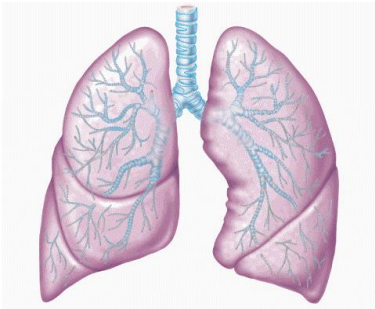




## BREATHING TECHNIQUES



*“Respiration is primarily regulated for metabolic and homeostatic purposes in the brainstem. However, breathing can also change in response to changes in emotions, such as sadness, happiness, anxiety, or fear. Final respiratory output is influenced by a complex interaction between the brainstem and higher centres, including the limbic system and cortical structures. Respiration is important in maintaining physiological homeostasis and co-exists with emotions.”<sup>i</sup>*

Controlling your breath to control your mind through various breathing practices has been around for centuries. Science has more recently shown that breathing techniques are not just a New Age idea rooted in pseudoscience, but in fact, can have significant effects on one’s respiratory, cardiovascular, cardiorespiratory and autonomic nervous systems,<sup>ii</sup> and can change one’s biochemistry, neurochemistry and even one’s physiology! So if you want an alternative or complementary approach to pharmaceutical drugs for your anxiety or stress, the effectiveness of breath-work cannot be overstated.

### THE SYMPATHETIC NERVOUS SYSTEM (SNS)

During stress or an emergency (“fight-flight-freeze”), when the Sympathetic Nervous System (SNS) responds, both our breathing rate and pattern can change. Instead of breathing slowly from our lower lung areas, we begin to breathe rapidly and shallowly from our upper lung areas. If during this time, we are not physically exerting ourselves, then it can produce a phenomenon called hyperventilation. This explains many of the uncomfortable symptoms experienced during a panic attack or in stressful situations:

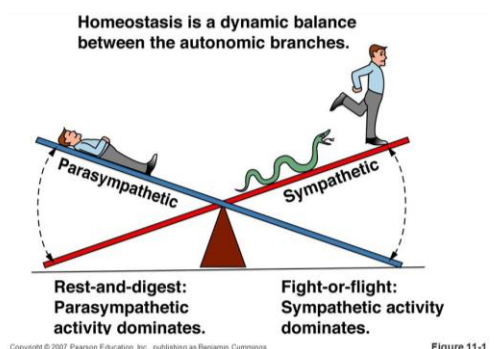
- dizziness
- shortness of breath
- a lump in the throat
- tingling or numbness in the hands or feet
- nausea
- confusion

The good news is that by changing your **breathing** you can **reverse many of these symptoms**. By shifting your breathing rate and pattern, you can stimulate your body’s **Parasympathetic Nervous System (PNS)** response. This is your body’s equally powerful and opposite system to the Sympathetic Nervous System (SNS), and is often called the relaxation response (“rest & digest”) state.

### PHYSICAL CHANGES OCCURRING DURING THE ‘PNS RESPONSE’

- oxygen consumption decreases
- breathing slows
- heart rate slows
- blood pressure decreases
- muscle tension decreases
- growing sense of ease in body, calmness in mind

As you can see, all of the primary changes of the Emergency/SNS Response are reversed in this process. One of the differences in these two physical responses is – TIME!





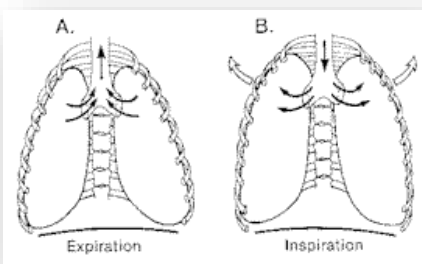
The Emergency/SNS Response takes place virtually instantly, in what is called a mass action (ie: all the changes occur together). Once we flip on that emergency switch, it can then take a while for the body to respond to our calming skills.

For this reason, it is important for you to know what specific skills will reverse this Emergency/SNS Response and will help calm your body and clear your mind – like the following breathing techniques.

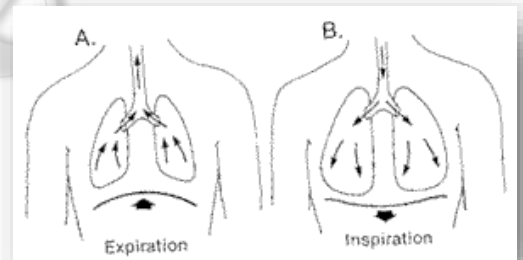
## CALMING YOUR BREATH = CALMING YOUR MIND

People who are anxious, tend to breathe in their upper lungs (upper chest & shoulders) with shallow, rapid breaths, instead of breathing into their lower lungs (lower chest & diaphragm). This is one contribution to hyperventilation: shallow, upper lung breathing.

**THE DIAPHRAGM:** is a sheet-like muscle, which separates the chest from the abdomen (liver stomach etc.). When you fill your lower lungs with air (INSPIRATION), the lungs push down on the diaphragm and cause your abdominal region to protrude slightly. When you breathe out (EXPIRATION), the diaphragm moves upwards pushing the air out of your lungs. Your stomach should look as though it is expanding and contracting with each diaphragmatic breath.



*2 /two kinds of breathing, upper chest or thoracic [left], and lower chest or diaphragmatic [right].*

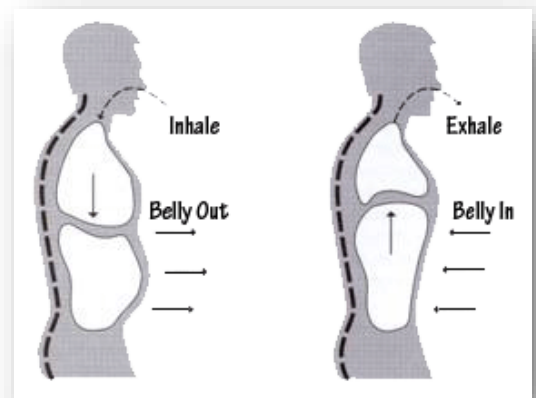


You can do these breathing exercises

ANYWHERE and ANYTIME – but if you want to get the most out of it or if you are feeling very anxious or stressed out – then

rather find a time and space to relax and focus completely on your breathing and take as long as you need to calm your SNS Response down to a more PNS state! For starters:

- Sit or lie on your back in a comfortable position
- Tuck a pillow under your head and/or your knees if your lower back is hurting
- As you take an IN breath (usually through the nose) - feel your chest/belly/abdomen rise and gently push outwards in a 360 degree expansion down and around.
- As you breathe OUT (usually through the mouth) – feel your chest/belly/abdomen gently pull inwards and a 360 degree contraction up and around.
- You may also need to initially close your eyes and place one hand on your stomach area and one on your chest, to help you concentrate on getting the co-ordination correct of the: IN/PROTRUDE-(pause)-OUT/FLATTEN.
- Watch your shoulders don't lift towards your ears!
  - Sounds pretty easy... but you may need to practice this in front of a mirror for quite a few sessions, to get it correct – because you may have been breathing incorrectly for decades!





## 1. NATURAL BREATHING – ABDOMINAL BREATHING

This is a good way to breathe **all day long**, unless you are involved in physical activity. IE: you should practice breathing this way all day long, since it provides for sufficient oxygen intake and controls the exhalation of carbon dioxide. This breathing pattern is generally **OPPOSITE** of what happens automatically during anxious moments.

### Natural Breathing

1. Gently and slowly inhale a normal amount of air through your nose, filling only your lower lungs. (*Your abdomen area should protrude slightly while your upper chest expands outwardly & your shoulders remain still.*)
2. Pause for a ½ / half to 1/ one second.
3. Exhale easily allowing your diaphragm to push the air out of your lungs slowly (*Your abdomen should flatten or go back to a relaxed 'normal'/slightly tightened position & your shoulders remain still.*)
4. Continue this gentle breathing pattern with a relaxed attitude, concentrating on filling only the lower lungs and relaxing your shoulders.

## 2. DEEP CALMING BREATH - DEEP DIAPHRAGMATIC BREATHING

This type of breathing can be used during times when you are **feeling very anxious or stressed**. It is a powerful way to control hyperventilation, slow a rapid heartbeat, reduced blood pressure and promote physical comfort and a feeling of calm/peace.

### Deep Calming Breath

1. Take a long, slow **INHALE** through your nose, first filling your lower lungs, then your upper lungs
2. **Hold** your breath to the count of 3 / three
3. **Exhale** slowly through pursed lips (or make a soft sound in your throat), while you focus on relaxing the muscles in your face, eyes, jaw, shoulders, and stomach
  - (*This should take longer than your IN breath*)

Practice this Calming Breath at least **10x a day** for several weeks, so that when you need a quick tool to help you calm down during a panic or anxiety attack, you will be more familiar and comfortable with the process.

Use it during times of transition or whenever you want to let go of tension and begin to experience a sense of calmness. This will help you become familiar and comfortable with the process. Use it any time you begin to start feel anxiety or panic building.

Dr Ellie Drake explains this in a [VIDEO](#) and how this supports your Vagal nerve tone (Parasympathetic branch)



### 3. CALMING COUNTDOWN

This breathing technique takes about ~90 / ninety seconds to complete, instead of ~30 / thirty seconds. You will need to spend that time concentrating on a specific task, instead of paying attention to your worried/anxious/stressed thoughts. If you can let some time pass without such intense focus on your fearful thoughts, you will have a **better chance at controlling those thoughts, as well as giving your body/biochemistry the chance to calm down**. When some time has passed, you will then feel less anxious than you were before.

#### Calming Countdown

1. Take a long, deep breath and exhale it slowly while saying the word "relax" silently "in your head" *(once or a few times)*
2. Close your eyes
3. Let yourself take 10 / ten natural, easy breaths. Count down with each exhale, starting with 10 / ten *(you may want to repeat the number and the word "relax" for the length of each out breath – if your mind is wandering)*
4. While you are breathing comfortably, notice any tensions, perhaps in your jaw or forehead or stomach. Imagine those tensions loosening
5. When you reach 1 / one, open your eyes again

Repeat as often as you need

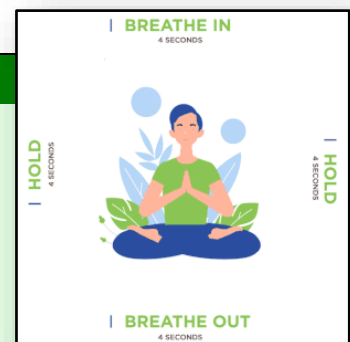
### 4. BOX BREATHING TECHNIQUE

This breathing technique is easy, quick and even approved by the USA Navy SEALs! It is effective for anxiety, insomnia, pain management and even during labour! Box breathing with a **4-4-4-4** ratio has a net neutral energetic effect – it is not going to invigorate you or put you into a sleepy relaxed state, but it will, make you alert and grounded, and ready for calm action.

#### Box Breathing

1. Breathe in for 4 / four seconds
2. Hold that breathe for 4 / four seconds
3. Breathe out (exhale) for 4 / four seconds
4. Hold your lungs empty for 4 / four seconds

*It only takes 1 / one minute to repeat the cycle 3 / three times.  
That is often enough to make a big difference*



This one is great at work/school, or if preparing to go on stage to speak or give a presentation, or even just asking someone out on a date!



## 5. COHERENT BREATHING<sup>iii</sup>

Coherent breathing is probably the most scientifically studied technique. The goal is to breathe at a rate of 5/five breaths per minute, which generally translates into inhaling and exhaling to the count of six (no long pauses like Box Breathing). If you have never practiced breathing exercises before, you may have to work up to this - practice slowly, starting with inhaling and exhaling to the count of three and working your way up to six.

### Coherent Breathing

1. Breathe in / **INHALE** for 5 / five seconds – slowly expanding your abdomen as the diaphragm pulls air into the lower lungs + take 1 second before you...
2. Breathe out / **EXHALE** for 5 / five seconds (slowly contracting your abdomen as the diaphragm lifts and pushes air out of the lungs)

It is recommended that you practice this pattern for 10 - 20 minutes a day.

## 6. ROCK & ROLL BREATHING<sup>iii</sup>

Great stress reliever and has the added benefit of strengthening your core.

### Rock & Roll Breathing

1. Sit up straight on the floor or on the edge of a chair.
2. Place your hands on your abdomen.
3. As you **INHALE**, lean forward slightly and expand your belly.
4. As you **EXHALE**, squeeze the breath out and curl forward while leaning backward. Try to EXHALE all your breath completely
5. Repeat 20 times.

### Rock & Roll Breathing (Yogic breathing)



## 7. ENERGIZING “HA” BREATH<sup>iii</sup>

When the mid-afternoon slump hits, stand up and do some quick breathwork to wake up your mind and body.

### Energizing “HA” Breathing

1. Stand up tall, elbows bent, palms facing up.
2. As you inhale, draw your elbows back behind you, palms continuing to face up.
3. Then exhale quickly, thrusting your palms forward and turning them downward, while saying “Ha” out loud.
4. Repeat quickly 10 to 15 times



## YOGA BREATH TECHNIQUES

Yoga breathing techniques are also known as “*Pranayama*”. The word pranayama comes from the Sanskrit “prana” (breath) + “ayama” (suspension / control) representing the “Control of Breath”. Pranayama is one practice that has been found in several studies, to be effective to human physiology in many ways.<sup>iv</sup> Different types of pranayama produce specific physiological responses and it greatly depend on type and duration of the practice.<sup>v, vi, vii</sup>

### 8. BUMBLE BEE BREATH

The bee breath is another yoga breathing technique. Its Sanskrit name is *Bhramari Pranayama*, but in English, it could also be called Bumble Bee, Humming Bee or just Bee Breath. It is a slow-paced breathing technique that is accompanied by a humming bee sound. It can assist with reduction of stress levels, heart rate and improvement in cognition.<sup>iv</sup> It also potentially can stimulate the Vagus nerve and the vibrations can assist with mucous shifting from chest and sinuses.

#### Bumble Bee Breath

1. Take a deep breath **IN** through your nose
2. Breathe **OUT** your nose with your mouth closed, while you **hum** like a bee
3. Repeat this breathing sequence for a few minutes



### 9. LION'S BREATH

Lion's breath or Dragon's breath. This breathing exercise originates in a yoga meditation position, *Simhasana* (Lion Pose) and can also be practiced in a Viranasa or Hero pose. For comfort as a start, I suggest being on all fours on the floor.

#### 7. Lion's Breath

1. Position yourself on all fours on the floor (*palms forward or backwards*)
2. Take a deep breath **IN** through your nose
3. **Open** your **mouth** as wide as you can (*releasing those tight clenched jaw muscles*)
4. Stick your **tongue** out as far as you can (*releasing deeper muscles*)
5. Open your **eyes** wide
6. And breath **OUT** your mouth forcefully (like a lion's roar)



This type of breathing technique is helpful in releasing anger and frustration, as well as being a good indicator of tension being held in the jaw.



### 10. ALTERNATE NOSTRIL BREATHING (*NADI SHODHANA*)



Concentrate your mind solely on your breath for the best results.

The breathing sequence should be: left nostril closed, both nostrils closed, right nostril closed, both nostrils closed, repeat.

### Alternate Nostril Breathing

1. Put your **left**-hand palm up, in your lap
2. Place your **right**-hand pointer and middle fingers on your forehead, between your eyebrows
3. Take a deep breath while closing your eyes, breathing only through the nose. Inhale and exhale for 30 seconds.
4. Now, close your **right** nostril with your right-thumb and inhale through your left nostril
5. Now, close your **left** nostril with your little-finger and ring-finger so **both** nostrils are held closed; hold your breath at the top of the inhale for a brief pause.
6. Open your **right** nostril and release the breath slowly through the right side; pause briefly at the bottom of the exhale.
7. Inhale through the **right** side slowly.
8. Hold **both** nostrils **closed** (with little finger & ring finger, and thumb).
9. Open your **left** nostril and release breath slowly through the **left** side. Pause briefly at the bottom.
10. Repeat **5-10 cycles**, allowing your mind to follow your inhales and exhales.

In case you were wondering, you'll have to breathe through your mouth when both nostrils are closed.

## 11. THE ABDOMINAL ROLL

### The Abdominal Roll

1. Either stand or sit on a mat.
2. Exhale completely, and then close the air passage in your throat to perform a "mock inhale" with your chest.
3. Relax your abs and hold your breath. Attempt to inhale with your abs relaxed.
4. Release the "mock inhalation" and allow the abs and chest to relax. Exhale and then repeat for 3-5 cycles.



## 12. THE “BELLOW” BREATH (*BHASTRIKA PRANAYAMA*)

This breathing technique will invigorate but can also cause hyperventilation if not done correctly. Caution with this technique if you are already quite anxious - as it can heighten anxiety in some people.

### The “Bellow” Breath

1. Sit on a mat or chair with your palms relaxed on your knees. Your head and spine should be cantered forward.
2. Relax your stomach muscles and close your eyes.
3. Inhale and exhale forcefully, but comfortably. You want to make sure your breath is swift but rhythmic.
4. Repeat for 5 minutes.

## 13. THE “STOMACH VACUUM”

Known as the “*abdominal drawing-in manoeuvre*” (ADIM) in clinical settings, this breathing exercise targets your inner most abdominal muscles, primarily the transverse abdominis and internal oblique abdominis. It is ideally, done on an empty stomach.

### The “Stomach Vacuum”

1. Lie down on a mat with your knees bent and feet flat on the floor. Keep your hands at your sides with your palms face down.
  - a) Can also be done on all fours
  - b) or in a bridge position
  - c) or in a partially seated position (*keep neck & shoulders relaxed*)
2. Inhale deeply through the nose and exhale as much as you can - through the mouth.
3. As you exhale - imagine pulling your navel / bellybutton as close to your spine as possible.
4. Hold this position for 15 seconds (beginner) - 60 seconds (advanced)
5. Release it by inhaling through the nose.
6. Relax your stomach muscles and close your eyes.
7. Inhale and exhale forcefully, but comfortably. You want to make sure your breath is swift but rhythmic.
8. Repeat for 5 times or continue up to 5 minutes.



*Some people believe this will help to burn abdominal fat and create a flat tummy / abs – it is definitely better than straining your neck doing crunches!*

*Results from some studies also suggest a possibility that ADIM might be effective to improve the neuromuscular control of trunk flexors for the treatment of non-specific lower back pain, because lumbar trunk stability is effectively accomplished through the increase in abdominal pressure.* <sup>viii, ix</sup>

## 14. THE 4-7-8 BREATHING EXERCISE



The 4-7-8 breathing technique (or Calming Breath) is said to have been “invented” by [Dr. Andrew Weil](#). It is a fairly easy exercises to do. It is based on the ancient yogic technique of pranayama, mentioned above.

You can practice this breathing technique anywhere, but I suggest you begin your practice sitting straight in a comfortable chair. This exercise can act as a natural tranquilizer for an overtaxed nervous system.

### The 4-7-8 Breathing Exercise

1. To begin, put the tip of your tongue against the tissue just behind your front teeth and keep it there throughout the exercise.
2. Fully exhale through your mouth around your tongue, making a whooshing sound.
3. Then close your mouth and inhale through your nose to a count of 4 / four.
4. Next, hold your breath for a count of 7 / seven.
5. Finally, exhale through your mouth to a count of 8 / eight, making a whooshing sound on the out breath.
6. This counts as 1 / one breath. Repeat 3 / three more times.

You might have trouble holding your breath or exhaling in the beginning, so just go at a comfortable pace that suits you - **but remember to keep the 4:7:8 ratio.**

Try to do 4 / four sets 2 / twice per day in the beginning, and then add more as needed. Think of this as a medicine you can take as often as you need without fear of overdosing.

in 4

hold 7

out 8

## 15. WIM HOF BREATHING TECHNIQUE

Relax

Feel

Observe

RELAX: A relaxed body on an empty stomach absorbs more oxygen.

FEEL: Don't get too hung up on counting, feel how your body responds.

OBSERVE: Record your thoughts and retention times (*but remember it's not a competition*)

### Wim Hof Breathing Technique

1. Get Comfortable.
2. Start to breathe. Fully in (nose/mouth) then let go (mouth), continuously, 30-40 times
3. Last breath - breathe out, emptying the lungs. Hold for as long as you can (no force)
4. After the hold, take a deep breath in and hold for 10-15 seconds
5. Repeat the entire process for another 2 or 3 rounds

**WARNING: ALWAYS DO THE BREATHING EXERCISE IN A SAFE ENVIRONMENT (E.G. SITTING ON A COUCH/FLOOR) AND UNFORCED. NEVER PRACTICE IT BEFORE OR DURING DIVING, DRIVING, SWIMMING, TAKING A BATH OR ANY OTHER ENVIRONMENT/PLACE WHERE IT MIGHT BE DANGEROUS TO FAINT. THE BREATHING EXERCISE HAS A PROFOUND EFFECT AND SHOULD BE PRACTICED IN THE WAY IT IS EXPLAINED.**

ADDITION....



## ANCIENT JAPANESE METHOD

<https://youtu.be/lFdcCXmGpy4>

## FINAL THOUGHTS ON BREATHING TECHNIQUES TO REDUCE STRESS & ANXIETY

I hope you have gained some valuable information on breathing techniques for stress and anxiety.

There are a wide variety of breathing exercises / techniques available – I have only mentioned a few. You can practice all or some of these techniques - choose whichever ones work best for you, but remember that for beginners, the traditional or 4-7-8 breathing technique and the Box breathing technique will likely serve you the best.

The best part is, **you can practice these techniques anytime** you feel anxious or stressed. You can also use them as a tool to help you get a better night's sleep and fall asleep faster. You can utilize them to de-stress before a presentation at school or work or during any part of your day where you feel stress building.

The anxiety you deal with might seem debilitating or all-encompassing, but don't feel helpless. These techniques as well as... EFT, TRE, Visualisation, CBT - Cognitive Behavioural Therapy, DBT - Dialectic Behavioural Therapy etc.....are all very powerful healing tools.

As you apply these skills, **keep 2 things** in mind:

1. Our breathing is partially dictated by our current thoughts - so make sure you also work on **changing your NEGATIVE thoughts**, (focus on POSITIVES) as well as your breathing, during an anxiety or panic attack.
2. These skills work to the degree you are willing to concentrate on them! Put most of your effort into **NOT thinking about anything else** while you are following the steps of these skills! **ie: NOT** your worried thoughts, NOT what you will do after you finish the breathing exercise, NOT how good you seem to be at this skill etc

**REMEMBER** - the power of the human mind and body to heal itself is nothing short of amazing, and breathing techniques are the perfect way to demonstrate this!





## REFERENCE SOURCES:

- ii Homma I, Masaoka Y. Breathing rhythms and emotions - Review Article. *Exp Physiol* Aug 2008;93(9):1011–1021. <https://doi.org/10.1113/expphysiol.2008.042424>
- iii Russo MA, Santarelli DM, O'Rourke D. The physiological effects of slow breathing in the healthy human. *Breathe (Sheff)*. 2017;13(4):298-309. doi:10.1183/20734735.009817 [\[PMC Free article\]](#)
- iii Lesley Alderman, L. New York Times Article. Breathe. Exhale. Repeat: The Benefits of Controlled Breathing. Nov 2016. [ONLINE] <https://www.nytimes.com/2016/11/09/well/mind/breathe-exhale-repeat-the-benefits-of-controlled-breathing.html>
- iv Kuppusamy M, Kamaldeen D, Pitani R, Amaldas J, Shanmugam P. Effects of *Bhramari Pranayama* on health - A systematic review. *J Tradit Complement Med*. 2017;8(1):11-16. Published 2017 Mar 18. doi:10.1016/j.jtcme.2017.02.003
- v Sharma V.K., Trakroo M., Subramaniam V., Rajajeyakumar M., Bhavanani A.B., Sahai A. Effect of fast and slow pranayama on perceived stress and cardiovascular parameters in young health-care students. *Int J Yoga*. 2013;6(2):104. [\[PMC free article\]](#) [\[PubMed\]](#) [\[Google Scholar\]](#)
- vi Turankar A., Jain S., Patel S. Effects of slow breathing exercise on cardiovascular functions, pulmonary functions & galvanic skin resistance in healthy human volunteers – a pilot study. *Indian J Med Res*. May 2013;137(5):916–921. [\[PMC free article\]](#) [\[PubMed\]](#) [\[Google Scholar\]](#)
- vii Bhavanani A.B., Raj J.B., Ramanathan M., Trakroo M. Effect of different pranayamas on respiratory sinus arrhythmia. *J Clin Diagn Res JCDR*. 2016;10(3):CC04. [\[PMC free article\]](#) [\[PubMed\]](#) [\[Google Scholar\]](#)
- viii Hides, J. et al. An MRI investigation into the function of the transversus abdominis muscle during “drawing-in” of the abdominal wall. *Spine* 31, E175-178. <https://doi.org/10.1097/01.brs.0000202740.86338.df> (2006).
- ix Kaping, K., Ang, B. O. & Rasmussen-Barr, E. The abdominal drawing-in manoeuvre for detecting activity in the deep abdominal muscles: Is this clinical tool reliable and valid? *BMJ Open* 5, e008711. <https://doi.org/10.1136/bmjopen-2015-008711> (2015).