



Transversus differentiation (supine, sitting and standing) Transversus differensiering (liggende, sittende, stående)

The transversus abdominis is an important muscle for all musicians, even if it does not do any skeletal movements on its own. It supports all movement and breathing and is an important foundation for a good overall coordination of the torso and limbs. For example, if we want to sing or play stronger, it is very beneficial to start the initiation of the extra power needed in a deep place, deep in the belly, including the transversus abdominis muscle. This will offload other areas that tend to tense up for musical expression, such as the neck, shoulders and wrists. Besides, it tends to sound even more natural and powerful when the initiation of musical expression comes from a deeper place.

The transverse abdominis muscle also contributes to the last part of expiration, or to the control of controlled expiration (as in playing a wind instrument or singing) and in expiration against resistance (a mouth piece). However, it should be possible to activate this muscle independent of breathing, as it also functions to stabilize the torso when doing movement, like lifting the instrument, or lifting the arms toward the instrument. The intra-abdominal pressures created by this muscle (and some more muscles with it) helps with healthy movement, support and breathing. A functional transverse abdominis will actually anticipate all movements of the limbs by naturally activating 30-40ms before the action of for example lifting an arm. The specific awareness-exercises for this muscle can help to regain this natural function and therefore contribute to better overall coordination.

Step by step

LYING DOWN:

- Lie on your back with the feet straight out or knees bent, whatever is most comfortable for you
- Find the ASIS (the bone sticking out the most in front of your hip bone) and put two fingers in the soft area of the belly just inside of it. This is where you can feel if you are using the transversus abdominis most differentiated
- Dig in with the fingers
- Rest the other hand on the navel, without pressing



PART 1

- Draw the navel towards the spine and feel that the activation of the transversus abdominis is pushing the fingers by the ASIS upward
- Gradually go from activating it from 0% to 10%, all the way to 100% - and slowly back to 0% again. When you are at 40% - 100% you will feel more and more of the other abdominals join the contraction, also the rectus abdominis





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PART 2

- Find 20 – 30% activation and hold for 10 seconds (remember to breathe)
- Relax for 5 seconds
- Repeat 5 times
- If breathing is difficult, it could be that you should do the “Belly up and down” exercise for a while first, or try to back off on how much you are activating the transversus abdominis

SITTING:

- Find the SIAS (the bone sticking out the most in front of your hip bone) and put two fingers in the soft area of the belly just inside of it. This is where you can feel if you are using the transversus abdominis most differentiated
- Dig in with the fingers
- Rest the other hand on the navel, without pressing
- Release the belly out
- Draw the navel in by activating the lower part of the transversus and breathe normally
- Relax some seconds
- Slowly pull the navel in and out while pushing one knee forward to push the sitting bone into the chair (combined with the seated version of “The shuffle”). See if you can keep this tensegrity and connection to the ground, as though the power from the sitting bone is what helps to keep the transversus active. This way you don't have to hold



STANDING:

- Find the ASIS (the bone sticking out the most in front of your hip bone) and put two fingers in the soft area of the belly just inside of it. This is where you can feel if you are using the transversus abdominis most differentiated
- Dig in with the fingers
- Rest the other hand on the navel, without pressing
- Release the belly out
- Draw the navel and the lower part of the transversus in and breathe normally
- Repeat
- Slowly pull the navel in and out, while pushing one leg, and then the other away into the ground (“Standing shuffle”)



Torso

Belly up and down / Mageslipp

There are some muscles in the body that do not create movement in the joints and limbs but have functions such as creating internal pressures to support the spine in a healthy way. The transversus abdominis is one of them, which you will get to know in this exercise. The pressures created by this muscle (and some more muscles with it) help with healthy movement, support and breathing. You will see that activating this muscle will only make the muscle become shorter and create a sort of belt or stocking around the abdomen/belly that pulls the intestines and organs together (belly up). Now, the abdomen is like a balloon. The content is constant, there is nothing coming in or out of the belly even if it is changing shape in this exercise.

The transverse abdominis muscle also contributes to the last part of expiration, or to the control of controlled expiration (as in playing a wind instrument or singing) and in expiration against resistance (a mouth piece). However, it should be possible to activate this muscle independent of breathing, as it also has functions for stabilizing the torso when doing movement – like lifting the instrument, or lifting the arms toward the instrument. A functional transverse abdominis will actually anticipate all movements of the limbs by naturally activating 30-40ms before the movement can be seen on the outside. The specific awareness-exercises for this muscle can help to regain this natural function and therefore contribute to better overall coordination.

Step by step

- Stand on all fours
- Release the belly down towards the floor (let the belly out)
- Draw/pull the belly button inward, towards the spine
- Repeat a couple of times
- For a deeper sense of the exercise, visualize the transversus abdominis muscle while performing the exercise (as seen in anatomy pictures)





Hips and legs

Iliacus – sitting / lying down / standing

Iliacus – sittende / liggende / stående

In our culture we tend to sit a lot in chairs. This implies that our hips are in a flexed position often many hours every day. Even if this is the case, sometimes surprisingly we still cannot always control the movements of the flexion of the hips which can make it quite uncomfortable and straining to try to sit in a good position when playing and singing. To develop this ability is the purpose of this exercise. When we are sitting and playing, it can be extremely beneficial to have a well-developed movement ability in the hip joint, so that we can sit in an upright position without a sense of effort. This actually requires both a good function and strength in the iliacus, combined with an ability to relax the joint at the same time (see “Hip melter” seated version).

This exercise can help you to differentiate between the movements of “sitting up straight” by engaging primarily the back muscles (which can feel stiff and heavy) and the movement of moving the pelvis in a more forward tilted position and the spine following – resulting in sitting more straight, but effortlessly. Even if you train this exercise with the legs pointing straight ahead (for reaching the right muscle), you can adjust your leg position into what feels more natural for you as soon as you go to your playing position.

It can also help for the standing position, where we often tend to lean forward at the hip joint, resulting in passive lengthening of the hip flexors (including the iliacus) and a change in gravitational forces (see hip alignment in the “Standing like a mountain” – exercise).

If the seated version is too heavy because of the angle of the hip joint, you can open the angle by sitting higher, or perform the version lying down or the standing version.

Step by step

SITTING

- Sit on the sitting bones (see exercise for placement) not too far into the chair with the knees and legs parallel, a hip-width apart
- Put one hand on the iliac crest and the other on the spinous processes (the spine, the bones sticking out) of the lumbar spine so you can feel what's going on there
- Activate the transverse abdominis (deep abdominal muscle – see separate exercises for this muscle) and lift one leg at a time, up to 30 degrees beyond 90 degrees
- Make sure the pelvis and spine stay in the exact same position throughout the exercise



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Hold one hand on the hip bone



Hold one hand on the spine



Movement with leg

LYING DOWN

- Lie on your back with your feet on the floor, with a right angle in the knees
- Activate the transversus abdominis
- Lift one leg at a time, keeping the pelvis still and stable (see pyramidalis for a similar exercise. The difference is that in the iliacus-exercise you do not press the forefoot down as you lift the opposite leg up)

STANDING UP

- Lift one leg at a time as far as it goes, while keeping the pelvis still/stable





Sitting shuffle / Sittende skyveøvelse

As musicians we need support and power to play and sing. Not only relaxation. However, the great thing is that when we get support from the right places in the body, it will feel more relaxed, even if we are still using muscles to hold ourselves in an upright position to play. If we are playing technically demanding pieces, pieces with high intensity of emotion or pieces with jumps or quick changes, we usually need more support. It is possible to get this from using the sitting bones actively in the way you can do in this exercise. The “sitting shuffle” exercise is also great to give proprioceptive input to the brain, so that coordination generally is improved. The mental benefit that many musicians sense when proprioception is improved and the signals from the body/contact with the surface (in this case the chair) are increased, is a decrease of stress – for example in concert situations.

It is great to combine this exercise with the seated “Hip melter” exercise to avoid too much tension in the hips.

Step by step

- Sit on the sitting bones, on a level, firm surface like your classic piano stool (see sitting bone exercise)
- Push one knee in front of the other, then the other, back and forth
- Feel how the movement pushes you up to tall sitting
- Let the body follow naturally, without actively moving the torso
- After going back and forth maybe 10 – 12 times, stop the movement and sense into how it feels to sit now. Do you feel more weight going into the chair? More contact between the sitting bones and the surface of the chair?



Sitting shuffle: one knee forward, sitting bone down, body rises up

PART 2 – implementing into playing

- Find your favorite sitting bone (the one you feel best or is most comfortable), move and hold this knee forward (without tensing up in the hip joint) so the preferred sitting bone digs into the chair



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- Lift your instrument and feel the extra weight into this sitting bone even just by lifring your arms/instrument
- Switch legs and see how that feels
- While playing, go back and forth slowly, maybe a bar of music per leg to begin with
- See if you can use this movement to create the phrasing and sound that you want. The musical initiative can come from the sitting bones instead of stabilizing and tensing up in other places of the body, for example shoulders or thrusting the ribs forward
- As you get used to actively engaging the sitting bones, let your body have this more as a natural possibility for expressing music than something that you feel that you have to do very consciously

Advanced

- Instead of pushing the knees forward, focus on only pushing away from the chair with the sitting bones
- Feel that the body is rising up from the sitting bone
- Try this while playing



Pushing the right knee forward to connect to the right sitting bone



Hands

The tent / Teltet

Musicians tend to be weak in the intrinsic muscles of the hands (the muscles that attach inside the hand and do not cross the wrist), often leading an overuse of the hand and finger muscles that are in the forearm. First it is important to get a general overview about where the muscles are located, and what muscles does which tasks. Then we can start specifically helping the muscles that need more strength. This will be slightly different for each person, but very often, most musicians will benefit from becoming more aware of the interosseus and lumbricals, that create movement and stabilization of the hand. This can potentially free the wrist and make the hand more independent and secure.

Interosseus: This muscle lies between the bones in the middle hand and crosses the base of the fingers – the MCP joints. Therefore, it does movements of the MCP joint by spreading the fingers apart, sideways, and moving them together again. This is important for instruments where you need these sideways movements to hit the right key or right placement on the string. Besides, together these muscles help to create the bridges of the three-dimensional hand.

Lumbricals: These are involved in multiple finger movements, and they should also anticipate all movements of the finger by preparing for accuracy of any movement. The primary movement it does is flexing the MCP joint, and it is also involved in flexing the DIP as well as extending the PIP and DIP because it has attachments at the extensor tendons and flexor tendons in the forearm. In other words, a complex but genius design, that makes us able to fine tune the finger movements and keep a certain lengthening (or tensegrity) while playing. This is possible to observe in great players, how they in a subtle but accurate way lengthen their fingers into the keys, the keyboard or the fingerboard.

This exercise is the beginning of training these muscles, and it also shows how the construction of the hand is three dimensional and not flat, when we activate the intrinsic muscles of the hand.

Step by step

- Put your hand flat on a table, make sure the wrist is also on the table
- Spread the fingers wide to activate the interossei muscles initially
- Slowly pull straight fingers towards your carpals, as if pulling through mud (to activate the interossei and lumbricals), the knuckle joints come up (*Fig 1*). The thumb moves a little bit inwards and has a slight force into the table
- Make sure the fingers are lengthening and that the carpals and wrist stay on the table
- Loosen the wrist by moving it a bit sideways back and forth (*Fig 2*)
- If you press on top of the knuckle joint, it should feel completely stable, yet pretty effortless to hold the shape of the hand
- Sense that you are using the muscles in the palm. Hold for 10 seconds or as long it is comfortable and rest the hand. To train your sensory nerves, feel into the hand and check if the hand that you trained feels different than the other hand. If any pain, take a break from this exercise until it is pain free to do it.



Fig 1



Fig 2