

CLASS 5



OXYGEN  ***ADVANTAGE***[®]
BY PATRICK MCKEOWN

PRE-COMPETITION PREPARATION



OXYGEN  ***DVANTAGE***®

BY PATRICK MCKEOWN



How you breathe
during the day...



...influences how
you breathe during
sleep.

FOR BETTER SLEEP

BREATHE LIGHT

BREATHE THROUGH YOUR NOSE

GETTING A BETTER NIGHT'S SLEEP

- Avoid blue light – smart phone and laptop
- Sleep in a cool and airy bedroom
- Don't eat late at night or drink alcohol
- Switch to nasal breathing permanently
- Practise breathing softly for twenty minutes before sleep-
parasympathetic NS
- Determine sleeping position

GETTING A BETTER NIGHT'S SLEEP

- Tape mouth closed-
- 3M micropore tape/LipSealTape.com
- Wear tape for twenty minutes during the day to become comfortable with it
- If mouth naturally moist in the morning, no need for tape

Pre-Competition Preparation

1. Some athletes will employ meditation to quieten the mind
2. Nasal breathing, slow breathing with lateral expansion and contraction during warm up. Help reduce pre match anxiety.
3. Perform 2 easy and 5 strong breath holds to create hypoxic hypercapnic response. Complete five to ten minutes prior to the game. (EPO and Splenic contraction)
4. Post apneas, exhale as much air from the lungs as possible to lower acidosis.
5. Bring a feeling of intense energy throughout the body

Pre-Competition Preparation

- Nine well-trained swimmers (5 males and 4 females) performed a 50m front crawl sprint either in normal conditions (NO) or after hyperventilation (HV) (30-second pre-exercise maximal voluntary hyperventilation).

Pre-Competition Preparation

- Average velocity for the 50 m front crawl was significantly higher after HV.
- As a result, performance improves (27.79 s vs. 28.08).
- The number of breathing cycles recorded during each race was significantly lower under HV compared to NO
- The stroke rate was slightly increased under HV conditions.
(strokes per minute)

Pre-Competition Preparation

- A pre-exercise maximal voluntary hyperventilation can significantly increase performance on the 50 m front crawl in well-trained swimmers.

Science & Sports Volume 30, Issue 3, June 2015.

Pre-Competition Preparation

- Repeated high-intensity sprints incur substantial anaerobic metabolic challenges and create an acidic muscle milieu that is unfavorable for subsequent performance.
- J Strength Cond Res. 2014 Apr;28(4):1119-26.

Pre-Competition Preparation

- This study tested the hypothesis that hyperventilation performed during recovery intervals would attenuate performance decrement in repeated sprint pedalling.
- J Strength Cond Res. 2014 Apr;28(4):1119-26.

Pre-Competition Preparation

- Thirteen male university athletes performed 10 sets of 10-second maximal pedalling on a cycle ergometer with a 60-second recovery between sets under control (spontaneous breathing) and hyperventilation conditions.
- J Strength Cond Res. 2014 Apr;28(4):1119-26.

Pre-Competition Preparation

- This intervention successfully increased blood pH by 0.03-0.07 but lowered PCO₂ by 1.2-8.4 mm Hg throughout exercise.
- J Strength Cond Res. 2014 Apr;28(4):1119-26.

Pre-Competition Preparation

- In conclusion, hyperventilation implemented during recovery intervals of repeated sprint pedalling attenuated performance decrements in later exercise bouts that was associated with substantial metabolic acidosis. (too much H⁺ from the cells)
- J Strength Cond Res. 2014 Apr;28(4):1119-26.

Pre-Competition Preparation

- The practical implication is that hyperventilation may have a strategic role for enhancing training effectiveness and may give an edge in performance outcomes.
- J Strength Cond Res. 2014 Apr;28(4):1119-26.



Oxygen Advantage & Wim Hof Method

WHM

- Excessive or persistent proinflammatory cytokine production plays a central role in autoimmune diseases.
- Acute activation of the sympathetic nervous system attenuates the innate immune response.

WHM

- Healthy volunteers were randomized to either the intervention (n = 12) or control group (n = 12).
The control group was not trained.

WHM

- Subjects in WHM group were trained for 10 d in meditation (third eye meditation), breathing techniques (i.a., cyclic hyperventilation followed by breath retention), and exposure to cold (i.a., immersions in ice cold water).

WHM

Breathing techniques, consisting of two exercises.

- Hyperventilate for an average of 30 breaths.
- Then, exhale and hold breath for ~2–3 min (“retention phase”).
- Duration of breath hold entirely at the discretion of the subject himself.
- Breath hold followed by a deep inhalation breath, that was held for 10s. Subsequently a new cycle of hyper/hypoventilation began.

WHM

- Subsequently, all subjects underwent experimental endotoxemia (i.v. administration of 2 ng/kg endotoxin).

WHM

- Flu-like symptoms were lower in the intervention group.
- Voluntary activation of the sympathetic nervous system results in epinephrine release and subsequent suppression of the innate immune response in humans.
- These results could have important implications for the treatment of conditions associated with excessive or persistent inflammation, such as autoimmune diseases.

WHM

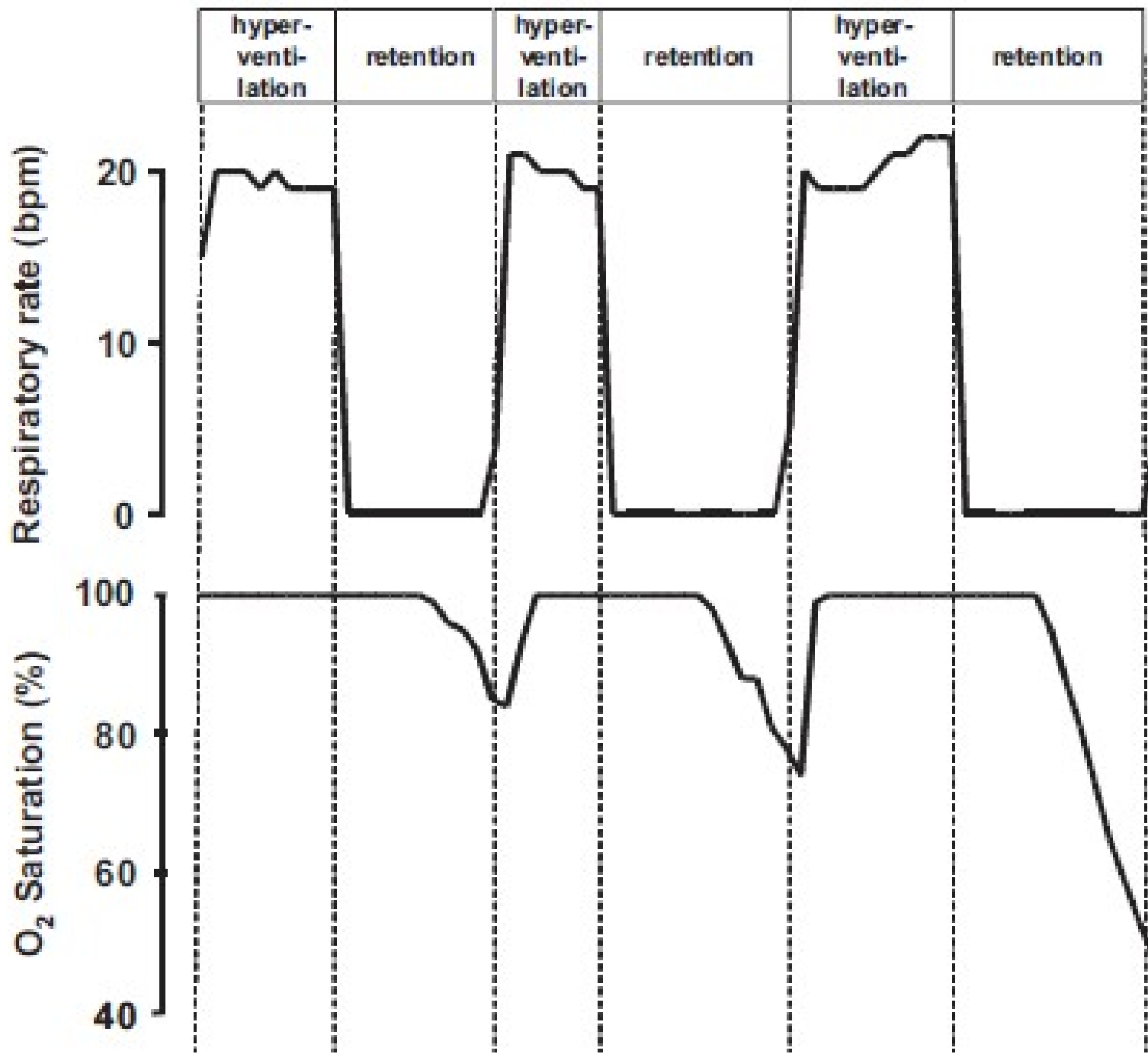
- Biological therapies that antagonize proinflammatory cytokines are very effective and have revolutionized the treatment of autoimmune diseases, such as rheumatoid arthritis and inflammatory bowel disease.
- However, these drugs are expensive and have serious side effects.

WHM

- The present study demonstrates that, through practicing techniques learned in a short-term training program, the sympathetic nervous system and immune system can indeed be voluntarily influenced.

WHM

- This study could have important implications for the treatment of a variety of conditions associated with excessive or persistent inflammation, especially autoimmune diseases in which therapies that antagonize proinflammatory cytokines have shown great benefit.



	Start	End hyperventilation	End retention	End hyperventilation	End retention	End hyperventilation	End retention
pH	7.40	7.66	7.44	7.67	7.46	7.75	7.50
pCO ₂ (kPa)	4.49	2.11	4.01	2.03	3.76	1.69	3.48
pO ₂ (kPa)	16.5	22.0	5.6	22.9	4.8	22.6	3.4
HCO ₃ ⁻ (mmol/l)	20.9	18.0	20.3	17.6	20.2	17.4	20.4
Lactate (mmol/l)	0.69	0.86	0.69	1.03	0.77	1.16	0.91

Kilopascal to Millimeter mercury CO2

4.49 33.67

2.11 15.82

4.01 30.07

2.03 15.22

3.76 28.20

1.69 12.67

3.48 26.10

Kilopascal to Millimeter mercury O₂

PO₂ (partial pressure of oxygen) reflects the amount of oxygen gas dissolved in the blood.

16.5	123.76
22	165
5.6	42
22.9	171.76
4.8	36
22.6	169.51
3.4	25.50



INCREASED CREATIVITY

INCREASED CREATIVITY

- During breath holding, due to O₂ consumption and a decrease in its partial pressure in the lung alveola, the flowing blood is less and less oxygenated with time. This does not mean that the brain immediately receives less oxygen.

- *Journal of Human Kinetics* volume 32/2012, 197-210

INCREASED CREATIVITY

- Oxygen blood saturation is admittedly lower, yet the blood circulation to the brain is higher, which is caused by the dilation of blood vessels in the brain that occurs with increased CO₂ concentration.

- *Journal of Human Kinetics volume 32/2012, 197-210*

INCREASED CREATIVITY

- Yoshiro Nakamats, one of the world's most prolific inventors with over 4,000 patents.
- The floppy disk, the hard disk, and the digital watch.



INCREASED CREATIVITY

- One of his best secrets for coming up with his ideas as: "swim till almost die!"; this technique consists in swimming underwater and ***“holding your breath as long as possible, therefore forcing more and more oxygen into your brain so that you can think better!”***





PROGRAM

PROGRAM

BOLT Score of Less Than 10 Seconds

- Measure your BOLT score each morning after waking;
- Breathe through the nose both day and night (tape);
- Swallow or hold the breath any time you feel a sigh coming;
- Practice the many small breath holds (Ex 1) -10 minutes by 6 times per day;
- Small paces (Ex 3): Exhale through your nose, pinch your nose with your fingers, and walk while holding the breath for 5 to 10 paces. Rest for 1 minute and repeat 10 times. (three sets per day)

PROGRAM

BOLT Score of Less Than 10 Seconds

- Engage in 10 to 15 minutes of slow walking each day with mouth closed. If need to breathe through mouth, slow down or stop;
- When BOLT score increases to 15 seconds, Breathe Light (Ex2). 1 hour per day (six by 10-minute sets);
- As your BOLT score increases, it will become a lot easier to engage in physical exercise. Your expected progress is to increase your BOLT score to 25 seconds within 6 to 8 weeks.

PROGRAM

BOLT Score of Less Than 20 Seconds

- Measure your BOLT score each morning after waking;
- Breathe through the nose at all times. Wear paper tape at night;
- Regularly observe your breathing throughout the day;
- Breathe Light (Ex2) for 10 minutes by 2 times daily;
- Warm up (Ex 4 or Ex10) for 10 minutes prior to exercise by walking and breath holding every minute or so;
- Practice Breathe walking (Ex 5) for between 30 and 60 minutes per day.

PROGRAM

Oxygen Advantage Program for a BOLT Score of 20 to 30 seconds

- Measure your BOLT score each morning after waking;
- Breathe through the nose both day and at night, including wearing tape;
- Breathe Light (Ex2) for 10 minutes, 2 times per day;
- Warm up (Ex 4 or Ex10) for 10 minutes prior to exercise by walking and breath holding every minute or so;

PROGRAM

Oxygen Advantage Program for a BOLT Score of 20 to 30 seconds

- Breathe Light to Breathe Right during a fast walk or jog for 30 to 60 minutes;
- Simulate High-Altitude Training during walking or jogging by practicing 8 to 10 breath holds;
- After physical exercise, practice the Breathing Recovery exercise.

PROGRAM

BOLT Score of 30 Seconds or More

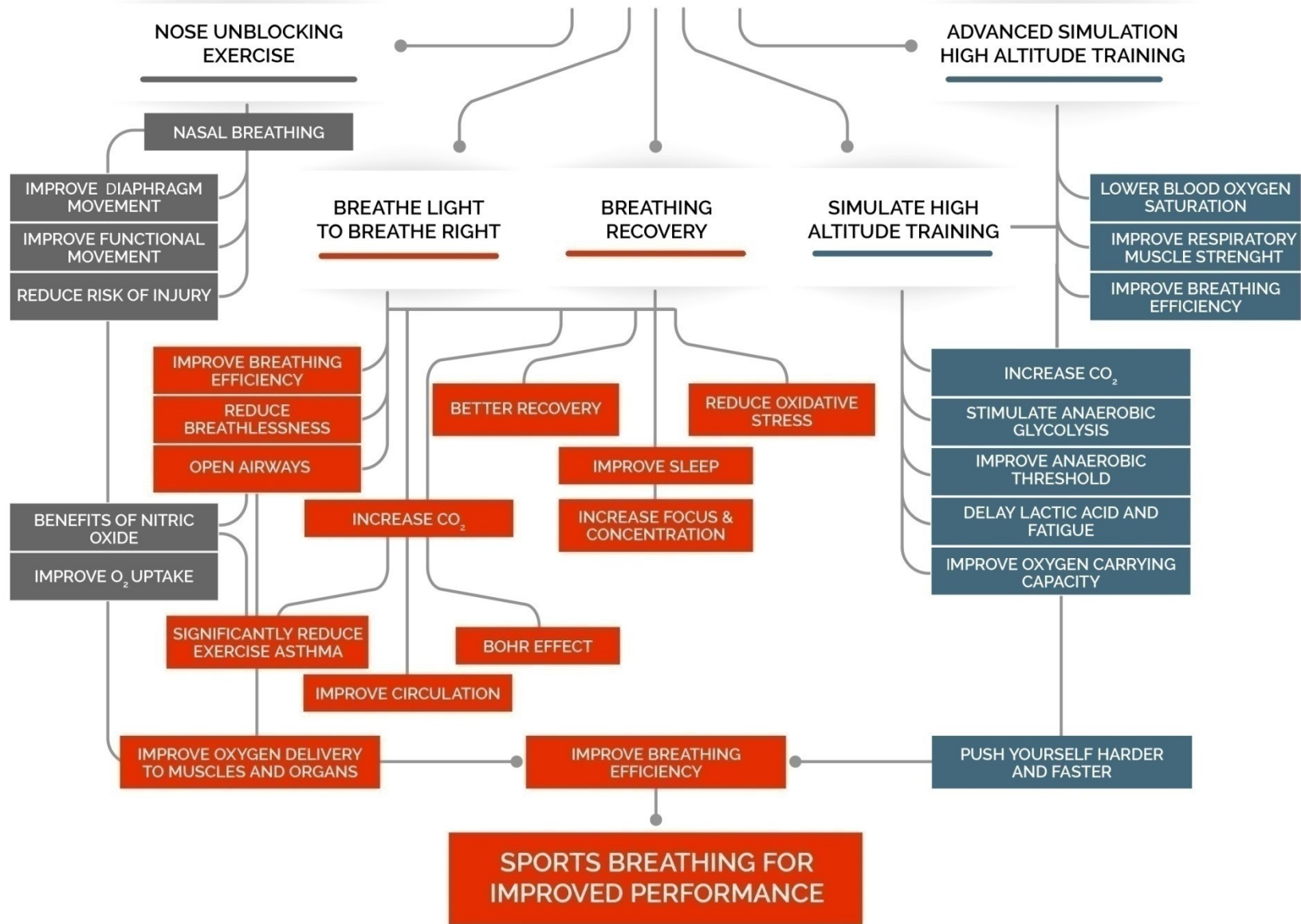
- Measure your BOLT score each morning after waking;
- Breathe through the nose both day and at night, including wearing tape during sleep;
- Warm up (Ex 4 or Ex10) for 10 minutes prior to exercise by walking and breath holding every minute or so;
- Breathe Light during the run ;
- Continue with running and nasal breathing for 20 minutes;

PROGRAM

BOLT Score of 30 Seconds or More

- Midway through the run, practice breath holds;
- Intersperse breath holds every few minutes throughout the run;
- After physical exercise, Breathing Recovery exercise;
- Practice one session of Advanced Simulation of High Altitude every other day;
- Breathe Light (Ex2) for 15 minutes before sleep.

OXYGEN ADVANTAGE
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NUANCES

- Persons with migraine, panic attacks, heart disease (if recent heart attack- relaxation without air shortage), high blood pressure may experience stress from holding the breath.
- If heart rate remains higher when measured ten minutes after the final breath hold- stop doing strong breath holds.
- Instead begin with relaxation, many small breath holds (Ex 1), light air shortage (Ex 2), small paces.

NUANCES

- Strong breath holds are only suitable if the heart rate normalises when measured ten minutes after completion of strong breath hold.

PERSONS WITH ANXIETY

- May find it difficult to focus on breathing.
- Air shortage may generate panic.
- If BOLT increases too quickly, cleansing reaction may occur.
- If necessary practise exercises involving distraction. (breathing through nose, stop sighing, relaxation, small breath holds, walking with mouth closed).

PREGNANCY

- During first trimester- no reduced breathing exercises
- Prevent hyperventilation- avoid overeating, high temperatures, stress, mouth breathing etc
- BOLT should not increase by more than 2 seconds each week
- 2nd trimester- go gently with air shortage

MEDICATION

- When the morning BOLT increases to above 20 seconds, persons taking medication for hypertension, diabetes or thyroid should visit their medical doctor to have their medication evaluated.
- Persons taking asthma and rhinitis medication also need to have their medication evaluated.

LOW BOLT SCORE, SEVERE ASTHMA & ANXIETY OR PANIC

- Limit breath holding while walking to ten paces- see how he or she does, then increase to twelve, see how he does. Continue to increase the paces while observing recovery.
- If child or adult has under twenty paces- breathing is very intense. Higher chance of disrupting breathing and causing symptoms.
- Try to achieve as many paces without causing symptoms.
- In addition, practise breathing recovery exercise ten minutes by six times daily.

IF HAVE SYMPTOMS

- Too difficult to reduce breathing if symptoms are present or BOLT is very low.
- Do breathing recovery exercise until symptoms pass, or BOLT reaches 12/13 seconds.

IF FEELING SUFFOCATED

- Concentrate on stronger breath holds (if person is suited)
- Do paces exercise to help reset respiratory centre quickly
- Breathing will quieten in about half an hour

MILDLY BLOCKED NOSE AT NIGHT

- First clear nose by completing the nose unblocking exercise and rinse your nose with saline solution (described in Close Your Mouth).
- Wear paper tape over lips.
- While wearing the tape, your nose will never completely block. Your nose will partially block if BOLT is low.
- Nose will continue to block until BOLT is 20 seconds.



UNCOMFORTABLY BLOCKED NOSE AT NIGHT

- Practice half an hour of reduced breathing before bed. (or ten repetitions of Paces exercise)
- Rinse your nose with sea salt and water.
- Wear the tape (LipSealTape) across your mouth.
- Wear MuteSnoring in your nose during sleep.
- This will help overcome the feeling of suffocation during sleep.

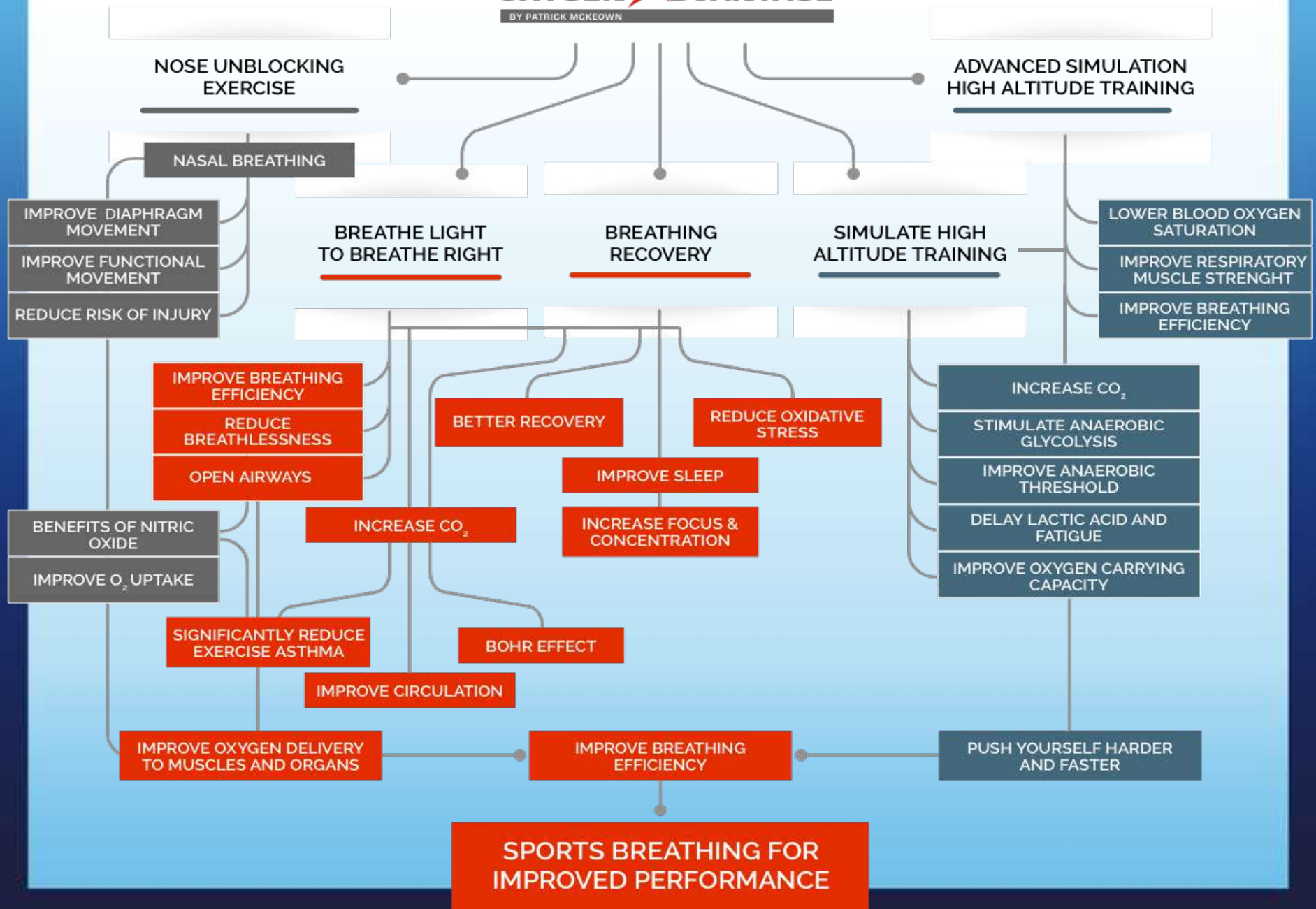


KNOW WHEN TO REFER TO DOCTOR

- Practise six repetitions of Paces Exercise (create a strong air shortage)
- If child or adult can breathe through their nose for one minute, they can do so for life
- If child or adult is unable to breathe through their nose for one minute, then refer to Doctor/ENT specialist



WEEK 1



WEEK 1

- Who is the client?
- Approx age?
- State of health?
- What would they like to achieve?
- Is it a team or an individual?
- The sportier the client, the greater the emphasis on physical movement.

WEEK 1

- What form of physical exercise do they partake in?
- OA can be applied during walking, running, cycling, rowing or any sport.
- Are they recreational or competitive?
- How do they warm up?
- Do they meditate?
- Incorporate the OA into their existing routine for best effect. But first teach them the basic program so they understand the exercises.

WEEK 1

- Paper tape
- Pulse oximeter- explain how it works.
- Measures peripheral oxygen saturation (Spo₂) to give a close approximation of the saturation of arterial blood with oxygen (Sao₂).
What percentage of Hb is loaded with O₂.
- Two lights- red light and infrared light.
- Oxygenated hemoglobin absorbs more infrared light and allows more red light to pass through. Deoxygenated hemoglobin allows more infrared light to pass through and absorbs more red light.

WEEK 1

Following a deep inspiration to total lung capacity, followed by breath holding, a fall in oxyhemoglobin saturation is observed after 16 seconds. This is the time delay of blood circulation from the alveoli to the finger, where the pulse oximeter is placed.

- [J Physiol Pharmacol](#). 2005 Sep;56 Suppl 4:251-6.
- Non-invasive measurement of circulation time using pulse oximetry during breath holding in chronic hypoxia.
- [Zubieta-Calleja GR](#)¹, [Zubieta-Castillo G](#), [Paulev PE](#), [Zubieta-Calleja L](#).

WEEK 1

- Client intake form (provided in folder- marketing images and more)
- How to recognise poor functional breathing
- Benefits of functional breathing
- Briefly talk about the Bohr effect, nasal breathing, sleep, asthma, reduced breathlessness, improved focus and concentration.
- Discuss the benefits of strong breath holding. Explain how oxygen is carried in the blood and hypercapnic/hypoxic training.
- Benefits: Delayed lactic acid and fatigue, improved resilience, improved respiratory muscle strength.

WEEK 1

- Measure BOLT score and give feedback
- Measure MBT score and give feedback
- Ex 2: Breathe Light- 5 minutes
- Ex 3: Preparation of simulation of altitude
- Ex 4: Simulation of altitude training- 5 reps
- Tape mouth at night. Lipsealtape.com

WEEK 1

- In assessing functional breathing, BOLT score although not perfect provides good feedback.
- Also observe athletes breathing during rest:

Fast or slow

Regular or interspersed with sighs

Pause if any at the end of exhalation

Upper chest or diaphragm

Amplitudes of the breath

WEEK 1 HOMEWORK

- Breathe Light 15 minutes during the day and 15 minutes before sleep. (sets of 5 minutes with rest of one minute between each)
- Incorporate nasal breathing and breath holding during warm up.
- 5 reps of breath holding by two times daily (not after eating)
- Nose breathing during physical exercise as much as possible.



WEEK 2

WEEK 2

- Check progress. Observe athletes breathe.
- Recap on functional breathing and dysfunctional breathing
- Measure BOLT score
- Measure MBT
- Ex 2: Breathe Light- 5 minutes
- Ex 3: Preparation of simulation of altitude
- Ex 4: Simulation of altitude training- 5 reps
- Ex 6: walking, jogging 5 minutes
- Ex 10: Shark fit

WEEK 2 HOMEWORK

- Breathe Light 15 minutes during the day and 15 minutes before sleep
- Incorporate nasal breathing and breath holding during warm up
- (Ex 4 or Ex 10) 5 reps of breath holding by two sets daily (not after eating)
- Nose breathing during physical exercise as much as possible.



WEEK 3

WEEK 3 onwards

- Check progress. Observe athletes breathe
- Recap on functional breathing and dysfunctional breathing
- Measure BOLT score
- Measure MBT
- Do entire 11 exercise workout
- (main addition is breathe light and simulation altitude training advanced)
- Introduce pre competition preparation (also for presentations)

WEEK 3 HOMEWORK

- 40- 60 minutes of combination of exercises throughout the day
- Jogging/running with mouth closed
- Walking/jogging/running 5 to 10 reps of strong breath holds daily
- Breathe light for 15 minutes before sleep
- Be aware of nasal breathing and breathe light
- Incorporate into existing training

WEEK 3 HOMEWORK

- People are time poor. Compliance is always an issue.
- Convey the benefits
- Must enjoy the exercises
- Must experience positive effects
- Minimum dose for maximum effectiveness
- Supports: lipsealtape, The Turbine, Pulse Oximeter, Buteyko Belt, Sports Mask



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