra effort.

So many of our clients who present with an expiration preference rib cage – the 'caved-in' chest – have a very simple underlying problem. Their attention and orientation are primarily ground focused. They do not bring their awareness to the upper portion

of their perceptive field or kinesphere. This is the kind of person mentioned above, who, when walking down the street, will not trip over irregularities in the sidewalk but will get their hat knocked off by low hanging branches. As in the exploration above, simply raising their eyes and their attention at the moment that the body prepares to breathe in will often be sufficient stimulus to get the air to move upward into the thorax.

For this intervention to be most effective, some education is necessary. While they are lying supine on the table (and then later while seated), the client's eyes can be used as an effective aid in directing their orientation. Just as the client begins to breathe out, we invite them to close their eyes and leave the eyes closed as the expiration completes and settles into the pause. The closed eyes facilitate orientation to ground – feeling the weight of the body resting into the table and dropping inside. Then, at the very end of the pause, just as the body begins to organize itself to breathe in, we invite the client to open their eyes and look very slightly upward (if their brow tenses or furrows, they have gone too far).

The gaze that most supports the upward movement of the breath is a wide gaze, more peripheral than focused, and is directed between 10°-20° above the level of the client's horizon. The open eyes that look gently upward facilitate orientation to space and thoracic breathing. Then, as the wave of the in-breath gets close to peaking, we invite the client to close their eyes again in preparation for the out-breath. This simple exercise is something that the client can do on their own, seated or lying down, to help potentiate the cycle of their breath. It is also something that we, as Rolfers, can teach them to do as we work to facilitate the change we hope to bring about with our hands.

Another interesting fact about breathing that may help our work with the tissue is to know that the iliocostalis, the most lateral of the erector spinae in the thoracic region, are designed to begin each in-breath with a pulse of activity. This contraction is timed to stabilize the back of the rib cage, so that, as the breath begins to move upward into the thorax, the ribs may lift and rotate upwards in front. Without this stabilization from the iliocostalis, much of the opening upward of the rib cage would get lost into movement in the back. However, since the iliocostalis are also part of the erector spinae group and, thus, part of

the muscles of posture, often they can get overinvolved in maintaining the erect posture of the spine in such a way that they lose their capacity for this pulsation of movement at the beginning of the in-breath. In this case, the iliocostalis will be like ropes that are holding all the time - without nuance or rhythm.

The Rolfer can help to restore this pulsating rhythm and, in so doing, also encourage the in-breath to move upward. The intervention is simple; but for it to work, timing is of the essence.

Intervention to Restore Rhythm

With the client lying supine on the table, the Rolfer slips their hands under the client's back and finds the iliocostalis that are on the same side of the client's body where the Rolfer is seated. In the pre-movement of the in-breath (which occurs at the very end of the pause), i.e., the moment that the body prepares to breathe in, the Rolfer lifts gently (in the direction of the ceiling) on the iliocostalis, simulating the pulse of contraction that would occur if these muscles had the ability to pulse. The Rolfer continues to stimulate the iliocostalis by almost pulling the breath into the thorax and taking the client's thorax anterior and then encouraging the fibers to differentiate throughout the inhalation. Near the peak of the in-breath (the moment when the body begins to prepare the out-breath), the Rolfer softens their hands and drops them back towards the table, creating a vacuum into which the client's back drops and settles for the duration of the out-breath and the pause. Then, in the pre-movement of the in-breath, the Rolfer stimulates the iliocostalis again. This intervention on the part of the Rolfer, along with the client directing their gaze to open the orientation that favors each phase in the element of the breath, can be a powerful help to the client in re-owning the movement of their breath.

Nose and Mouth Breathing

No conversation about breathing would be complete without mentioning the difference between nose and mouth breathing – and how this difference impacts our breathing, our physiology, and our structure.

To begin with, the reader may try a very simple exploration to feel some of the differences.

Breathe in through the mouth. Notice how the air moves into your lungs. If

you are like most people, you will feel that the air goes directly to the top part of the lungs, very quickly creating a sensation of over-fullness.

Now breathe in through the nose. What you will probably notice is that when the breath comes in through the nose, it goes to the bottom of the lungs, which then fill from the bottom upward, creating a deeper and more comfortable breath.

There are many reasons to favor breathing through the nose. The circuitous pathways within the nasal passages warm and filter the air before it reaches our lungs. The fact that our lungs fill from the bottom upward makes sure that the calming properties of the first part of our inhalation – the phase of abdominal in-breath – do not get skipped. Breathing through the nose slows down the inhalation, thus nipping in the bud many patterns of over-breathing that can lead to anxiety and, interestingly enough, to the sensation of lack of air. Breathing through the nose is indicated for people who suffer from asthma and other breathing difficulties.

However, when we decide to breathe through our nose, very often what happens is that we begin to use our will to control the movement, instead of finding ways to remove the obstructions that prevent the movement from occurring naturally.

Breathing through the nose happens most naturally when we allow the passageways at the base of our nose to widen and open, giving space for our orientation to move upward, and allowing our sense of smell to function fully. If the reader thinks of sitting in a garden in the spring with all the smells of freshly turned earth and the sweet fragrance of different flowers in the air, and then imagines that they are simply allowing the scents from the farthest ends of the garden to come into their nose, they will most probably get a sense of what a natural breath in through the nose feels like. They will feel the internal spaces in their face widen – along the cheeks, behind the eyes, and up into the forehead – as the air

flows into the maxillary, sphenoidal, and frontal sinuses, respectively.

In contrast, when breath is drawn in through the nose by an act of will, very often the nasal passageways narrow (a result of trying to suck the breath in through the nose). Frequently, this is accompanied by a pulling down of the chin that locks the floor of the mouth and hyper-straightens the cervical spine, thus cutting off the movement of the breath into the neck and head at the very same time that one is trying to get it to happen.

For the breath to be able to come in adequately through the nose, the head needs to be in a balanced position, i.e., where the weight and position of the occiput and chin balance each other like a seesaw that hovers in the horizontal position. The nose needs to be open and to be curious, and orientation is outward to the world. When this happens, the face relaxes, the eyes soften, and the breath comes in through the nose without effort.

Again, learning to allow – especially when there has been a long habit of ‘efforting’ and fear of lack of air – is not something that happens from one moment to the next. To make a lasting change in the habitual movement of breathing means making a commitment to acts of attention and curiosity again and again throughout the day for a significant period of time. At an even deeper level, it means developing a different kind of relationship with one’s body: a relationship where one listens and pays attention, and where one is continuously willing to pause for an instant, to simply not do the habitual and to allow an easier more fluid movement to come through.

To change a deep automatic pattern of movement, the author recommends to her clients that for a minimum of ten times a day, they stop what they are doing for less than a minute – just long enough to feel themselves at the coordinative crossroads between the habitual and the new – and give themselves the time and space to choose something different. This intervention

practiced over time will change even the deepest patterns and will lead the client to a more empowered relationship with their body, their movement, and their life.

Lael Katharine Keen has been teaching *Rolfing SI* for the *Dr. Ida Rolf Institute*® since 1995. She teaches *Rolfing SI* at the beginning and advanced levels and is also a *Rolf Movement Instructor*. She is one of the founding members of the *Brazilian Rolfing*® Association. In addition to teaching *Rolfing*, she is also senior faculty of the *Somatic Experiencing*® *Trauma Institute* where she teaches *Somatic Experiencing* at the beginning, intermediate, and advanced levels.

She has practiced *Ki-Aikido* since 1976 and taught it throughout North America and Brazil since 1980 holding a fifth-degree black-belt.

Lael is fascinated with movement and the process through which each of us becomes more truly ourselves by uncovering the movement which is our most intrinsic and authentic potential.

She continues to study and learn about what it is to be a human being and how we can heal at all levels, body, mind, soul, and spirit. She also holds certification as an *Anthroposophic Art Therapist* and recently completed a training in the *Bates Method of Vision*, which has helped her to deepen her understanding of how the way that we orient relates to structure, movement, perception, and health.

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