WARNING! – USE WITH CAUTION.

Do NOT sleep with Training Mask 2.0 on, as negative lung pressure may cause sleep apnea. This mask is not intended to diagnose treat or cure any diseases and has not been evaluated by the FDA. Do not ram, spear, butt, strike, assault or attack anyone or anything while wearing Training Mask 2.0 as it will NOT provide you with any protection in the event you do so. Do NOT train in extreme heat, or cold weather under the temperature of 36 degrees. Do not use Training Mask 2.0 for extended periods of time without prior consent of your doctor or physician. Do not train without a partner when using Training Mask 2.0. Extreme conditioning is made for extreme athletes, if you feel that you are not in good enough health condition to use this training apparatus please do not do so. If you have any known medical condition including high blood pressure, heart disease, hyperthyroidism, or if you are taking any type of prescription medication please consult your doctor prior to using the Training Mask 2.0.

USE TRAINING MASK 2.0 AT YOUR OWN RISK.

DO NOT USE IF YOU HAVE A RUBBER ALLERGY OR ALLERGIC TO NEOPRENE.

*Facial hair will interfere with the seal of TM2.0 – Use Vaseline on any facial hair to keep sealed
Make Training Mask 2.0 part of your cardio program already set in place.
Elevate Your Training to New Heights

Section One: Core Fundamentals of Breathing

Section Two: Oxygen and the Body

Section Three: Breathing and Performance

Section Four: High Performance Ventilatory Training HPVT

Section Five: HPVT training with the Training Mask an illustrated guide

Section Six: Core Performance Training – Training Mask 2.0 workout

Section Seven: Training Mask 2.0 Assembly
Section One Outline:

1. Anatomical components of breathing
2. How air moves from nose-mouth to lungs and out
3. What muscles are involved in breathing
4. Accessory muscles and breathing

Subtitle 1: Breathing and Ventilation what you need to Know

Air comes in and air goes out. Breathing is something we all pay little attention to in our daily lives. Even those of us that should pay attention to it such as athletes, neglect and take for granted the act of breathing. Athletes and fitness enthusiasts think that breathing and endurance will take care of itself while they are training in other areas. After all that’s what Cardio is for right? Those of us that think that way see the backs of the champions of the world as they stay
ahead of us day after day and competition after competition. We can chalk it up to their natural talents...or we can make their advantage our advantage and finally let our hard hours of training finally pay off.

The foundation of any training program understands its core components. We wouldn’t dream of doing a lat-pulldown to strengthen our legs because we know that lat-pulldowns work the back muscles not the leg muscles. This same concept holds true when it comes to ventilation (breathing). Most individuals only consider the lungs themselves when thinking about ventilation, but as we will see here there are many components to breathing. (Expand)

The two phases of ventilation are inhalation (air moving into the lungs) and expiration (air leaving the lungs). The scientific principle that governs how we breathe is called Boyle’s law. Simply stated, air wants to move from areas of
high pressure to areas of low pressure. With that concept in mind, when the inspiratory muscles of the lungs contract (diaphragm and intercostal muscles) it causes the space in our thoracic cavity (ribcage) to expand. This creates a situation in the lungs where there is more volume (space) in the lungs without there being a change in the amount of air in the lungs. This causes the pressure in the lungs to be less than the pressure outside the lungs, and as a result air rushes into the lungs to equalize the pressure between the outside and the lungs. During expiration the inspiratory muscles relax, this will cause the lungs to quickly return to their normal volume due to the elastic properties of the lung tissues. Once that occurs, air pressure in the lungs becomes greater than the pressure outside the lungs, and air leaves the chest cavity.
Although it is important to grasp the general aspects of how ventilation works (inspiration, expiration, lungs, trachea, etc.) It is equally important to understand what the lungs do with the air we breathe. Air travels down the trachea into the bronchioles and eventually to the very small alveolar sacs. It is at this level that oxygen is moved from the air in the lungs, into the blood cells of the body, and where the blood cells release their carbon dioxide into the air in the lungs for expiration. This process occurs because of differing partial pressures of carbon dioxide and oxygen as well as the ph. levels in the blood and body tissues (a very complicated concept that is not extremely important for us to understand for exercise purposes).
What is important to us is the understanding that the more alveoli that come in contact with oxygenated air, the more oxygen will be available to the body.

Secondly, the more alveoli that are in contact with the outside air, the easier it is for our bodies to secrete carbon dioxide (the roles of oxygen and carbon dioxide will be discussed in the next section).
Bronchi, Bronchial Tree, and Lungs

- Larynx
- Primary bronchi
- Secondary bronchi
- Tertiary bronchi
- Bronchioles
- Cardiac notch
- Pulmonary artery
- Trachea
- Pulmonary vein
- Alveolar duct
- Alveoli
Based on these basic anatomical and physiological principles of ventilation, we can see how much we can stand to gain by focusing on ventilation training. It also becomes clear that training the muscles of ventilation is vitally important to increasing our total lung volume and making that much more air available to our body. Secondly, and probably most importantly, by increasing our lung volume and ventilatory capacity, we can allow more alveoli to be in contact with the outside air, which tremendously affects our respiratory efficiency and will concurrently influence our endurance levels and fatigue thresholds.
Section Two Outline:

1. Oxygen and the body
2. Carbon dioxide and the body
3. Fatigue

**How Oxygen and Carbon Dioxide affect Performance**

At some level most of us that train to excel in athletic disciplines know that oxygen is important to our functioning. We also know that our bodies create carbon dioxide as a waste product and it is important that our bodies get rid of it. What we may not know is just how many ways these two gases influence our functioning capacity.
It is easy to fall in the trap of thinking that ventilatory training is only important to endurance athletes. Nothing could be further from the truth. The fact of the matter is all athletes and fitness enthusiasts must encounter and cope with fatigue.

Fatigue is influenced by many factors two of the main factors are carbon dioxide and oxygen. At this point we all know that the one of the key ways to increase the availability of oxygen and decrease the amount of carbon dioxide is through ventilation.
The Role of Oxygen

The first thing we need to understand when it comes to oxygen is how the body uses energy. Glucose is burned in cells to produce energy. The mitochondria are chiefly responsible for this function in cells. Mitochondria convert glucose into ATP which is the fuel the rest of cell uses for energy. Once the cell uses an ATP molecule a byproduct of ADP is produced. ATP is used very quickly within cells because of how easily it is broken down and the energy it releases. ADP is reconverted back into ATP by creatine phosphate and the oxygen pathway. To illustrate just how important oxygen is in cellular metabolism, one can look to organisms that don’t require oxygen for respiration. These organisms can produce 2 ATP molecules for every glucose molecule that is metabolized. Organisms that use oxygen can produce 36 ATP molecules for every glucose molecule metabolized. Long story short, your muscles can work much, much harder and longer when oxygen is readily available than when it is not.
The Role of Carbon Dioxide

Carbon dioxide has three primary roles in the body. The first of which is it is a safe way for cells to get rid of the by-products of cellular metabolism because of how easily it leaves the cell. The second is carbon dioxide makes the hemoglobin on red blood cells more sensitive to oxygen so they can carry it easier. Lastly, carbon dioxide is a chief regulator in maintaining blood pH, preventing the blood from getting too acidic. Why is this important? Well let’s use hyperventilation as an example. If you sit in your chair and breathe as fast as you can, you get light headed. Why might this be? You’re breathing faster than normal, and you are getting more oxygen in your blood than you need, shouldn’t the opposite happen? No. Why? You are expelling carbon dioxide too quickly. This causes you to retain LESS oxygen which makes you light headed. Remember carbon dioxide in the right amounts allows hemoglobin to bind to oxygen easier.
How Carbon Dioxide and Oxygen influence fatigue.

You know that general feeling of fatigue and exhaustion? We are all familiar with it in some way, shape, or form. It starts in your legs...you keep pushing. It moves to your chest...your chest tightens. It becomes harder to breathe...your breaths start to become shallow and ineffective. Then your whole body begins to burn. Why does this happen? Acidosis.

When we work at extremely high capacities, our cells use more glycogen and lipids (sugar and fats). The problem with this is they produce nasty acidic byproducts. These byproducts need to be expelled through our lungs via the pulmonary system (heart and lungs) and to some extent by our kidneys. If we
can’t get rid of the byproducts as fast as we burn through our fuel we become acidic. This causes a generalized or localized burning sensation which is the onset and progression of fatigue.

We could have all of the oxygen in the world which would help us burn our fuel fast, but if we can’t get rid of the smoke (carbon dioxide) the flame burns out, and with it comes acidosis (our bodies do not like to be acidic, and we they are, they let us know it). The body has a built in protection mechanism that prevents this from happening it is called the metabore-reflex. We will go over this topic in greater detail in section three.
Section Three Outline:

1. Why breathing efficiency is important – summary-
2. Metaborereflex
3. Primary breathing muscles
4. Accessory Breathing muscles

Now we know why breathing is important.

At this point we should have a clearer picture of why breathing is important at both a gross level (lungs, circulation, etc.) and at a cellular level. We need optimum levels of oxygen to help us burn our fuel faster. On the other hand, we need to expel carbon dioxide as fast as we are burning fuel OR acid builds and
builds, and we fatigue until exhaustion. Lucky for us our bodies designed a device to take care of that for us, the lungs. However, our lungs may not be able to meet our demands.

Most academic literature on this subject will tell us that breathing in and of itself may not completely meet our oxygen and carbon dioxide expenditure demands. The reason for this is we can only take oxygen in and expel carbon dioxide at the alveolar level. So what’s the problem? Well our breathing musculature may not be strong enough to expand our lungs enough to get the air in our lungs to most of the alveoli. This gap between the alveoli and the bronchioles where the air gets trapped so to speak is called “dead space”.

The best example of this is a person running for the first time in three years. They start of fine, their breathing isn’t labored. But, before long, they start
breathing deeper and faster, and for a short time this works. Once they get halfway down the block they notice that they are breathing faster and shallower, and despite the fact they are breathing FASTER, they notice they are short of air, winded so to speak. Their legs start to burn, their back gets tight, they start to slow down, and then those beloved side cramps kick in. We have all been there at some point, now we know why.

Let’s take a look at the example above in detail. To begin with, they are able to meet their oxygen demands, and carbon dioxide expulsion requirements. However, a little while later, their demands increase. The lung musculature accommodates which allows them to take deeper breaths. Remember, a deeper breath allows the air in the “dead space” to reach the alveoli so air exchange
can occur. Then all of a sudden, their breaths become shallower and faster.
Why? Their lung musculature is starting to fatigue. Shallow breaths = more “dead space”. This usually results in faster shallower breaths and less and less air exchange. Then something funny happens, our body kicks in with a protective reflex to help us compensate for this, the metaborerereflex.

There are special nerve endings in the lung musculature and around the primary arteries near the heart that let our body know that we are burning fuel very fast but we are not getting rid of the waste fast enough. So our body reflexively constricts the arteries that go to our extremities to reduce the oxygen going to them. If we burn fuel too fast and become more acidic than our body can
handle, it will shut down. So it makes sense that the body REDUCES the oxygen getting to tissues so that the blood can get more of the acidic elements out. This is the same reason why the metaboreflex DILATES the venous system (blood leaving the muscles) so the waste products can be expelled faster. This creates a problem for an athlete however. If less oxygen is getting to the muscles to perform work, they burn less fuel. When they burn less fuel they can’t do as much work. In addition to this, there is an abundance of acidic byproducts that need to be expelled. The worst part of this whole mess is that most people’s lung musculature is weak, leading to shallow ineffective breaths, which does not allow the body to catch up. We can all do the math from there.
The primary muscles involved in breathing.

The two main muscle groups involved in breathing are the diaphragm and external intercostal muscles. The diaphragm is a thin sheet of muscle located underneath of the lungs. When the diaphragm contracts it moves closer to the pelvis. This allows the lungs to expand downward. The second primary muscle group involved in breathing is the external intercostal muscles. These muscles are found between the ribs and are responsible for expanding the ribcage to increase the amount of space in the ribcage for the lungs to expand outward. Together these two muscle groups expand the space in the rib cage downward (diaphragm) and enlarge the rib cage outward (intercostals).
There are a whole host of other muscles that are involved with breathing. However, these muscles are considered to be accessory muscles. Accessory muscles are usually used when the primary muscles of breathing fatigue or are insufficient in expanding the chest cavity to a maximal volume to meet increasing demands. These muscles are not suited to meet the demands of breathing, and as a result, if used for breathing for prolonged periods (i.e., primary muscle fatigue) fatigue and cramp easily. These muscles include the scalenes, latismus dorsi, pec major-minor, and multiple others. Unfortunately for many of us, our primary breathing muscles are relatively weak in comparison.
to the other muscles of our body. So it makes good sense to see that when these muscles give out and accessory muscles take over, that we are not getting the lung expansion we need to fill the “dead space” in our lungs to maximize alveolar atmospheric exposure. The other thing we realize is that irritating side cramping and chest tightness could be avoided if our primary muscles can stay engaged longer. It also becomes evident that this increased lung expansion and increased alveolar atmospheric exposure allows us to get more oxygen in our body and more carbon dioxide and acidic waste products out, maximizing our cardiovascular performance, increasing our sport specific workout tolerance, and minimizing the effects of fatigue and muscular exhaustion.
Section Four Outline:

1. HPVT High Performance Ventilatory Training
2. The next generation training implement: Elevation Training Mask 2.0
3. Applications

Our ventilator muscles (breathing muscles) are weak, now what?

The next logical progression is to find a way to strengthen the primary musculature involved in breathing. There are techniques and protocols available to us that can accomplish such a feat. The beauty of HPVT is it is not as tricky as
you might think. The beauty of the ventilatory musculature is that it is intimately intertwined with our core muscles. These two groups work hand in hand when it comes to breathing and stabilization. Therefore it stands to reason that performing ventilatory training in conjunction with core training will maximize our training benefit. The Journal of Applied Physiology did a study showing that diaphragm musculature increased in concert with sit-ups and bicep curls. They concluded that the diaphragm needed to get stronger to oppose the restrictive forces of the expiratory muscles of breathing (namely the abdominals). This is great news for the fitness community and athletes alike, it means that we can combine our HPVT with our regular training regime to attain a spectacular cross-training effect that will directly translate to better performance per unit of
effort. The one problem with breathing exercise is that it takes hours and hours of tedious practice to master. It is also very difficult to control and monitor our breathing depth while we are working out, exertion has a funny way of messing with our focus (that is probably why nature decided to make breathing mostly automatic, nature must have knew we had other things to think about than breathing). Posture and breathing depth (the two key ways to improve primary ventilatory musculature contraction strength) are just too hard to maintain when training at high intensities, and for prolonged efforts.
Lucky for us there is a training implement designed to strengthen our inspiratory musculature for us while we train in our specific areas, The Elevation Training Mask.

The Elevation Training Mask is an ingenious training tool that applies resistive principles to breathing by increasing and decreasing air resistance via special patented pending valves.
As you can see from above, the sleek and lightweight design of the Elevation Training Mask makes it very easy to use in your day to day training efforts. The applications of this training implement are endless. If you love doing yoga for example you are keenly aware of the relationship between breath and postural control.

Runners the world over know how agonizing being short of breath can be when they are trying to train. Even the high school football player can identify with taking breath after painful breath in the fourth quarter yet still feel short of breath and exhausted. The inventor of the Elevation Training Mask wanted nothing more than making those moments a thing of the past.

The developers at Training Mask believe that with their revolutionary product and your commitment to training the two scenarios above may become a thing
of the past. The next two sections outline a baseline training regime you can do with the Elevation Training Mask in your specific exercise and athletic areas of interest. These sections also show you how to adjust your mask and give recommendations on when to adjust the resistance of your mask while you train.

NEXT SECTION – PUTTING TRAINING 2.0 TO USE!
High Performance Ventilatory Training

HPVT Illustrated Training Guide

A number of studies have highlighted the benefits of core training. It hasn’t been until recently that new studies have shown how effective IMT can be in terms of increasing performance. Moreover, your core musculature and IMT muscles go hand in hand; they are in essence, the very same muscles. It is for this reason that HPVT incorporates core training postures within the framework of its training system.
Although HPVT uses core training principles and postures, its emphasis is in training the IMT musculature. Your core muscles work in a bracing and stabilizing fashion throughout your day. Therefore, we are going to train those muscles isometrically (hold a contraction at various points within its range of motion) while at the same time performing our breathing exercises during the hold phases of our core muscle exercise contraction. This form of training directly simulates how the core musculature and IMT muscles work together and will significantly increase the training benefits of each in a synergistic fashion.
Exercise 1 - *Diaphragmatic Breathing in Hook Lying Position*
Protocol: Perform 6 breaths per set with a 5-0-5 cadence (5 seconds inhale – 0 second hold – 5 seconds exhale) repeat this for 2-4 sets.

Key Points of Emphasis: Use diaphragmatic breathing while performing your breaths. You accomplish this by bringing your belly button into your lower back on each inhale, and letting your belly button rise into a ‘pot belly’ position on each inhale.
Exercise 2 - *Isometric Abdominal Crunches*
Protocol: Elevate your shoulder blades off the floor without bending at your pelvis.

Once you reach the top of the maneuver inhale for a count of 6 seconds then exhale for a count of 4 seconds, then slowly lower your back down until it’s flat on the floor. That constitutes as one repetition. Although six reps may not seem like much, you are actually ‘under tension’ for 60 seconds each set. Repeat this for 2-4 sets.

Key Points of Emphasis: Do not bend at the waist during your crunch; this activates your hip flexors. Slowly elevate your shoulder blades off the floor until a full contraction is reached.
Exercise 3 - *Supine Full Hip Flexion Diaphragmatic Breathing*
**Protocol:** While lying flat on your back bring your knees as close as you can get to your chest. Grasp your knees with your hands. Once you are holding onto your knees, start your breathing exercises by using a 6-0-4 cadence. After you complete your breath, release your legs and lie flat on your back again. Repeat this process for 6 breaths. Lastly, complete 2-4 six breath sets.

**Key Points of Emphasis:** It will be easy while you are in this position to begin to use upper airway muscles to do your breathing exercise. Remember to use the same diaphragmatic technique in exercise one during this exercise.
Exercise 4 - Standard Flat Plank Core Exercise
Protocol: Assume the plank position by lying flat on your stomach and moving onto your toes, while supporting your upper body with your elbows. MAINTAIN a flat back at ALL times while in the plank position. Commence your breathing exercise by using a 7-0-3 cadence. After a full breath cycle is completed rest, (while still maintaining your plank) and repeat your 7-0-3 breaths until you reach 6 breaths. Perform 2-4 sets of planks with a 7-0-3 breath cadence. **Key Points of Emphasis:** All six of your resistive breaths are to be completed in the plank position. Do not leave the plank position at all during your 6 breaths; you only leave the plank position after you complete your 6 full breaths.
Exercise 5 - *Bridges*
**Protocol:** Start by lying on the floor with your knees bent. Pushing through your feet elevate your pelvis off the floor until you reach the midpoint of the movement. Once at the midpoint, start your breaths using a 5-0-5 cadence. After you complete that breath, push through your feet again until you reach the top of the movement. In the full bridge position, begin a second breath using the same 5-0-5 cadence. Complete 3 breaths at each phase of the motion. Repeat this exercise for 2-4 sets. **Key Points of Emphasis:** Belly breathe, belly breathe, belly breathe. This point cannot be understated. Diaphragmatic breathing is the whole key to this workout; it is easy to forget this, especially as you begin to fatigue.
Exercise 6 *Segmental Rotational Abdominal Crunch*
**Protocol:** Lie on your back with your knees flat in the ground pointed at the wall. Crunch up using the technique illustrated in exercise 2. Once you reach the top of the maneuver execute a breath using a 6-0-4 cadence. Repeat this for a total of six crunch-breaths.

During the second set make sure your knees are pointing in the opposite direction.

Complete 4 total sets while alternating knee position for each set.
Exercise 7 - Flat Supine Diaphragmatic Breathing, Arms over Head Holding a Ball
**Protocol:** Lie flat on your back with your hands overhead holding a broomstick. The point of this final exercise is to stretch out your IMT musculature and execute diaphragmatic breaths to perform a cool down. Complete 6 breaths using a 5-0-5 cadence. Execute 5 total sets of this maneuver.
Exercise 8 – Practice Breaths in Short Sitting

At least once daily, preferably in the morning, sit up straight (observing good posture), practice your diaphragmatic breathing for 5 sets of 6 breaths using a simple 5-0-5 cadence. At least once daily, preferably in the morning, sit up straight (observing good posture), practice your diaphragmatic breathing for 5 sets of 6 breaths using a simple 5-0-5 cadence.
Training Mask 2.0 – Manual

First and foremost thank you for purchasing the Training Mask 2.0.

Be ready to get the most out of your breathing abilities. Our multi-level resistance system reduces air flow through our patent pending flux valve system. Training Mask 2.0 promotes increased lung capacity by forcing you to inhale fuller deeper breaths. When your body adapts to the resistance your lungs will be trained to take deeper breaths and use oxygen more efficiently. While using Training Mask 2.0 the conditioning of your lungs significantly increases along with endurance and diaphragm strength. Training Mask 2.0 will benefit your respiratory system as your overall cardio and endurance will improve with continued use.
Training Mask 2.0 “ELEVATION” Resistances (Figure 1. Below)
Seen in Figure 1 are all the resistance pieces that are included in your package when receiving it. When opening your package it will come with “1 hole open resistance caps.” Also tucked in behind the inside lip of the rubber will be “4 and 2 hole open resistance caps”. You will need these if you plan to train at a lighter level to help acclimate yourself to the Training Mask 2.0.

Snapping on and off resistance caps have never been easier! We have made the resistance levels changeable by simply lifting up the cap from the bottom.

**Centering the caps: THIS IS VERY IMPORTANT!**

When putting the caps on, the MALE POST from the Base must be aligned with the FEMALE alignment hole on the resistance cap. Not aligning this WILL CAUSE YOUR MASK NOT TO WORK! It simple causes the “FLUX” valve plunger to not seal correctly.
“Elevation” Resistance pieces, air flow and correct position is shown in diagram above.
3,000 Ft
in Altitude Resistance

“ELEVATION” ALTITUDE RESISTANCE LEVEL

NOTICE: Both side (R,L)Flux Valves are turned to the INLET position.
HIGH PERFORMANCE VENTILATORY TRAINING

TRAINING MASK 2.0

“ELEVATION” ALTITUDE RESISTANCE LEVEL

6,000 Ft
in Altitude Resistance

NOTICE* Both side (R,L)Flux Valves are turned to the INLET position
HIGH PERFORMANCE VENTILATORY TRAINING

TRAINING MASK 2.0

“ELEVATION” ALTITUDE RESISTANCE LEVEL

9,000 Ft
in Altitude Resistance

NOTICE: Both side (R, L)Flux Valves are turned to the INLET position.
HIGH PERFORMANCE VENTILATORY TRAINING

TRAINING MASK 2.0

“Flux Vale Flip”

Directional air flow

 Patent Pending Resistance Breathing Device – Training Mask

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HIGH PERFORMANCE VENTILATORY TRAINING

TRAINING MASK 2.0

“ELEVATION” ALTITUDE RESISTANCE LEVEL

12,000 Ft
in Altitude Resistance

Flux valve must be turned around to shut off (R) Inlet
HIGH PERFORMANCE VENTILATORY TRAINING

TRAINING MASK 2.0

"ELEVATION" ALTITUDE RESISTANCE LEVEL

15,000 Ft
in Altitude Resistance

Flux valve must be turned around to shut off (R) inlet

Patent Pending Resistance Breathing Device – Training Mask
18,000 Ft
in Altitude Resistance

“ELEVATION” ALTITUDE RESISTANCE LEVEL

Flux valve must be turned around to shut off (R) Inlet
Ears must go through holes in strap for max stability
Peel cloth off “Hook” section of the neoprene sleeve. Then adjust to your face as you feel fit.
Correct Position of neoprene mask
Deep Breathe while resting
Training Mask 2.0

If you have any problems or are missing any pieces please do not return to the store!
Email : Suppor@TrainingMask.com

Comments questions or concerns please use the email address above.

We want to personally thank everyone who has made Training Mask a success!

For Distribution please contact sales@TrainingMask.com

MAILING ADDRESS: TRAININGMASK.LLC  2141 PLETT RD #307, CADILLAC, MI  49601

At this time, it’s time to put down this manual and get to work!