Master Your Breath

Heighten your awareness for the most import process in your body and develop a deep, relaxed and rhythmic breath to improve your health, boost your performance & manage your stress levels

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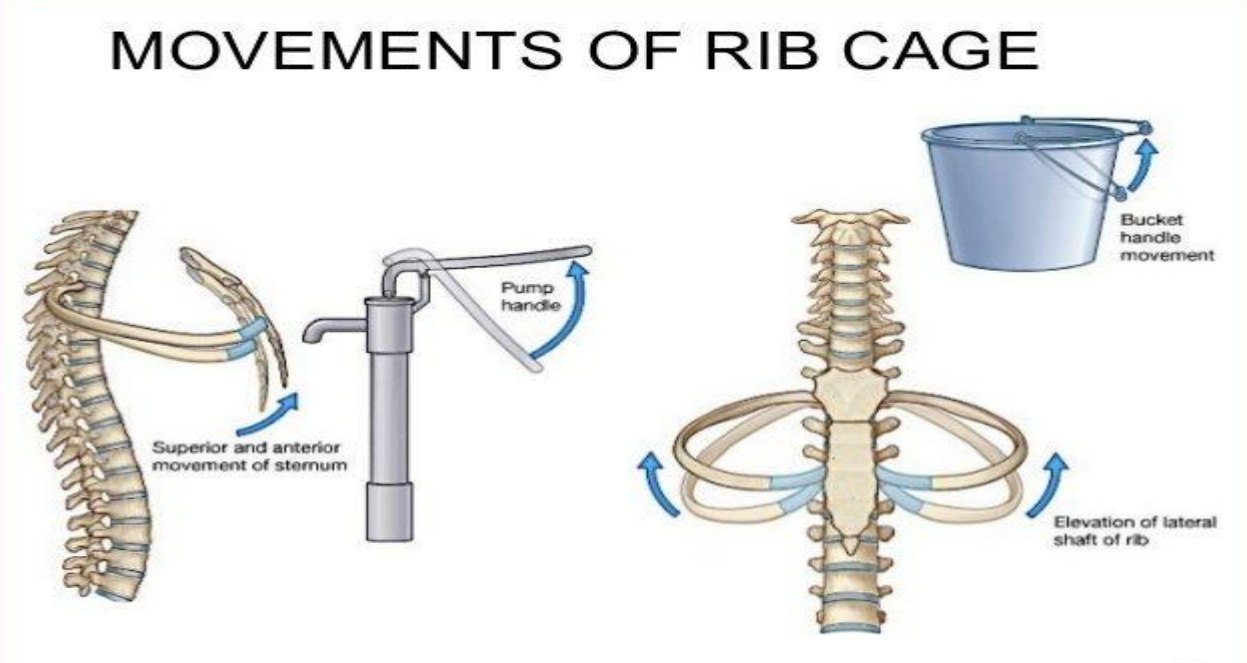
The Six Principles of Conscious Breathing

1. Erect Posture - the joy of alignment
2. Breathe low using primarily your diaphragm
3. Breathe always through your nose
4. Breathe rhythmically
5. Breathe slowly
6. Breathe small/minimal

Movements of your Rib Cage



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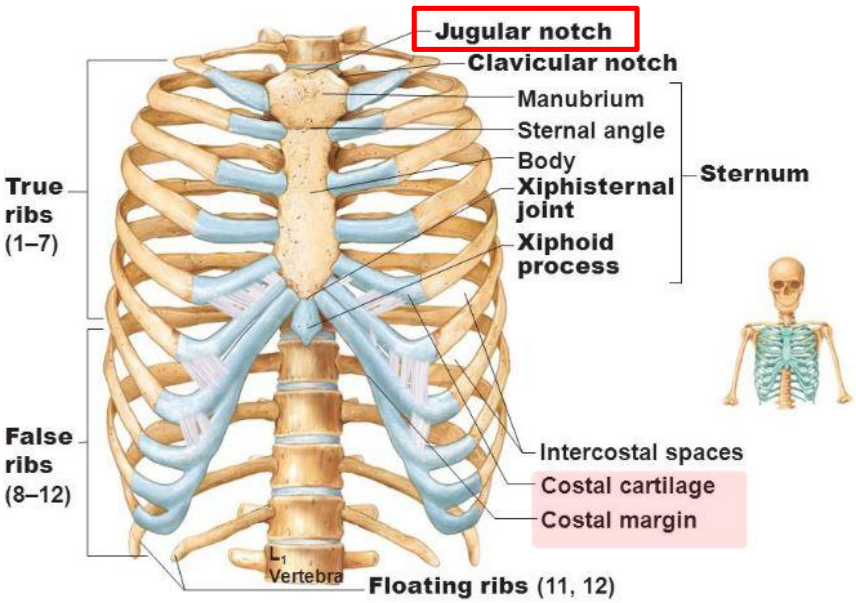
Jalandhara Bandha: The jugular notch is the target for the chin

- To apply JB, close the chin to the throat and then flex the cervical spine until your chin reaches the jugular notch
- This involves flexing of upper CS, retraction of upper and middle CS flexing lower CS
- Place the tongue on your upper palate, release the jaw forward, softly contracting the throat, and relax the rest of your face
- No swallowing should be possible with JB applied
- To reach the jugular notch, it helps to lift the shoulder girdle during inhalation (esp. that last lift at the end of inhalation)



Steps into an out of Jalandhara Bandha

1. 2. 3. 4.

7. 6. 5.

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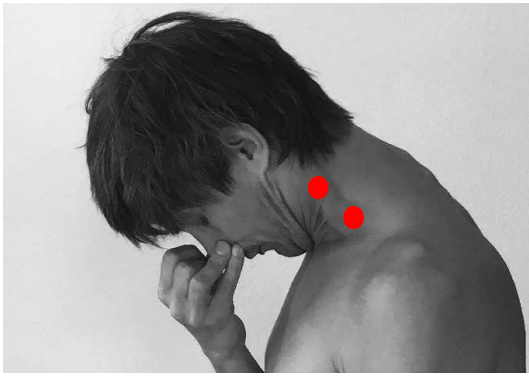
Jalandhara Bandha - Is your neck to short for the full version?

- Different texts talk about placing the chin on the jugular notch or alternatively the sternum (which we could consider step 2 - more advanced version) - jugular notch achieves the necessary pressure control
- The length of your neck will determine - along with your mobility - where your chin can reach (sternum, jugular notch, or somewhere above)
- Important however is not the place where your chin ends up but rather how well you can maintain and control the pressure and in what way the pressure receptors around your carotid sinuses are stimulated (2 red dots)
- Therefore make sure to first get the lock/bandha within the throat and then lower down as far as it goes - reaching too far down will decrease lung volume as the pull from your chin will from a certain moment on push the lower ribs down which will collapse the space in your upper belly
- Therefore, of course a long neck will give you a visual advantage (I can reach my sternum), but has nothing to do with the efficiency of the actual bandha within



The JB-Test - Is you Jalandhara Bandha applied or your head red?

- Inhale fully and activate JB
  - Lock the chin
  - Close the throat
  - Lift the tongue and release the lower jaw
- Then - while keeping the upper belly open - draw in the lower belly, increasing the internal pressure in the upper belly and chest cavity
- Is the pressure rising into the head? If yes, your JB is not applied correctly/fully
- Side effect: The application of lower belly pressure keeps lungs stretched open and triggers points in lower belly area that decrease the reflex to trigger next inhalation, trigger also the parasympathetic NS

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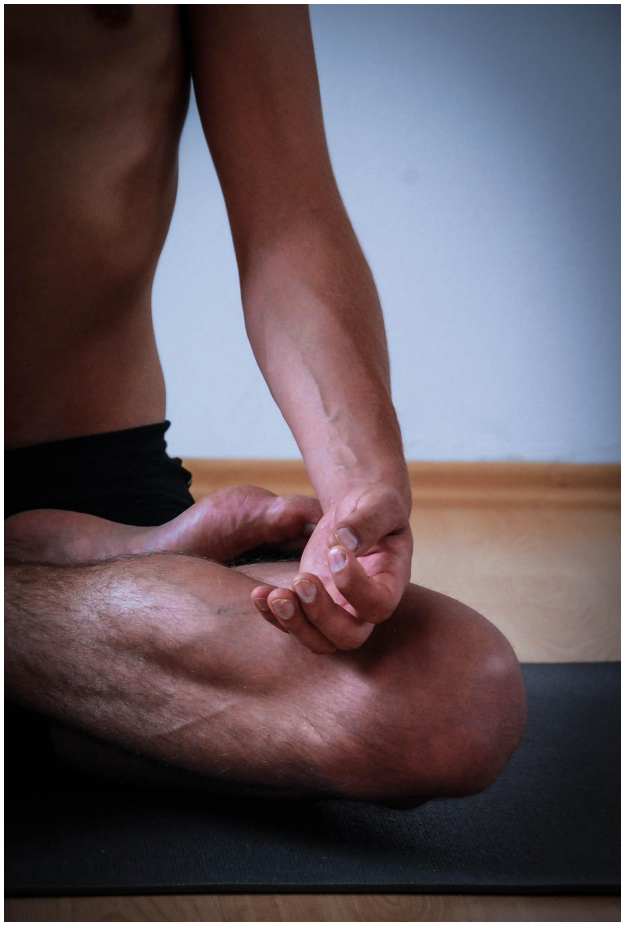
More thoughts on Jalandhara Bandha



- jalan=brain, dhara=upward pull → through the forward bending of the head, the bandha creates a pull on the spinal cord
- It is the essence of internal kumbhaka
- Different texts talk about placing the chin on the jugular notch or alternatively the sternum (which we could consider step 2 - more advanced version) - jugular notch achieves the necessary pressure control
- If you feel pressure in your head, irritability or headaches, you are probably not applying the bandha fully
- JB adds to the control of your upper body, therefore the moment you release JB, a ***controlled*** exhale starts (instead of air bursting out of your lungs)
- Inversions such as shoulderstand and its preparatory postures prepare the neck in terms of mobility and strength but do not apply a full JB as that would imply a breathhold

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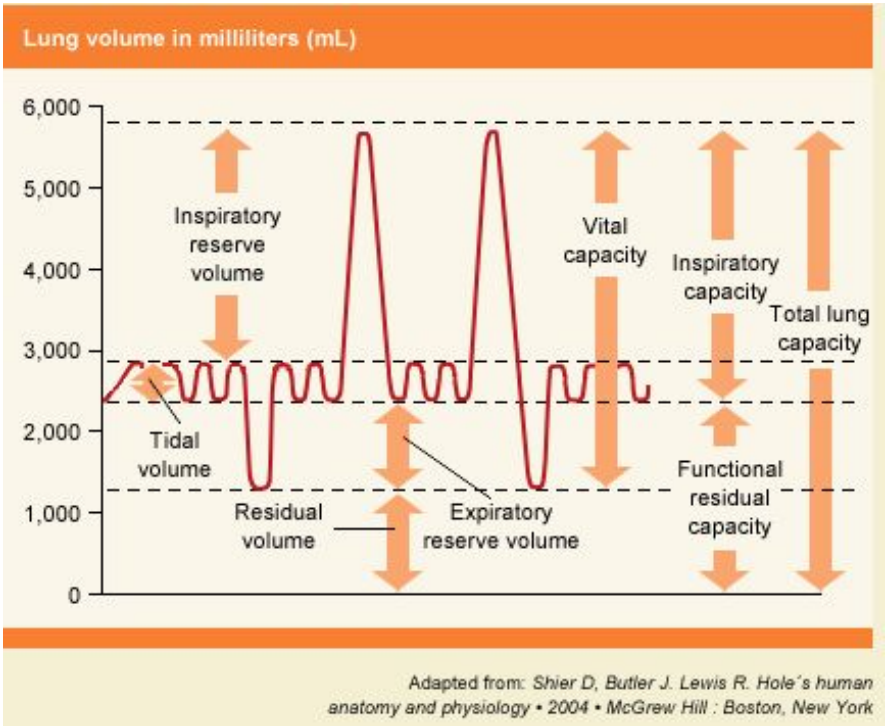
Kapalabhati increases your vital capacity & changes air from your lungs



Gaia Yoga ŠKOLA & SHALA

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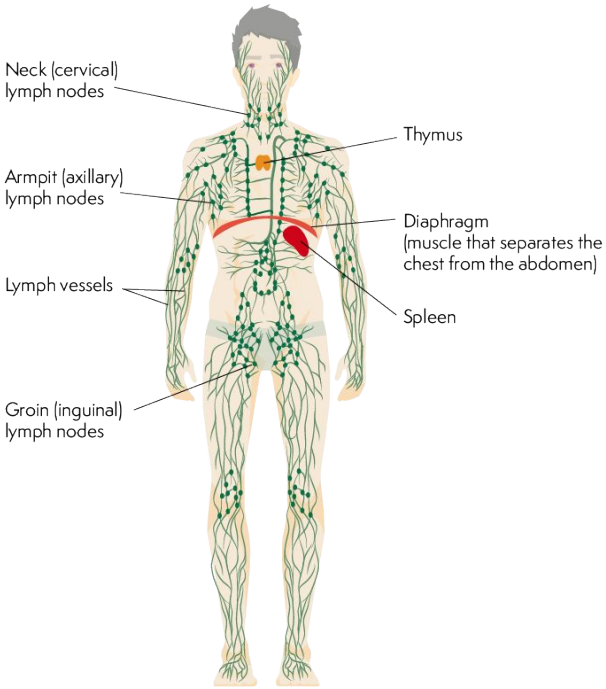
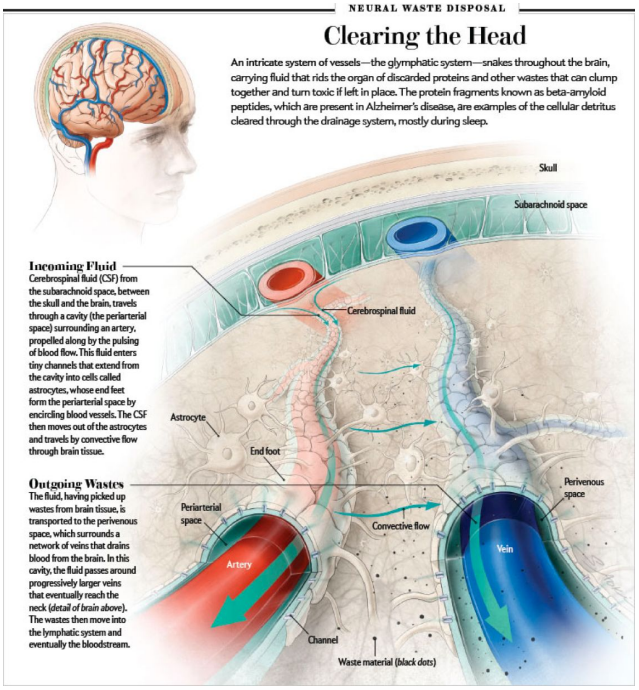
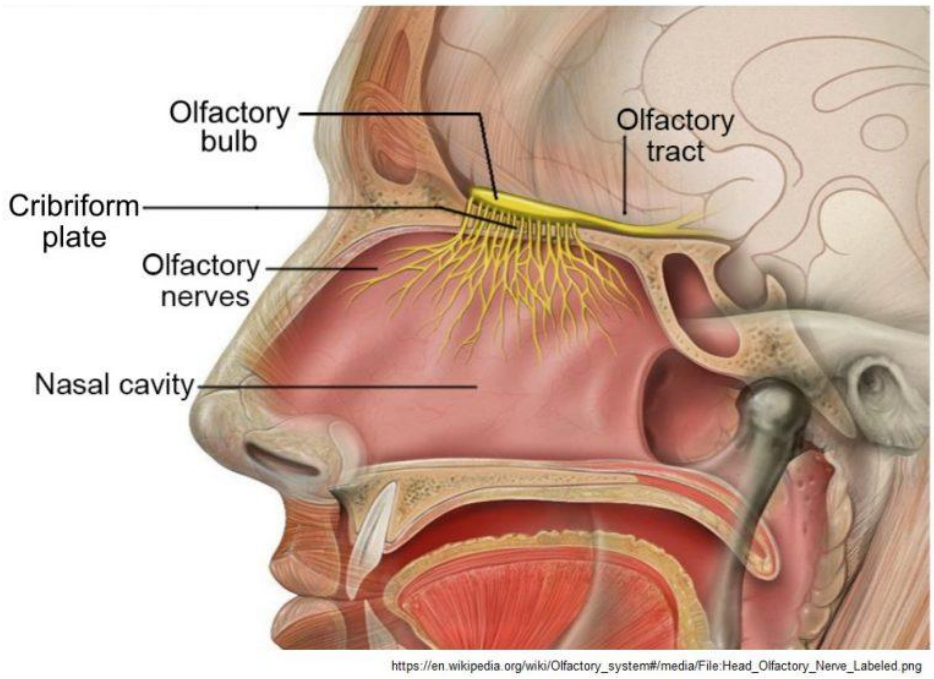
Kapalabhati supports detoxification through lymph system





K. will clean out nasal passage and stimulate the brain



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Breathing and Parkinson

→ One can make the case that patterns of unhealthy breathing are among the most vital target areas for progressive reduction of the symptoms of Parkinson's Disease.

→ In people with PD, breathing dysfunctions are prevalent. These include chronic mouth breathing, shallow breathing from the chest and neck, with very little movement of the diaphragm, and a tense, spasmodic, rigid and stiff diaphragm.

→ These breathing patterns often precede diagnosis by years or may even be life-long habits, and therefore could have a more causal role, rather than just being an effect of developing the disease.

http://www.outthinkingparkinsons.com/articles/diaphragmatic-breathing

Breathing and Autism

→ Five weeks later the mom reported that Nancy's great progress continues thanks to improved breathing patterns. Nancy continues to tape her mouth at night. In the past she couldn't even use patches because of the discomfort she would experience, and she now sleeps quietly at night with her mouth taped shut.

→ When Nancy gets stressed she picks up the Relaxator spontaneously, which calms her down. She is more present and has a brighter, more awake look in her eyes. She looks around like she is discovering things for the first time and can associate things like snow/white/other white things, winter/cold, autumn leaves fall off, etc.

→ She can draw conclusions and find solutions such as can't close the door/something is blocking the door/removes the obstructing item/now the door can be closed. This makes her feel absolutely thrilled

→ The ever-present blocked nose / mucus in the nose, dry mouth, and dry lips are long gone.

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Breathing and Metabolic Health

→ Energy can be produced with O_2 (aerobic - respiration) or without O_2 (anaerobic - fermentation)

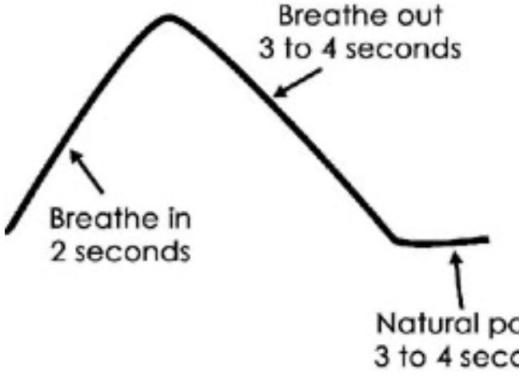
Fermentation	Respiration
Occurs in cellular cytoplasm	Occurs in mitochondria
Fast, but inefficient (6%)	Slow but efficient (up to 100%)
Only uses sugar	Sugar and Fat
Produces Lactate	Produces CO
No O_2 used	O_2 necessary
2 ATP / glucose molecule	30-32 ATP / glucose molecule 107 ATP / fat molecule

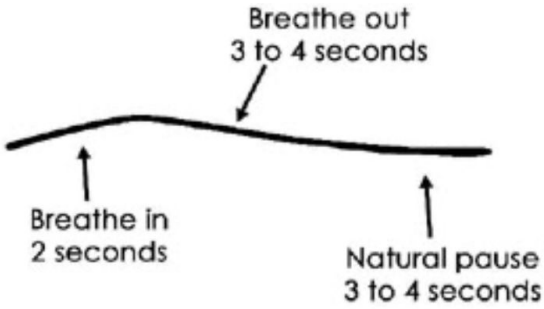
Hyperventilation will contribute to increased Sugar cravings

→ With Hyperventilation and through the Bohr effect and Vasoconstriction, less O_2 available in the cells, relying more on energy consumption through fermentation
→ This will increase craving for sugar increases
→ Also, a study found that overweight people with a lower Respiratory Quotient (RQ) were more likely to keep the weight off after a diet.
→ RQ of Glucose is 1,0 - 16 O_2 consumed creates 16 CO_2
→ RQ of Fat is 0,7 - 23 O_2 consumed creates 16 CO_2
→ Fat can only be burnt when there is Oxygen
→ Also, a hyperventilating body will also be more likely to experience stress, demanding emotions and therefore non-nutritional reasons for eating

Principle 6: Breathe small/less/minimally

→ By breathing less but optimally, you keep CO_2 high with all it's benefits (open airways, clean, more fluid blood, softer arteries, increased oxygenation of muscles etc.) while supplying enough O_2 and having more efficient energy production
→ By exercising with optimal/minimal breathing, you naturally increase your O_2-carrying capacity through increased EPO (Erythropoietin) release and increased red blood cells
→ Less stress, less inflammation and faster recovery after practice





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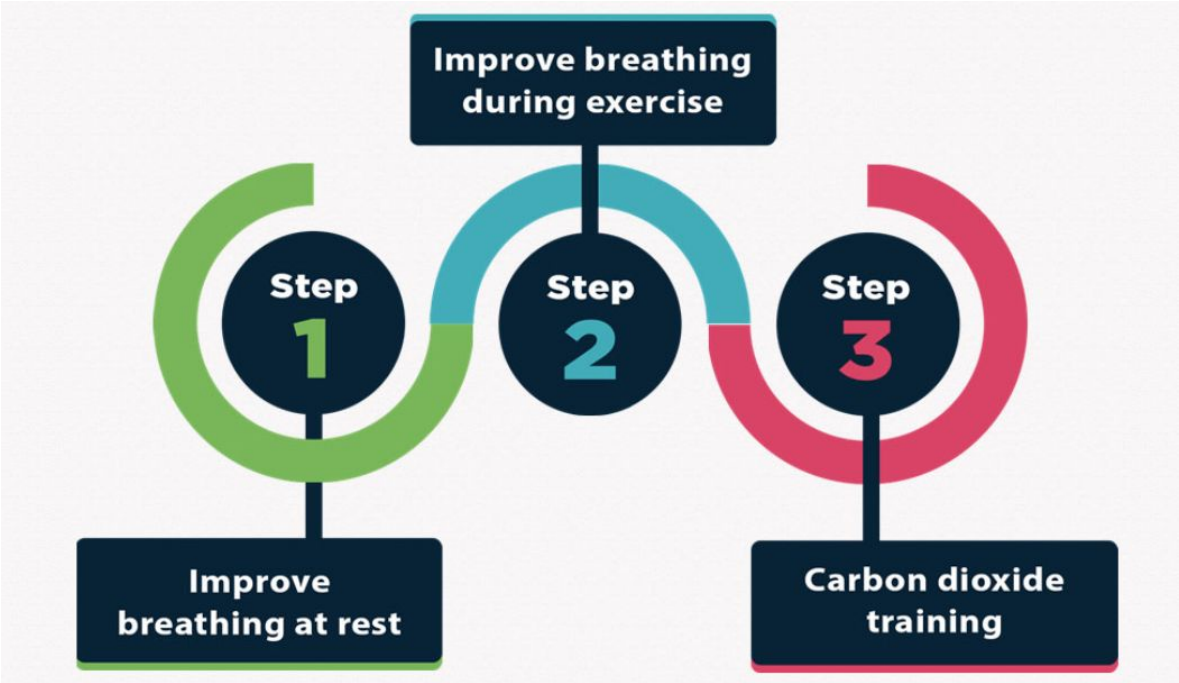
Carbon Dioxide Training for Athletes



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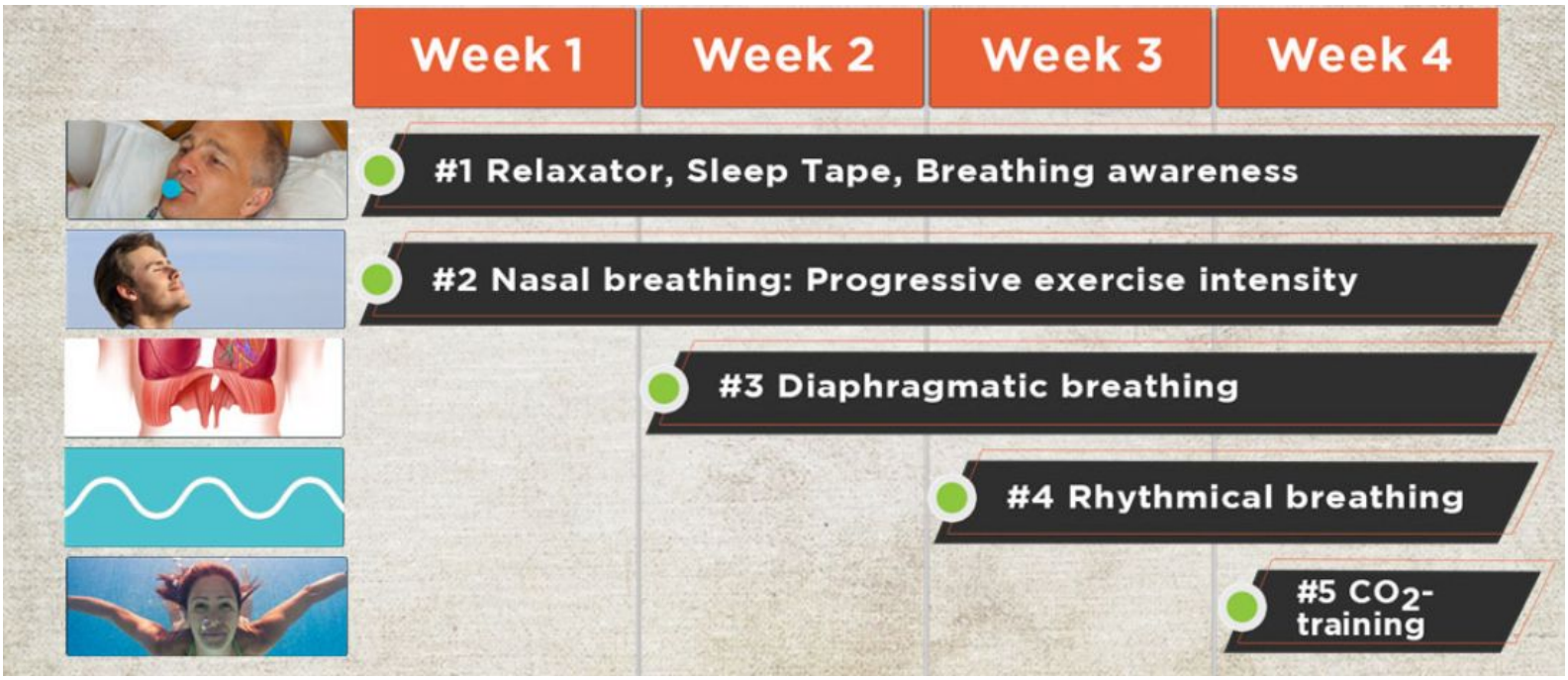
Carbon Dioxide Training for Athletes - possible schedule



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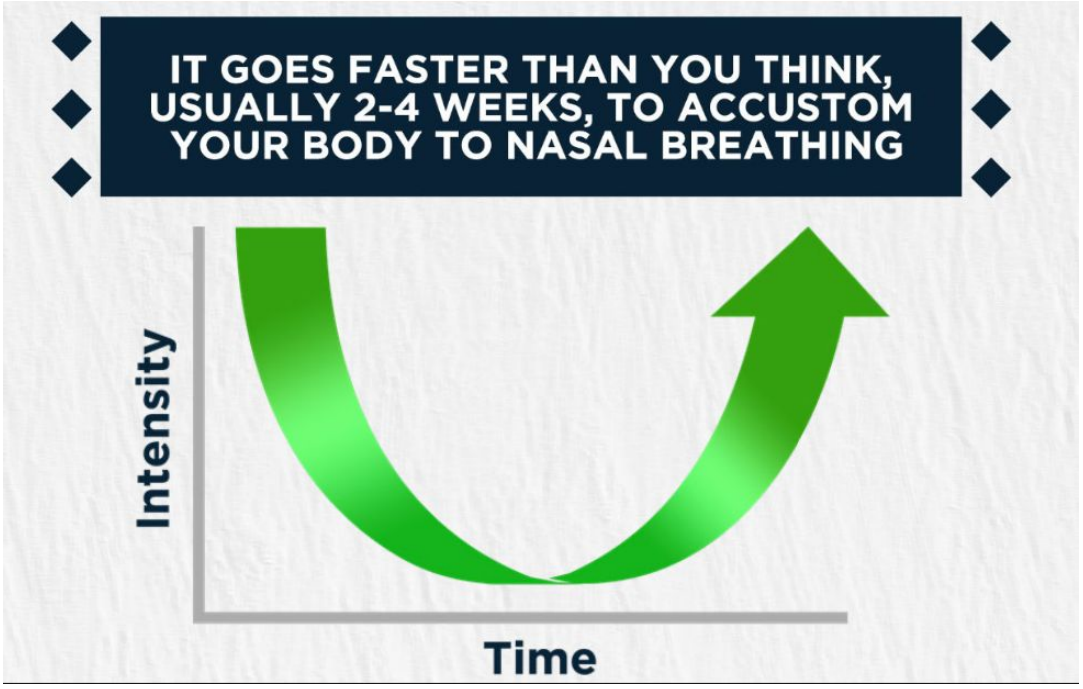
Carbon Dioxide Training for Athletes - be patient



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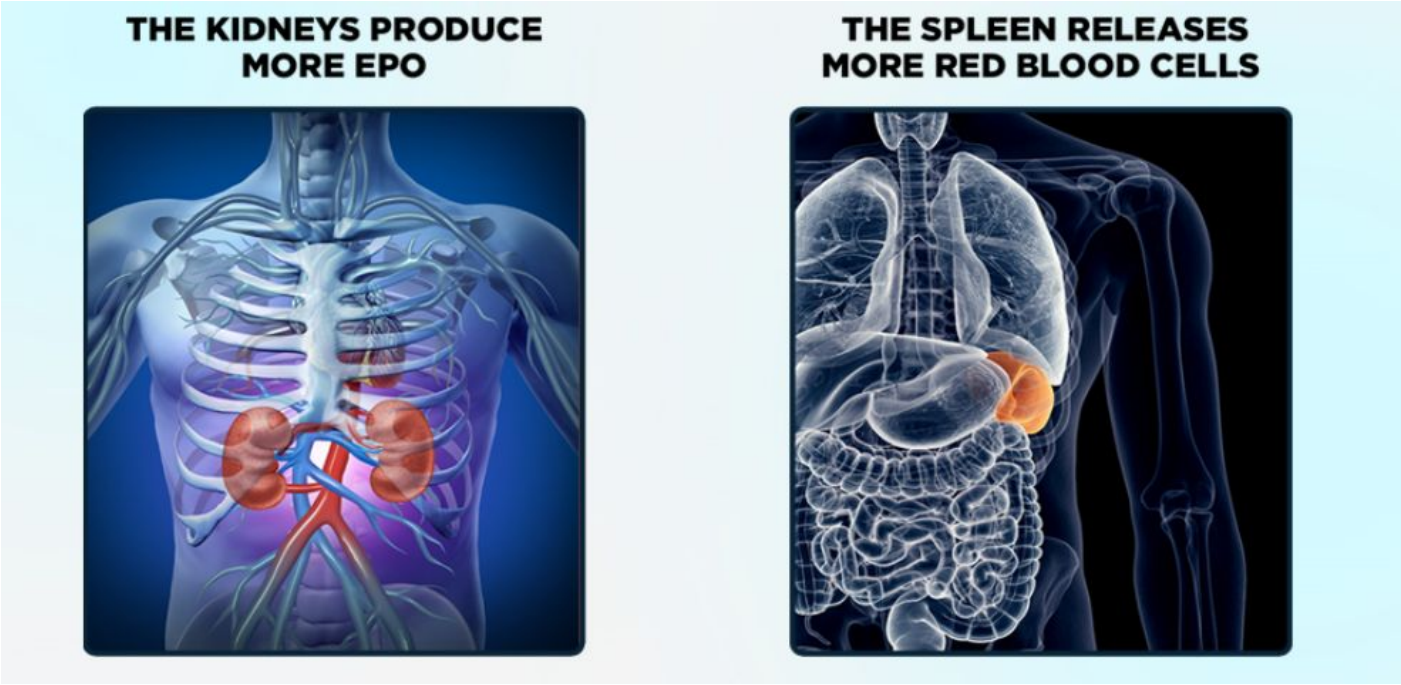
Impact of incorrect breathing

Effects of High Altitude Training



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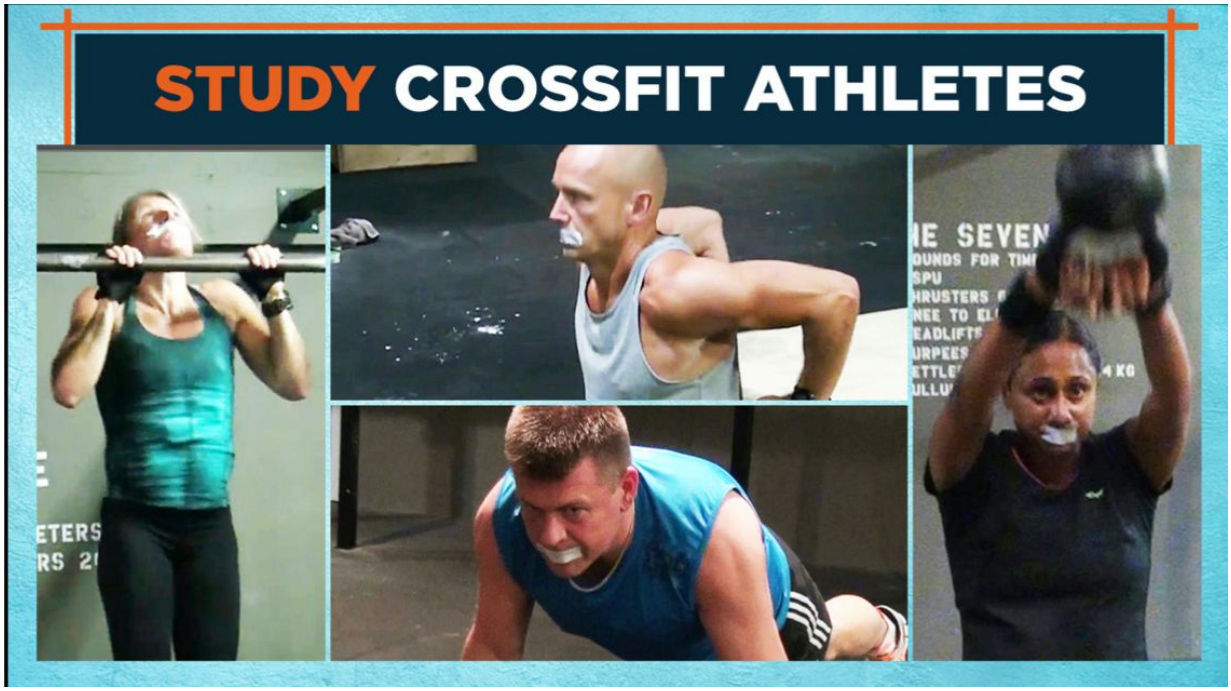
Closed mouth high intensity training study



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Closed mouth high intensity training study

NUMBER	MINUTES EXPERIENCE OF TAPED MOUTH	INTENSITY
5 PARTICIPANTS	0 MINUTES	-
1 PARTICIPANTS	35 MINUTES	LOW
2 PARTICIPANTS	160 MINUTES	MEDIUM
2 PARTICIPANTS	140 MINUTES	HIGH

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Closed mouth high intensity training study

Activity	Normal breathing	Taped mouth	Difference
Push-ups	35,3	38,3	+8%
Box jump	23,7	22,8	-4%
The plank	2 min 50 sec	2 min 50 sec	+-0
Dips	28,5	32,4	+12%
Skipping rope	140,1	132,5	-6%
"Helen"	11 min 27 sec	11 min 40 sec	-13 sec (-2%)

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Closed mouth high intensity training study

"I have measured the lactate levels on over 500 people and I have never, neither before or after the nose breathing study, come across anyone with blood lactale levels above 20 mmol/liter.

In this study, two out of nine had above 20 mmol – 20,3 and 21,5."

Martin Söderberg
Elite Athlete Coordinator
Blekinge Institute of Technology

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Closed mouth high intensity training study

"The results are very interesting since most elite athletes can only tolerate 14-16 mmol/liter.

I would like to see more studies investigating if there is a connection between high levels of CO_2 and an increase in lactate tolerance."

Martin Söderberg
Elite Athlete Coordinator
Blekinge Institute of Technology

Exercise: Hold your breath while walking

Health Status	Number of steps
No symptoms, optimum health	120+
Excellent health, most symptoms completely gone	80-100
Good health, symptoms present with stress /triggers	60-80
Symptoms often present	40-60
Many different symptoms are present all the time	20-40
Medications, diseases, “breathe like a steam train”	10-20
Dead	0

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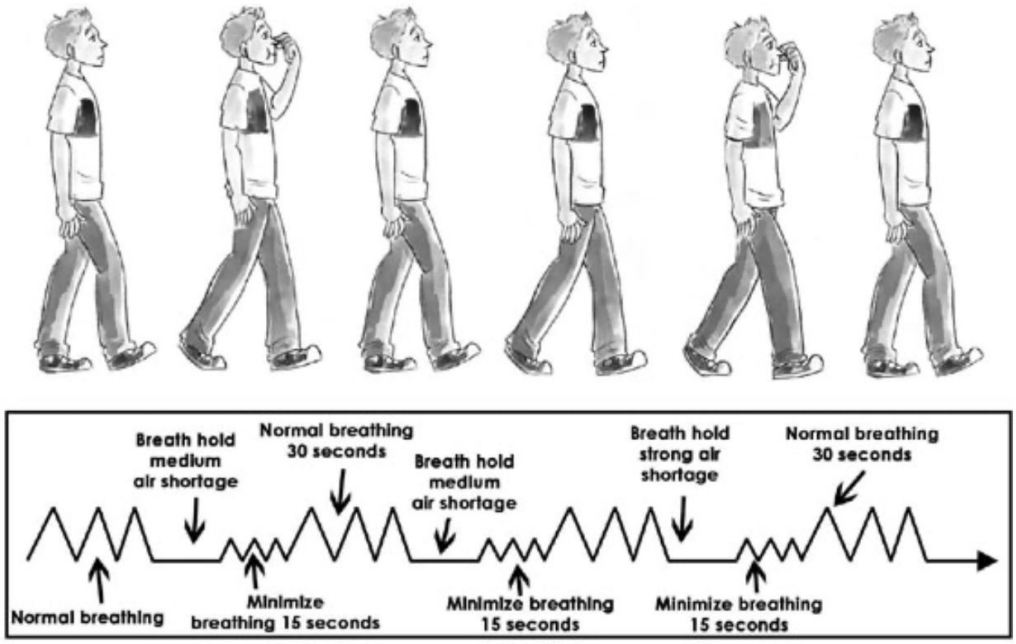
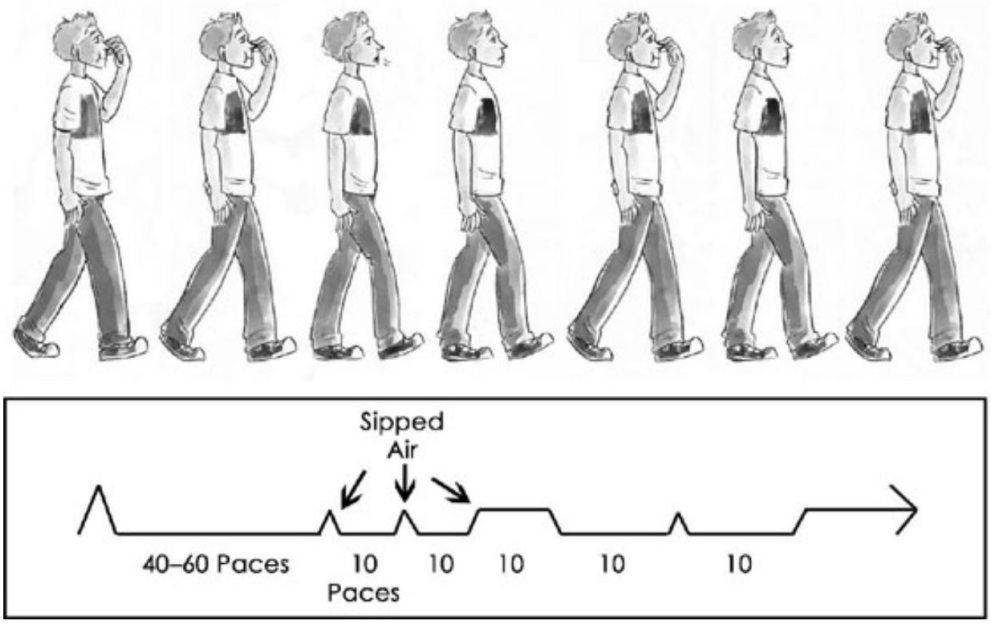
Simulated High Altitude Training - beginner



Simulated High Altitude Training - intermediate



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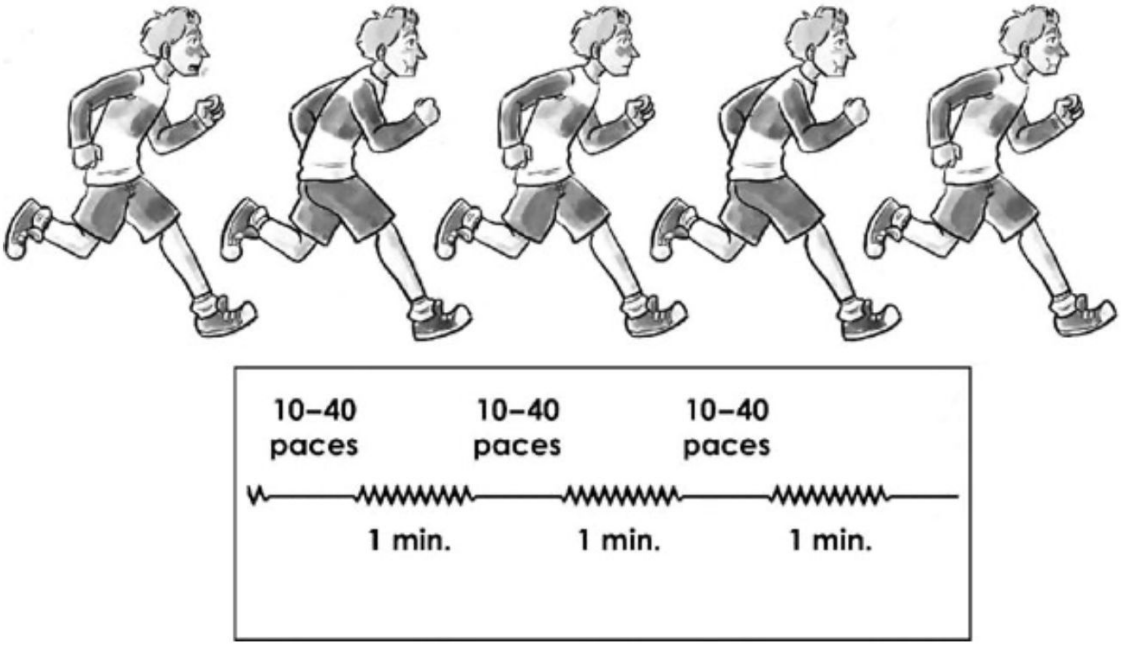
Simulated High Altitude Training - advanced



Simulation of High Altitude Training provides most benefits

Breath-holding techniques allow us to simulate many of the positive benefits of high-altitude and high-intensity training, including:

→ The release of red blood cells from the spleen, improving aerobic performance
→ The production of natural EPO
→ A higher tolerance to carbon dioxide
→ Reduced stress and fatigue of working muscles
→ Improved psychological preparedness
→ Improved recovery time
→ Reduced lactic acid