



Breathing 101

Our Autonomic Nervous System governs all of the processes in our body that we need to keep ticking along, day in and day out, without having to think about it.

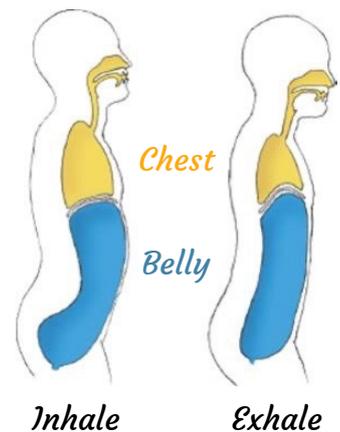
This includes the breath, but the really interesting thing about the breath is that it is the only autonomic function that we are able to consciously take control of ourselves.

What do You Mean Belly Breathing?

From a functional standpoint, breathing can be thought of as the process of air coming into the lungs and air leaving the lungs, all made possible by a shape change in our lungs; expanding to let air in and contracting as air is let out.

In order for our lungs to change shape to their full capacity, we need our whole chest (thoracic cavity) AND our belly (abdominal cavity) to change shape. Many of us take shallow breaths, using only a fraction of our lung capacity and primarily breathing into the top of 1/3 of our lungs with the belly moving little or none at all.

To really fill up our lungs and use the whole capacity, our bellies also need to move to make some space for further expansion. And this is where the term "belly breathing" was coined, by whom I do not know.



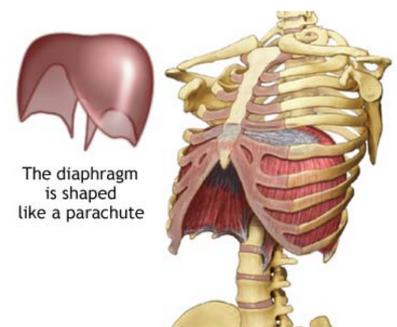
Chest : changes shape and volume.

Belly : changes shape but cannot change volume.

Our Primary Breathing Muscle

The diaphragm is a large, dome shaped muscle that sits between the chest and the belly. It is our primary breathing muscle. On the inhale it flattens out pushing the belly down to create more space for the lungs to fill up. On the exhale it returns to its dome shape as air leaves the lungs.

The chest cavity can be thought of as an accordion, with the volume and the shape changing as we breathe. The belly is more like a balloon. It is sealed on all sides and so cannot change volume and therefore works solely with shape change.





Practices

1 Building Awareness



Sit or lie in a comfortable position. Look for balance between stability and strength; find length and strength through the spine and ease and softness through the muscles and skin.

Place both hands on the belly or one on the chest and one on the belly.



Breathe normally and notice the movement of the chest and belly under your hands.

Things to look out for and try out:

- The chest / ribs primarily expand out to the sides.
- The belly primarily expands out to the front.
- Both have some expansion in all directions.
- See if you can visualise the movement of the diaphragm as it flattens on the inhale and domes up again on the exhale.

2 Finding Balance

IN = EX

There's no right or wrong.
Find your comfortable count.

2 = 2

3 = 3

4 = 4

5 = 5

6 = 6

Begin to take conscious control of your breath. First notice any differences between the Inhale and Exhale:

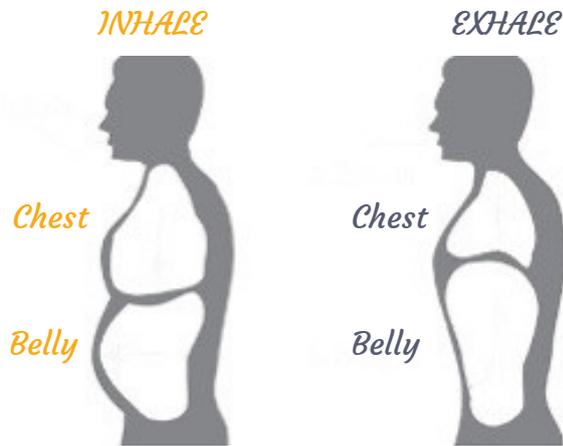
- Length
- Pace
- Quality (rough / smooth / catchy spots)

Now focus on the length of the breath and bring the Inhales and Exhales to an even rhythm. You may speed one up and slow the other down to do this.

Add an equal count to the Inhale and Exhale and settle into a rhythm that allows the breath to be long and smooth. If it is strained by the end of the Inhale or Exhale, reduce the count by one until you get to an easy long, smooth rhythm. If it feels too easy increase the count and find that spot where it feels long and smooth within comfort.

Practices

3 Exercising the Primary Mover



Keep one hand on the belly and one on the chest. Dividing both the inhale into two parts.

Inhale : 1st half breathe into the chest while keeping the belly still. 2nd half continue the breath into the belly.

Exhale : 1st half draw the belly in. 2nd half continue and let the chest empty.

Try focussing on the diaphragm through the breath:

- **Inhale 1st half** - visualise and feel the diaphragm holding firm as the chest expands outwards. Feel the core muscles gently engaged to keep the belly still.
- **Inhale 2nd half** - visualise and feel the diaphragm release and flatten as the belly and waist expand to create space.
- **Exhale 1st half** : visualise and feel the diaphragm dome up as the belly draws in. Feel the muscles around the chest gently engaged to keep the chest still.
- **Exhale 2nd half** : visualise the the diaphragm holding firm in its domed shape as you release and relax the muscles around the chest feeling the lungs empty fully.

To increase the control and connection with the visualisation work with a breath ratio. Try a ratio of 2:2:2:2 *

4 Double Up the Exhale

$$2 = 4$$

$$3 = 6$$

$$4 = 8$$

$$5 = 10$$

Bring the hands to rest gently on the thighs and sit up tall. Come back to an even length on inhale and exhale.

Increasing the exhale and decreasing the inhale work towards bringing the breath to a ratio of 1 : 2 (Inhale : Exhale), exhale double the length of the inhale.

2:2:2:2 Ratio

Inhale : Chest (Count 2) : Pause (Count 2) : Belly (Count 2) : Pause (Count 2)

Exhale : Belly (Count 2) : Pause (Count 2) : Chest (Count 2) : Pause (Count 2)



Benefits

1 Building Awareness

Awareness practices help us to reconnect with our bodies, Simply drawing awareness to our breath can help us slow down and begin to prepare ourselves to relax and allow for more focus.

2 Finding Balance

The inhale is connected to our sympathetic nervous system (SNS) which is responsible for the stress, or fight and flight response, while the exhale is connected to our parasympathetic nervous system (PNS) which is responsible for our rest and relax state.

Noticing our breath many of us will find that we are breathing primarily into our chest and our exhales are relatively short.

Bringing our breath into balance helps to bring balance back into our nervous system which ultimately helps us regulate better and find more calm when we are not directly in the face of real danger.

3 Exercising the Primary Mover

Connecting to our diaphragms is great for improving our breath function in our day to day lives, even when we are not paying attention to our breath. It is also like "basic training" to prepare for learning other breathing techniques.

4 Double Up the Exhale

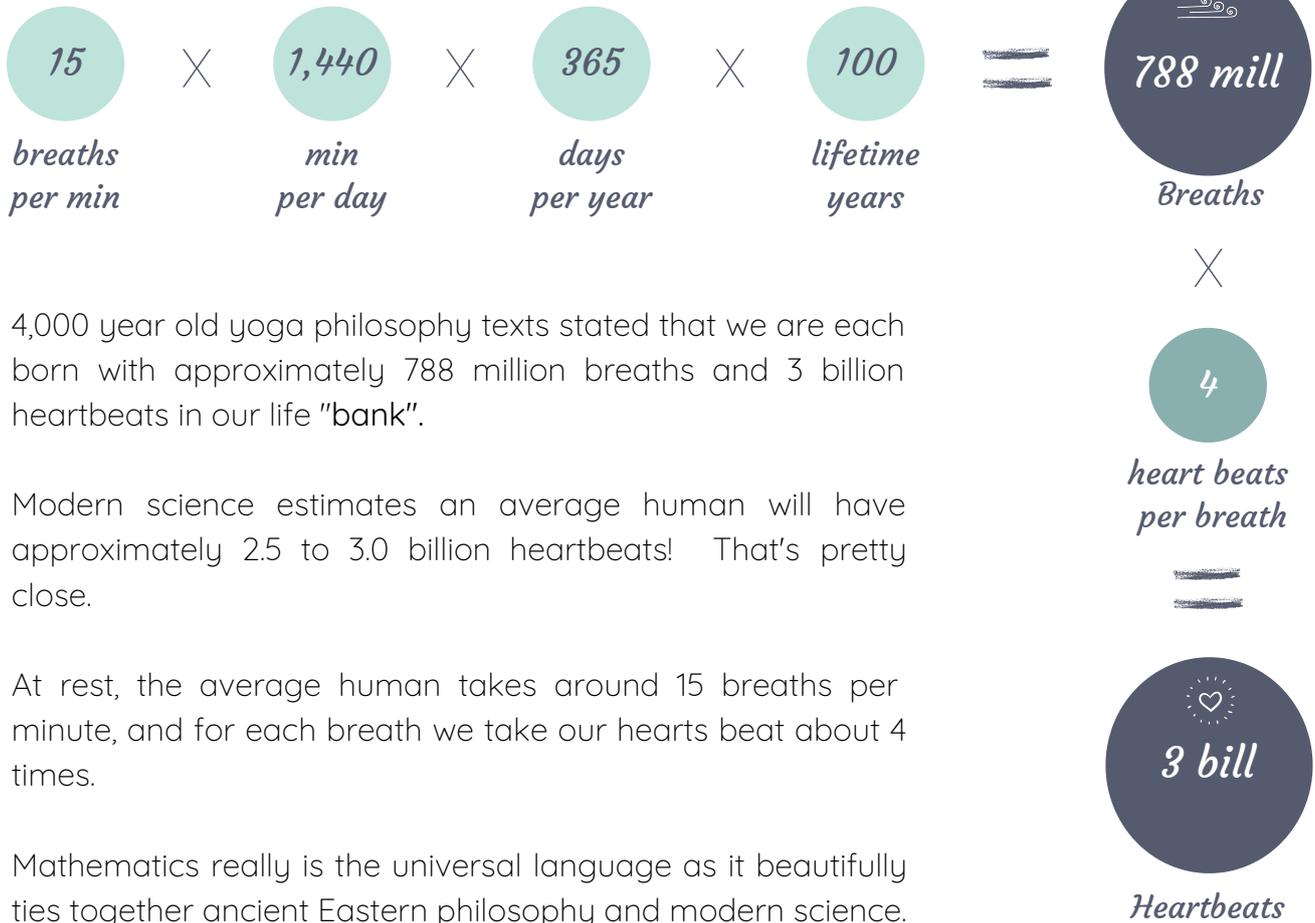
When we double up the exhale we are activating our parasympathetic nervous system and allowing our bodies to enter into a deep relaxing state.

This is a great technique to help with sleep. Practice it when you get into bed. starting with a balanced breath. Then increase the exhale by one count every 5 breaths or so. Keep extending within comfort and allow yourself to drift off into sleep as your nervous system winds down.



Prānāyāma

788 Million Breaths 3 Billion Heart Beats



4,000 year old yoga philosophy texts stated that we are each born with approximately 788 million breaths and 3 billion heartbeats in our life "bank".

Modern science estimates an average human will have approximately 2.5 to 3.0 billion heartbeats! That's pretty close.

At rest, the average human takes around 15 breaths per minute, and for each breath we take our hearts beat about 4 times.

Mathematics really is the universal language as it beautifully ties together ancient Eastern philosophy and modern science.

Prānāyāma

life force extension

We often translate pranayama to mean breath work. And while the practices are largely breath based, the word prānāyāma literally means extension (āyama) of our life force (prānā). If we really do come into this life with a fixed number of heartbeats and breaths then extending our breath would extend our life.

The human being and our workings are intricate and much more complex than this but what we have seen within modern science and research is that a calmer breath means a calmer nervous system and an all around better regulated human being.





Sequence Prānāyāma

life force extension

Why

- | | | | |
|---|----------------------------|------------|---|
| 1 | Build Awareness | 8 Breaths | Plug into your awareness. |
| 2 | Find Balance | 12 Breaths | Balance the nervous system. |
| 3 | Exercise the Primary Mover | 12 Breaths | Connect with the diaphragm. |
| 4 | Double up the Exhale | 12 Breaths | Calm, relax, rest and centre yourself. |
| 5 | Find Balance | 8 Breaths | Come back to centre to prepare to finish. |
| 6 | Natural breath | 8 Breaths | Let go of conscious control and return. |

“

*Inhaling is my energy
Exhaling my release
And the pauses in-between oceans of peace*

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Gabi Macra



Gabi Macra
gabi@realpeopledoyoga.com
+(44) 783 117 6673
500 RYT
1,000 IAYT (in progress)