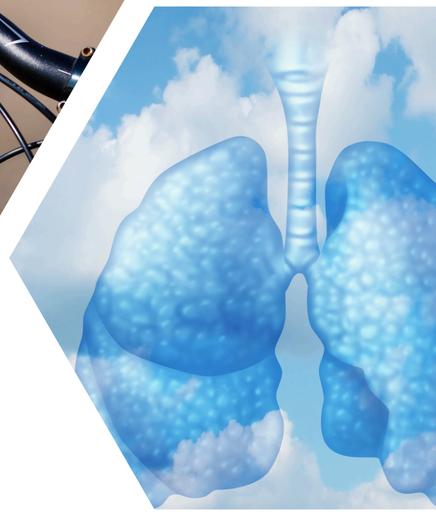


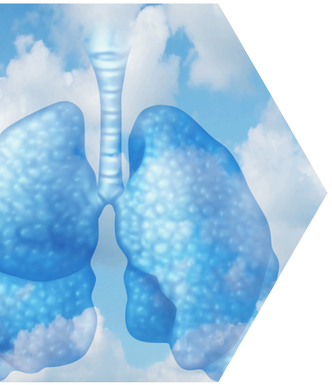
BREATHE LIKE A PRO: OPTIMIZE YOUR BREATHING FOR PEAK MTB PERFORMANCE

Ride stronger, last longer, recover faster.

Presented by Deborah Eraut, CBBA,
Founder of Breath Optimization

AGENDA

- Optimal vs Dysfunctional Breathing
- 3 Elements Effecting Breathing
- Why Breathing Matters on the Trail / Common Issues for MTB
- Biofeedback Equipment
- Take Away Drills
- Q&A

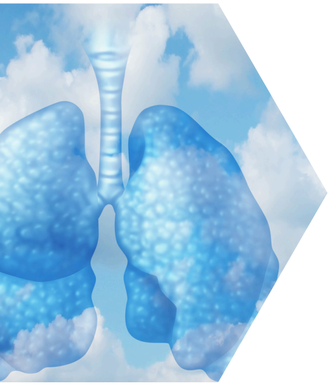


WHAT IS OPTIMAL BREATHING

Breathing patterns that stabilizes the respiratory chemical axis, means maintaining an optimal balance of oxygen (O_2) and carbon dioxide (CO_2) in the blood.

This balance is crucial for efficient gas exchange, cellular function, and nervous system regulation.

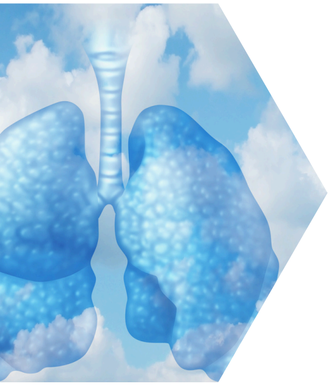
Let's go a litter deeper into this subject



WHAT IS OPTIMAL BREATHING

Stabilizing the respiratory chemical axis ensures:

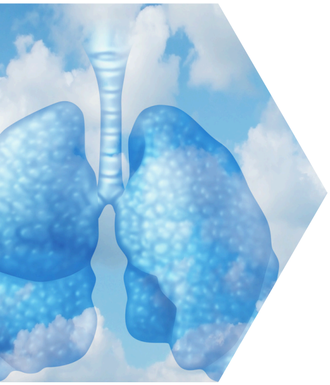
- pH in the blood is balance (manager of your metabolism)
- Proper oxygenation of tissues (CO_2-regulated hemoglobin release)
- Nervous system balance (CO_2 influences parasympathetic tone/Recovery).



WHAT IS DYSFUNCTIONAL BREATHING

Breathing patterns which are persistent enough to cause symptoms, with no apparent organic cause.

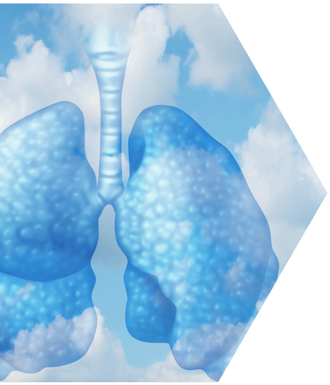
(Clifton-Smith & Rowley 2011)



WHAT IS DYSFUNCTIONAL BREATHING

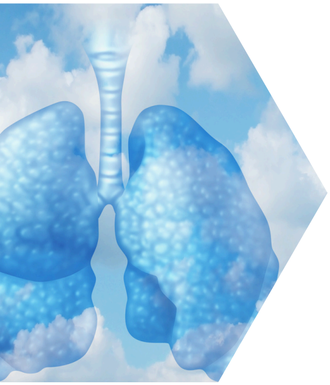
SYMPTOMS

- Emotional Changes (anxiety)
- Cognitive Changes (attention, learning)
- Personality Changes (self-confidence)
- Performance Changes (competitive racing, public speaking)
- Physical Changes (pain, asthma)



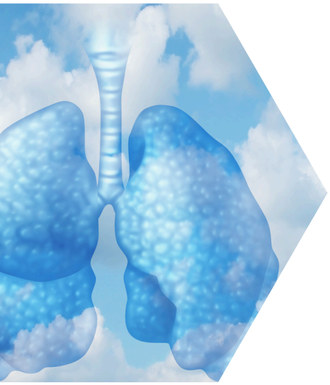
3 ELEMENTS EFFECTING BREATHING

- Chemistry - Gas Exchange
- Physiology - Mechanics
- Psychological - Thoughts / Beliefs / Motivation / Reinforcement



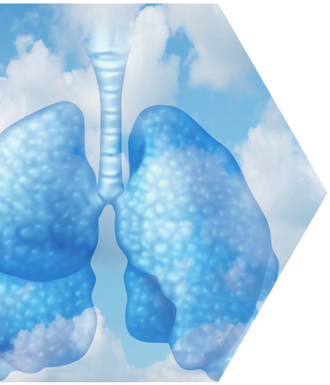
5 BIGGEST MENTAL CHALLENGES

- Encountering your weak points
- Negative mindset
- Fear of the unknown
- Pushing comfort zones
- Risk of crashes and injuries



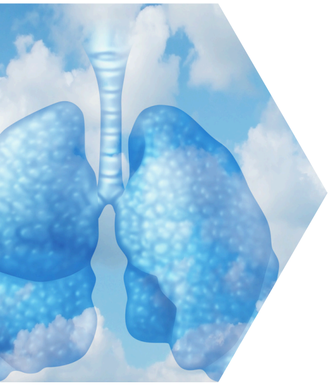
WHY BREATHING MATTERS ON THE TRAIL

- Oxygen = Fuel - Every muscle movement depends on it.
- CO2 Tolerance - The key to endurance (not just oxygen!)
- Breath Control - Improves stamina, bike handling, and mental sharpness.



COMMON ISSUES FOR MTB

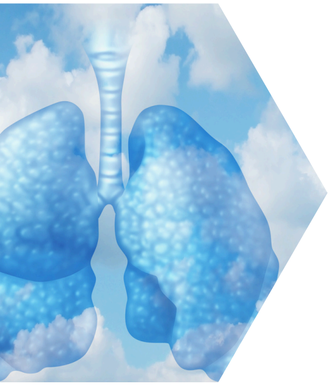
- **Position**: aerodynamic position on bike > compression of the diaphragm
- **Climbing**: Chest breathing, overbreathing > leads to CO2 dumping
- **Sprinting**: Uncoupled breath & movement > leads to early fatigue
- **Descending:** Overbreathing > leads to stiff body and slow reactions



What is the Solution?

SOLUTION

Train your breath like you train your physical body!

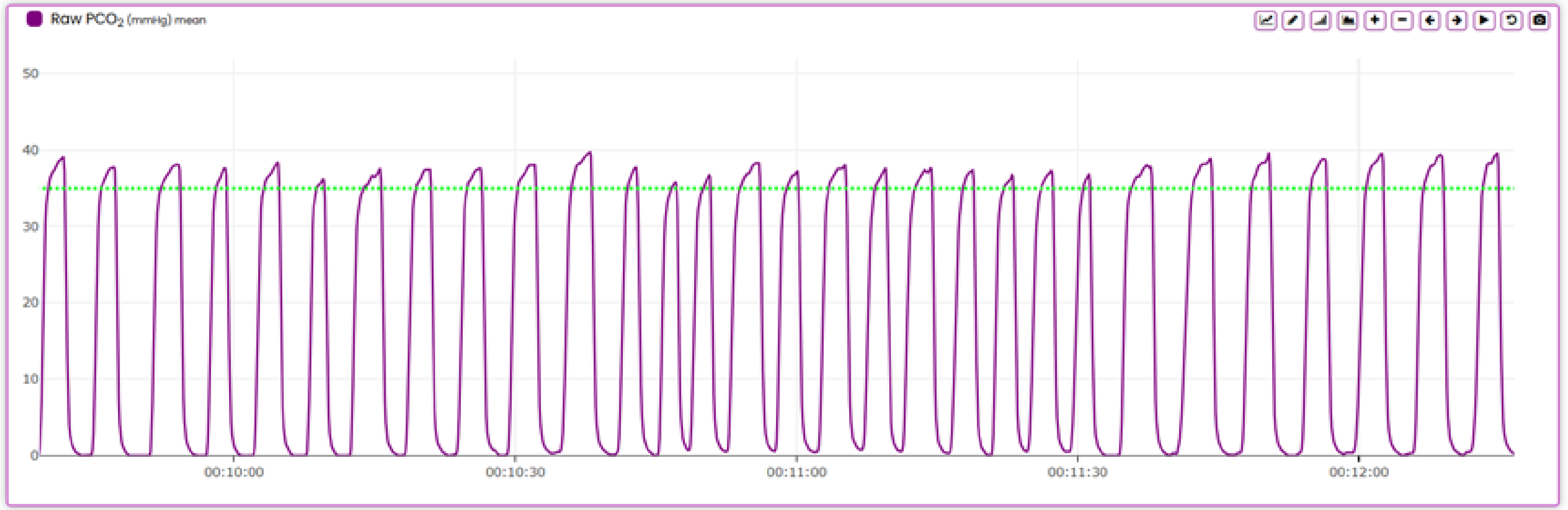


CAPNOMETER

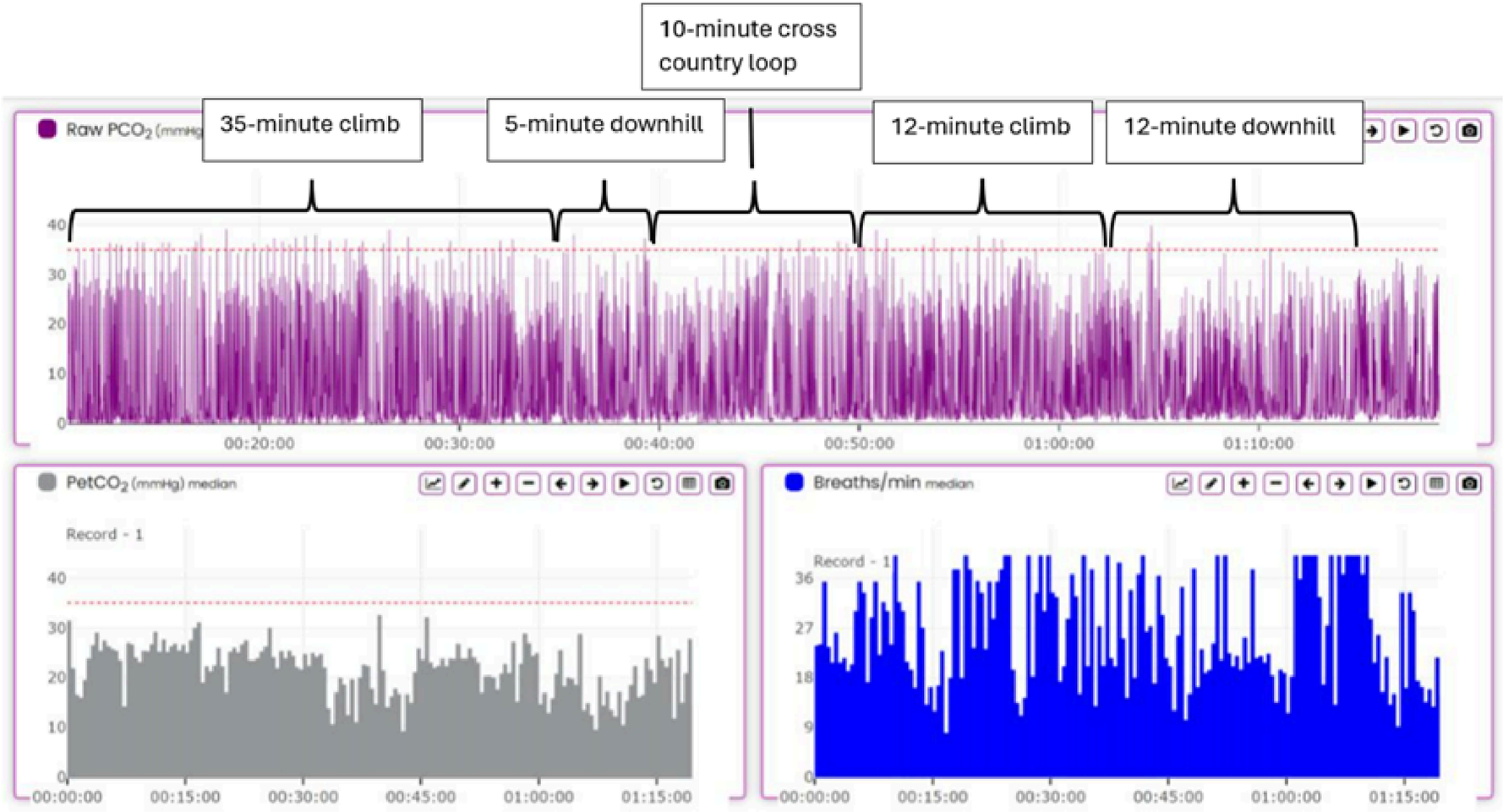
CapnoTrainer GO by Better Physiology Ltd,

- Measures CO_2 levels in exhaled breath.
- Identifies overbreathing and helps optimize respiratory function.
- A mirror of your breathing habits.
- Immediate, relevant and actionable data
- Wearable

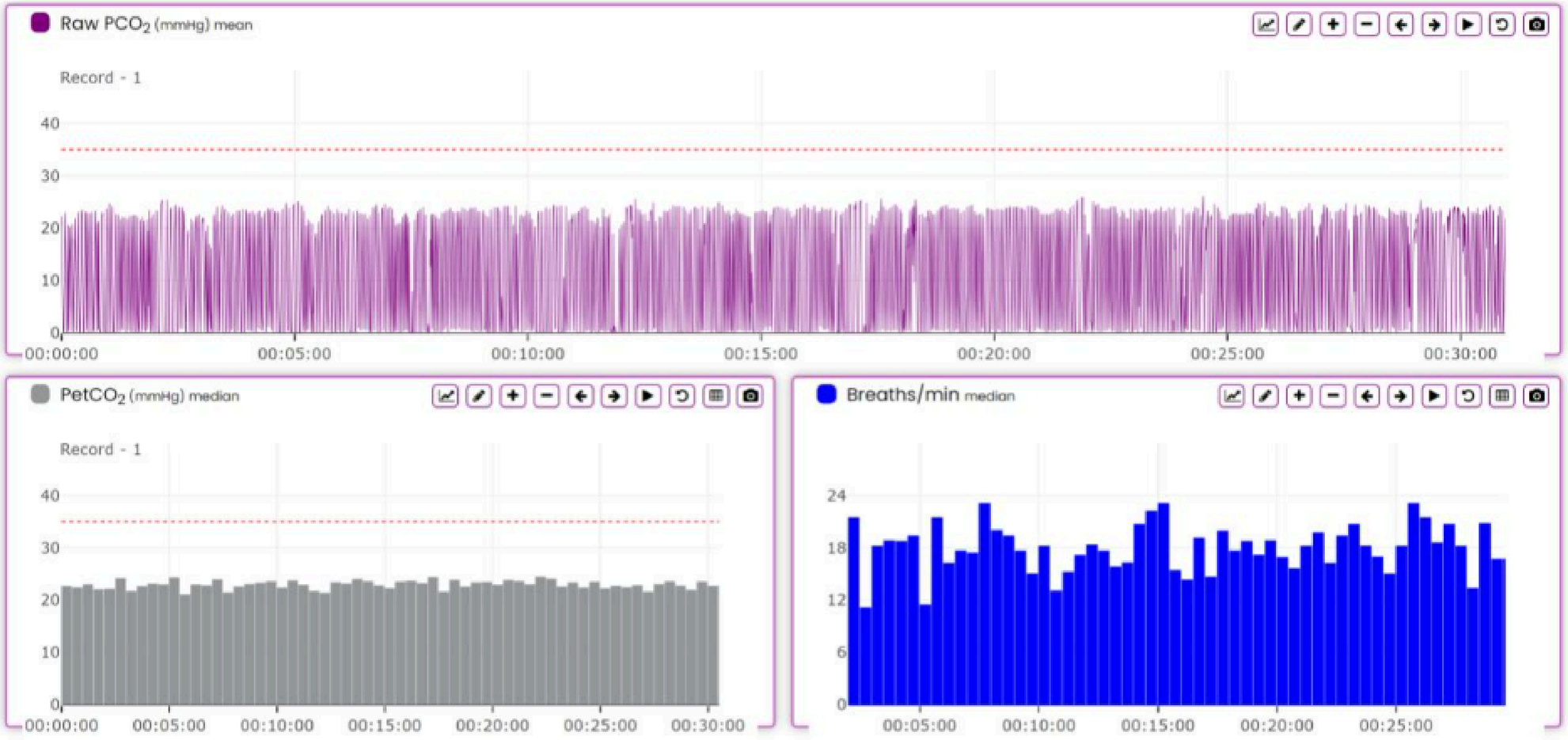
Optimal CO2 (35 to 45 mmHg)



64-MINUTE RIDE



RECOVERY


Raw PCO2 (mmHg) mean
Record - 1
40
30
20
10
0
00:00:00
00:05:00
00:10:00
00:15:00
00:20:00
00:25:00
00:30:00
PetCO2 (mmHg) median
Record - 1
40
30
20
10
0
00:00:00
00:05:00
00:10:00
00:15:00
00:20:00
00:25:00
00:30:00
Breaths/min median
24
18
12
6
0
00:05:00
00:10:00
00:15:00
00:20:00
00:25:00

TRAINING WITHOUT A CAPNOMETER

CO2 TOLERANCE DRILL

BREATH-HOLD CHALLENGE

Why: Trains your body to handle C02, delaying fatigue

When: Off the bike, during training sessions

- Take an inhale through your nose
- Exhale naturally and hold your breath
- Time how long your can hold before the first urge to breathe
- Repeat 2-3 times, trying to extend your time

On the trail: Helps avoid early burn out on long efforts

WARM-UP DRILL

DIAPHRAGMATIC BREATHING

Why: Engages your diaphragm for efficient breathing

When: Before your ride or between hard efforts

- Sit and slouch forward, compressing the belly
- Hands on side ribs
- Breath into your side ribs and into the back
- Exhale silently

On the trail: Use this before a ride or mid-ride reset

CLIMBING BREATH CONTROL DRILL

SYNC BREATH WITH PEDAL STROKES

Why: Stops overbreathing and improves endurance

When: Long climbs, steady efforts

- Simulate pedaling in place
- Inhale through your nose for 5 pedal strokes
- Exhale through you mouth for 3 pedal strokes
- Keep a steady rhythm

On the trail: Use this instead of gasping for air on climbs

DESCENDING BREATH CONTROL DRILL

LOW VOLUME INHALE & EXHALE SIGH

Why: Avoids overbreathing and stiffness on technical sections

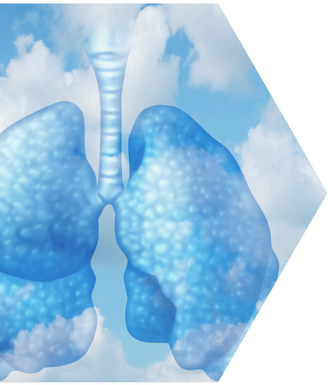
When: Just before or during a descent

- Sit and slouch forward, compressing the belly
- Inhale through the nose - bring in less air volume
- Exhale with a sigh (“Haaaa...”) to release tension
- Repeat 2-3 times

On the trail: Keeps you loose and reactive on sketchy descents

BRING IT ALL TOGETHER

- Breathe through your nose when possible
- CO2 Tolerance Training: off the bike - aids during sprints
- Pre-Ride Warm-Up: diaphragmatic and lateral rib breathing
- During Climbs: synchronizing breath with pedal stroke
- During Descents: reduce air volume on inhale, exhale sigh



WORK WITH DEBORAH

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FINAL THOUGHTS

Ride Hard, Breathe Smart