



Taku's Intervals[™] on the VersaClimber[™]

E-Book

An introduction to interval training utilizing the
VersaClimber.

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WHAT IS INTERVAL TRAINING?

High Intensity Interval Training or “H.I.I.T”, is a form of exercise performed in brief, intense bouts of maximum effort followed by active or passive recovery. HIIT trains and conditions both your **anaerobic** and **aerobic** energy systems simultaneously, making it an extremely time efficient and effective form of exercise.

H.I.I.T increases the amount of calories you burn during workouts due to the ability to repeatedly reach a maximum level of effort. Intermixing these max efforts with brief recovery bouts, allows participants to work harder in less time than a standard, steady state workout. Some benefits of H.I.I.T training include: Causing metabolic adaptations that enable you to use more fat as fuel under a variety of conditions. This will improve your athletic endurance as well as your fat-burning potential. H.I.I.T appears to limit muscle loss that can occur with weight loss, in comparison to traditional steady-state cardio exercise of longer duration.

An added benefit of H.I.I.T style training is an increased metabolic rate up to 24 hours after training, due to an exercise induced recovery state known as **EPOC** (excess post-exercise oxygen consumption).

WHY USE THE VERSACLIMBER?

The Versa-Climber has been selected because it works the entire body as a unit rather than just the legs alone. The simple yet intelligent design of the Versa-Climber gives coaches and athletes the ability to customize their training over a broad array of intensities allowing for the attainment of widely varied conditioning goals. The low impact nature of Versa-Climber workouts reduces the potential for overuse injuries by lowering or eliminating impact on the joints as compared to more traditional running and or jumping based activities. Finally the Versa-Climber is a highly effective tool for enhancing the body's ability to process and buffer lactate as well as perform at or near the lactate threshold. Any delay in blood lactate accumulation that can be achieved through training is beneficial to performance.

There is so much myth, misconception and misunderstanding surrounding endurance training or "Cardio" for sports, it is a wonder anyone ever reaches their goals. We trust this information will help clear up some of the confusion and set you on the path towards more efficient and effective training. We've decided to keep this article "science-lite" (a third less terminology than your regular science article) so let's define some terms that will come up later. If you need clarification on things or more detail on a certain subject, feel free to send Taku an email at taku@hybridfitness.tv

HOW TO USE THE VERSACLIMBER

The VersaClimber is designed for the athlete to stand vertically erect and in an upright posture, on two-foot pedals while holding two hand grips. The machine is built at a 75 degree climb angle that serves to decrease the isolated weight bearing on the knees, slightly unload the lower back, and to distribute the load more equitably throughout the entire torso.

- Regardless of current conditioning level, start slow and take a 4" to 6" step height.
- Only take a step or stroke length that feels comfortable.
- Do not take long steps or you will tire quickly!
- Although a step height of up to 20 inches is available, it is not necessary to take the maximum stroke length to receive cardiovascular and strength benefits.

In order to initiate the climbing motion, first step on the lower pedal and hold the lower handgrip. Then step onto the higher pedal and hold the higher grip. Level the foot pedals and adjust the handgrips to shoulder height. Turn on the display by pressing the on/off switch. If the display is already on, turn the switch off, then back on to reset.

IMPORTANT NOTES FOR FIRST-TIMERS!

1. Be able to complete the “Aerobic Climbing Program” 3 times a week at their target heart rate before performing any interval training programs.
2. Start by using no resistance
3. Taking short 4-6 inch steps, like jogging in place. To increase the workload, increase the stepping speed and / or increase the step height.
4. Have no resistance while climbing for first few sessions.

HOW TO USE HYDRAULIC RESISTANCE VERSACLIMBER MODELS

The knob located near the bottom of the electronic display module can identify hydraulic resistance models. The knob is used to adjust the speed of motion. The athlete can vary the resistive force by pushing or pulling harder or easier against the set speed. To increase the speed (reduce the resistance) turn the knob counter clockwise, to reduce the speed (increase the resistance) turn the knob clockwise.

Hydraulic resistance allows the trainer to control the speed and/or resistance of climbing. Increasing the resistance serves the following functions:

- Increases resistance during climbing
- Decrease the speed of climbing
- Produce desired sport specific speed/force of movement

In order to reproduce resistance level for future bouts, close knob completely clockwise, then open counter clockwise to desire level. This allows repeatability.

Caution: It is recommended that you begin all first time users at no resistance and when you decide to increase the resistance, increase it slowly over a number exercise sessions.

LOWER BODY ISOLATION

For isolated leg lifts and leg presses, adjust the velcro foot straps to fit snug on the feet. Set the rate of motion with the hydraulic control knob. Grasp the hand rails to anchor the upper body. Maintain the foot in horizontal position while lifting against the foot straps. Perform the desired activity then recover as you would between intervals. See Interval Training, Page For the advanced athlete, a "quad burn" can be achieved by squatting down (while holding the stationary hand rails) and performing a stepping exercise. Use the foot straps to secure the feet on the pedals and bend the knees until the thighs are approximately horizontal and the knees straddle the machine. Start with short steps, pushing down with one leg while lifting up with the other. Maintain the body weight within the base of the machine. Step in the squat position until quads "burn out" or quad fatigue occurs. This exercise can also be performed as an interval workout set.

UPPER BODY ISOLATION

The arms, shoulders, chest and back can be isolated by standing on the base plate in front of the VersaClimber and pushing and pulling the moving handles. Position the handles so that they are within reach when the arms are fully extended. Select the desired rate of motion with the hydraulic control knob. With your hands in the start position (palms facing away from you), concentrate on pulling down right then left with your latissimus dorsi (side of back), posterior fibers of deltoids, (back of shoulders) and the triceps brachii (back of arm). This flexion on one side of the body with extension of the other side of the body will tone and trim your sides, stomach, back and back of arms. To isolate more chest, (pectoralis group), biceps brachii (front of arms), anterior deltoids (front of shoulders) and stomach (abdominals) perform the same pulling action with a reverse grip (palms facing you). Both sets of muscle groups, front and back, can be worked by simultaneously pushing and pulling right and left. During this upper body only activity, a full range of cyclic rates and stroke lengths can be selected.

DEFINITIONS

Aerobic:

The breakdown of energy in the presence of oxygen. Associated with long, slow-duration , low-intensity activity.

Anaerobic:

The breakdown of energy without the presence of oxygen. Associated with brief, intense activity.

E.P.O.C:

Excess Post-exercise Oxygen Consumption. An exercise-induced recovery state where calories continue to be burned at an increased rate.

H.I.I.T:

High Intensity Interval Training - for example sprinting as fast as possible, resting briefly, then repeating.

L.S.D:

Long Slow Distance exercise - for example jogging continuously for 60 minutes.

O.B.L.A:

Onset of Blood Lactate Accumulation - more commonly know in exercise circles as the Lactate Threshold ("LT"). LT is the exercise intensity at which lactic acid starts to accumulate in the blood stream.

R.P.E:

Rate of Perceived Exertion. A reference scale designed to provide exercisers with easily understood guidelines regarding exercise intensity.

S.A.I.D:

Specific Adaptations to Imposed Demands. A fundamental principal of exercise science which states that the body specifically adapts to the demands placed on it.

VO2Max:

Describes the largest quantity of oxygen your body can consume or process while staying within the aerobic energy pathway. VO2Max is measured in milliliters of oxygen per kilogram of bodyweight per minute of exertion. (whew!)

INTRODUCTION TO TAKU'S INTERVALS

There are three different systems in the body that are involved in the breakdown and production of energy. They are the:

- **Phosphagen**
- **Lactic Acid**
- **Oxidative**

These systems function on a continuum, whereby no one system is ever totally responsible for all the energy needs of the body at one time. The more brief and intense the effort required, the more the phosphagen and lactic acid or “anaerobic” systems are used.

Brief + Intense = Anaerobic

The S.A.I.D principal states that the body will adapt specifically to the demands placed on it. If you want to improve your fitness for a certain activity, it's best to develop conditioning programs that utilize the same energy systems as your chosen activity. Many sports commonly associated with being “aerobically fit” actually have a high anaerobic component to them. Dynamic flow sports such as basketball, soccer and lacrosse can *ALL* benefit from training that enhances anaerobic capacity.

Combat sports such as judo, boxing and wrestling are primarily anaerobic in nature. In combat sports one must acquire the ability to work at maximal and near maximal levels for short bursts, actively recover, then do it again. In boxing, the athlete fights for two or three minutes and then gets to rest for one minute between rounds. The actual rounds, however, are made up of these burst/recover intervals. At no time during a fight is the athlete truly resting. Even pure Brazilian Jiu-Jitsu has this burst/recover element. While a match is in progress, the athlete never gets a total rest. If you are fighting in NHB / Vale Tudo, it doesn't matter how long the rounds are, the basic requirements remain. If you are conditioning to fight, skip the “road work” and do High Intensity Interval Training, or H.I.I.T instead.

While doing these H.I.I.T workouts, be sure that you are bursting to maximum and near-maximum levels. Hopefully it is starting to sink in that for combat sports (and many other sports, for that matter) L.S.D training alone is ineffective. Once a base level of fitness is achieved, jogging or running at a steady pace continually for 20, 45 or even 60 minutes at a time is really a massive waste of valuable training time. To maximize your efficiency while training “cardio” for sports, build your routine around High Intensity Interval Training.

H.I.I.T = Maximum Efficiency

When designing your program, it helps to have a way to measure intensity. We will use a simple but highly effective method known as an R.P.E Scale. The R.P.E or Rate of Perceived Exertion scale allows the individual to subjectively rate his/her feelings during exercise, taking into account personal fitness level, environmental conditions and general fatigue levels. Perceived exertion ratings correlate highly with measured exercise heart rates and calculated oxygen consumption values. The R.P.E scale has been found to be a valuable and reliable indicator in monitoring an individuals’ exercise tolerance and is often used by fitness professionals while conducting graded exercise tests. Here is an example of how to create your own personal R.P.E scale. We’ll use the numbers 0 - 10, assigning a relative work level to each number. For example:

0 = nothing at all (sitting at home watching T.V)

and

10 = very, very hard (running a full-out sprint for 200-400 meters)



RPE SCALE

1	Very Easy
2	Easy
3	Light
4	Light / Moderate
5	Moderate
6	Somewhat Hard
7	Hard
8	Really Hard
9	Very Hard
10	Very, Very Hard (Maximal)

One may actually use this R.P.E scale as a way to measure both intensity and progress. If you are training on the VersaClimber at a resistance level of 3 complete knob revolutions and you feel you are at an “8” on your personal R.P.E scale, you know you have improved when your R.P.E for the same resistance level has dropped to a “6” after several sessions. In the following program, I will make suggestions for R.P.E intensity levels to work towards and it will be up to you to match those levels of intensity to your current ability using your personal R.P.E scale. The program consists of three progressive 4-week phases designed to build and maintain a base level of both aerobic and anaerobic endurance.

THE PROGRAM

Always begin each workout with a 5-minute warm-up at a level of 4 - 5 on your personal R.P.E scale. Follow this with 5 minutes at a steady state pace that is just starting to get hard by the end - about level 6 - 8 on your personal R.P.E scale. Then reduce the intensity level back to level 4 - 5 on your personal R.P.E scale and do another 5 minutes. This 15-minute warm-up remains the same throughout the first three phases of the Taku's Intervals program. After this 15-minute period, proceed immediately to the high intensity intervals, which are described below. During the intervals, you should be pushing hard, striving for about level 9 - 10 on your personal R.P.E scale. Always finish your session with a 5-minute cool down, lowering your work rate to a level 3 - 4 on the R.P.E scale.

Modified Workout Intervals for Beginners

(4-Week Cycle)

Phase 1:

Week 1:	4 x 30 seconds work + 30 seconds recovery
Week 2:	4 x 45 seconds work + 45 seconds recovery

Phase 2:

Week 3:	4 x 60 seconds work + 60 seconds recovery
Week 4:	4 x 75 seconds work + 75 seconds recovery

Ready for more?

Taku's Intervals are next!

Taku's Intervals

(12-Week Cycle)

Phase 1:

Weeks 1 & 2:	4 x 90 seconds work + 90 seconds recovery
Weeks 3 & 4:	5 x 60 seconds work + 60 seconds recovery

Phase 2:

Weeks 5 & 6:	6 x 45 seconds work + 30 seconds recovery
Weeks 7 & 8:	7 x 30 seconds work + 20 seconds recovery

Phase 3:

Weeks 9 & 10:	8 x 20 seconds work + 10 seconds recovery
Weeks 11 & 12:	10 x 20 seconds work + 10 seconds recovery

The first phase will lay the foundation for the following phases. obviously you can't sprint for 90 seconds at the same pace you can keep up for a shorter duration. Your job is to go as hard as you can for the given time specified. During recovery periods you may go as slow as you wish, but **DO NOT STOP MOVING!** Active recovery is always better than passive recovery and will help remove the by products of your anaerobic overload more effectively. Once you reach Phase 3, you can remain there in maintenance mode. Avoid boredom and stale training by changing elements of your training every 2 - 3 weeks as well as continually striving to train at higher levels while maintaining or improving your R.P.E.

Good luck with your training!



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Keep Training Hard!

- The Hybrid Fitness Team

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