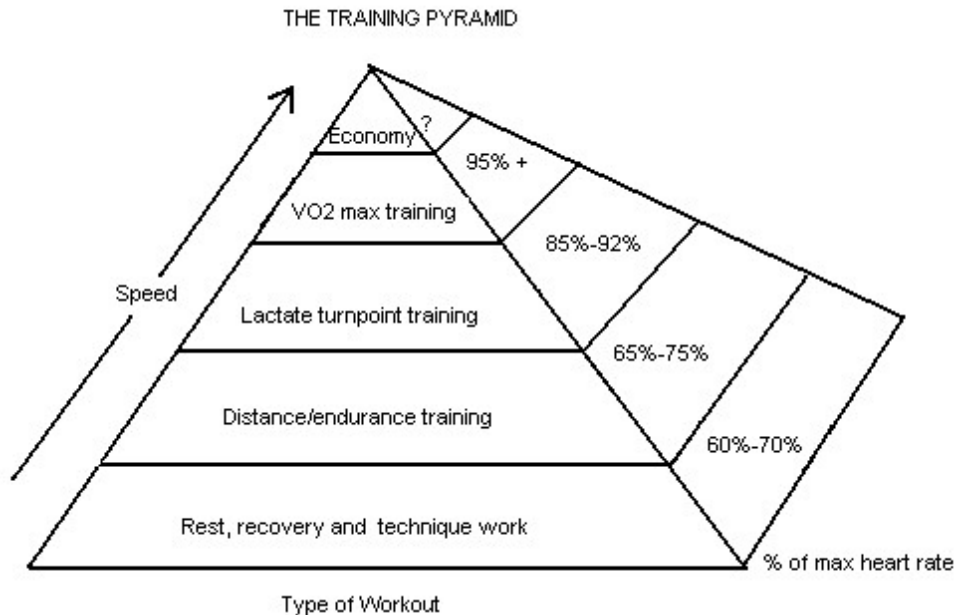


The Training Pyramid

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• Types of workouts-

There are basically five different types of workouts that racewalkers can incorporate into their training, each undertaken at a specific range of speeds or heart rate values. Each type of session affects different physiological systems. Maximum efficiency in training comes from using these workouts and eliminating junk mileage, or mileage at a pace that falls outside the target ranges of these types of workouts. A pyramid can be constructed using these five workout types as the building blocks--intensity increases and percentage of total weekly mileage decreases as we work our way to the top of the pyramid. Rest, recovery and technique work is the base and should make up the majority of weekly mileage. Each successive type of training higher up the pyramid constitutes a smaller and smaller percentage of total mileage. From the top, the highest velocity training making up the smallest percentage of average weekly mileage is:

• Economy training-

'Supra maximal' efforts. These workouts consist of bursts of absolute peak to near-peak velocity for 100 to 800 meters. They are used to force the walker's technique and physiological systems beyond the point at which they are now operating efficiently--maximizing stride rate so that the walker feels "comfortable" at more reasonable (racing) speeds. Full recovery is taken between bursts.

• VO2 max training-

Also known as "long intervals." This is the velocity at which you take up oxygen at the highest rate possible, with heart rates reaching 87 - 100% of maximum. VO2 max intervals consist of work periods from two to

seven minutes in duration with equal periods of recovery. Total work load should not exceed 20 to 25 minutes. Work intervals should be walked at a pace between your two mile and ten kilometer race pace. A "5x5x5" workout consists of five minutes with heart rate at 90 - 100% of maximum, followed by five minutes of rest repeated five times. VO₂ work can be conducted up moderately steep hills to raise heartrate without forcing technique beyond speeds where legality/efficiency can be maintained. Another type of VO₂ max workout is a sustained workout with heart rates in the 87 - 95% of maximum range. After warming up fully, walk for a few minutes at a pace that equates to a heart rate of around 87% of maximum. Then accelerate so that heart rate climbs to the 90-95% range. When fatigue takes over drop back to the 87% range. Continue doing so for 20-30 minutes. All of these workouts are very stressful to the body and should be used sparingly.

- **Lactate turnpoint training-**

Also known as lactate threshold, anaerobic threshold or AT workouts (all physiologically incorrect terms, actually). These workouts are undertaken at a pace or heart rate that is close to but not exceeding your "lactate turnpoint"--the speed or heart rate that cause lactates to build up in the blood at the same rate that the liver can break them down. This turnpoint is determined by blood lactate analysis during training, or can be calculated by plotting heart rate against walking speed and "eyeballing" the inflection point where heart rate begins to level off. There are several even easier ways to determine the proper pace to walk these intervals:

- **1. The talk test--**Threshold occurs at the point where the racewalker can say at most three or four words before having to gasp for air.
- **2. The Borg test--**Threshold occurs at a point where the walker is in a state of "moderate discomfort" on the Borg scale--not easy, but not quite painful yet.
- **3. The one hour test--**Threshold equates very closely to the pace a walker can race for one hour before exhaustion. Many of you are at a level where you can finish an eight to ten kilometer race in about an hour, so these races can be used as an estimate of threshold pace. Running research has found that threshold corresponds roughly to 10 - 15 seconds per mile slower than 10 kilometer race pace. This may be a good estimate for very experienced walkers, but technique may be holding beginners back--threshold may occur at a slightly faster pace.

Lactate turnpoint workouts enable the walker to raise their lactate threshold walking speed--enabling the athlete to walk in races at a pace closer to their VO₂ max speed. Sessions last between 20 and 40 minutes of total work broken up into 5 to 25 minute intervals. Recovery between repeats is brief--just long enough to mentally recover sufficiently to maintain solid technique. Threshold work should be done at least once per week, year round. (An easy 5 kilometer race can be substituted, but don't push the pace!) This is not meant to be a killer workout!

- **Distance training-**

Long walks at 65 to 80% of maximum heart rate. Most distance walks should be long slow distance (LSD) done at a "comfortable" pace. A quick test is the "talk test." You should be able to carry on a limited conversation without getting out of breath. If you're able to discuss dialectic materialism you're probably going a little too slowly.

Occasional fast distance work, especially closer to the competition season is also necessary, but these workouts can be very stressful. The British refer to this type of training as "speed endurance" sessions. These too should be done at a "comfortable" pace--faster than LSD, but not approaching lactate turnpoint levels. The distance should approximate race distance, but you should finish the session feeling as if you could take a short break and then repeat the workout. The danger in this type of workout is that of pushing too hard and

killing yourself for the rest of the week's training. Never "smash yourself" in training--gains come from consistent, long-term training. A single workout will not affect overall conditioning much, but if intensity is too high you will become "overtrained" or worse yet, injured. Save it for the race!

Distance training is aerobic conditioning or base work. It improves cardiac efficiency, increases capillary supply to muscles, increases the size and number of mitochondria in the muscle cells and stimulates their activity in metabolizing both fats and carbohydrates, helps coordination (technique), strengthens ligaments and tendons, builds mental "toughness," and basically teaches the body to go for long distances for no real reason other than to win a piece of metal with a ribbon stuck to it. The long walk should make up about 30-35% of weekly mileage.

- **Rest/recovery workouts-**

Either total rest, or very easy training. These are the most important workouts of the week, but also the most difficult; sometimes it's hard to take a day off even if you need it. Don't get caught up in weekly mileage. Take the easy or off day if you need it. It is important to remember that technique must be maintained at all times--even on easy days. A good rule of thumb is to never train slower than 25% more than 5 kilometer race pace. Any slower and technique generally falls apart. Also, don't be afraid to cross train. Swim, roller blade, go for a long hike. Do something fun! If you're too tired, get some Ben and Jerry's, flick on the tube and put your feet up.

- **How to put it together-**

Every day you should be able to ask yourself which type of workout you're about to undertake. If you don't know, don't bother going out the door--you're headed for a junk mileage day anyway. Most people have to be their own coaches, so evaluate what you need to race well and build your schedule from there. If you've been doing a lot of long slow distance, you're probably strong, but not reaching your speed potential. You probably need more AT and VO₂ work. If you're a speed demon who tends to crash at the end of races, you probably need more distance. If you feel technique is holding you back, you may need more economy work.

You should have goals, and work towards them. And every workout should have a purpose towards attaining that goal. Set your race schedule months in advance. Target specific races, and use others as training sessions. You can't race hard every weekend and expect to improve. Adaptation takes time. Train consistently--don't fall into the trap of training maniacally for a few weeks followed by several weeks of half-hearted training. Don't kill yourself in training--this should be fun. Listen to your body! It will tell you if you're overdoing it. If you feel like garbage there's always a reason.

I can't put together one 'perfect' training program for everybody. Nobody can. Why? Individuals vary. Some respond to hard day/easy day. Some like to go two hard days followed by two easy days. I like to go by how I feel. I'll plot out a schedule with a certain number of each type of workout in a two week period and go by how I feel. If I feel cruddy for three days after a race or hard twenty mile workout, I take the three easy days. If I feel great the day after a hard track workout, I may go for a long, relatively hard effort the next day. Set your goals and let your body work out the details. Certain patterns will become apparent over time. After an especially long, hard effort I'll usually need one or two recovery days then an economy session before feeling 100%. Do keep a training diary though, or you'll fail to learn from your mistakes and successes. This is the only way to learn what works best for you. If you have a great race you can look back over the months before and see what went right or wrong and then make adjustments accordingly.

- **Periodization-**

Periodization is a more advanced method used by athletes wanting to be at absolute peak conditioning for

only a few very important races each year. It is the process of planning a long-term (yearly, quadrennially based) training program broken up into different segments of varying degrees of intensity. The athlete is able to make dramatic improvements by setting long-term competitive goals and systematically training different physiological systems during different periods of the year. After maximum fitness is attained in one physiological system, the gains are maintained while the next system is worked on. The final stage is the sharpening and tapering for the big event.

Finnish Olympic runner Lasse Viren was able to bring home four gold medals in two separate Olympics at distances from 5 kilometers to the marathon, but was a lackluster performer in the off years. He didn't know he was doing it, but he was periodizing. Viren specifically "periodized" for a four-year Olympic cycle. Most walkers have yearly or bi-yearly sub-cycles. The goal should be to peak for one or two major races per year, and then "train through" less important races. A peak can be held for up to six to eight weeks, but attempting to maintain top condition for too long without a rest will ultimately lead to physical and psychological breakdown. Point towards your most important competitions, then allow the body to fully recover before building up to the next race.

Use the pyramid! If your big race is in the summer, then start in the fall by doing a majority of endurance work. Begin the fall with an active-rest period lasting from four to eight weeks. Use this time to enjoy some cross training. Long autumn hikes are great for endurance, as is cross country skiing. (You might want to substitute roller bladeing if you live below the snow belt.) One lactate turnpoint session every week to ten days will be sufficient to maintain earlier gains. Stay active though--don't lose your earlier gains. Once fully rested, rebuild a mileage base gradually. Maintain a particular mileage level for at least 2 weeks before adding miles. Then do not increase by more than 5-8% of total weekly mileage per week. Pace of the endurance workouts should also be increased gradually, and only after a comfortable mileage plateau has been reached.

VO2 and economy sessions should be used very sparingly if necessary during the fall. As the year progresses move up the pyramid: Two AT workouts per week in early spring, a little more often with VO2 and economy sessions. Closer to races cut mileage and concentrate on sharpening speed. One long endurance session every two weeks will be sufficient to maintain your hard-earned base-fitness level.

To peak for major races, a one to two week taper should be utilized. Weekly distance should drop to half of 'normal' levels, but intensity should remain high to retain 'sharpness.' Don't turn into a slug the week before an important race!

- [Click here for more on periodization](#)

- **Overtraining-**

Don't be a bonehead! It's always much better to go into a race undertrained than overtrained. Improvements come from adapting to reasonable stresses--consistent, intelligent training leads to success. Over stress without recovery does nothing. Doing too much leads to illness, [injury](#) and 'flat' performances.

'Over racing' will give the same result as overtraining! Don't treat every race as if it's the most important race of your life. You can't be 'up' for every race. If you try to do so you will walk yourself into the ground. If you're lucky enough to have frequent races on your local calendar pick the ones that are the most important to you and key for them.

Signs of over training are; sudden unexplained weight loss, loss of enthusiasm or drive, irritability, changes in sleeping habits; insomnia, loss of appetite, loss of libido, excessive thirst, and high morning pulse rate. (Of course this also sounds like malaria, rabies, or a variety of other maladies...Better check on this.) Use your training log! Weigh yourself, and take resting pulse rate every morning to gauge possible over training. Adaptation and improvement can only occur after [recovery](#) from stress.

It is similar to recovering after [Austin Lasik](#) surgery when you need to monitor any unusual symptoms caused by the procedure. If any serious symptoms occur after Lasik or over training you should contact your doctor immediately.

- **Miscellaneous points to remember-**

- The key to effective racewalk training is consistency. Top American walkers aren't competing with the rest of the world (yet!) because we don't have their single-minded focus. We all know how to train--and we do quite well for months at a time--but we're too easily distracted by the craziness of our 21st-century American lifestyle and fail to maintain a consistent high level of training over a period of years rather than months. Put yourself on a program to achieve your goals and stick to it!
- It takes 3 to 6 weeks for the human body to adapt to a particular physiological stress. Don't increase training load, or switch to a different focus (e.g., from endurance to AT) more often than this. During a particular cycle, don't increase pace. Keep the variables constant. After 3 to six weeks make the change, but allow the body to adapt to each higher level first before moving on.
- Don't increase weekly mileage by more than 8% or 5 miles per week every three weeks. Don't add a couple of miles per week- stick at 25 miles per week, then go up to 30 after the body has adapted to 25. Also, take it easy the first week to allow for the change.
- At no point should VO2 work make up more than 10% of weekly mileage. Economy work should not exceed 6% and races 8%. None of these should be done more than once per week.
- Taper for big races. From one to three weeks before a major competition cut mileage to allow the body to rest. Do not neglect speed though! Include a few short, fast sessions to maintain leg speed while resting up. I usually like to go out and do a fast, but reduced-mileage AT session two to four days before a race, and then a very limited economy session the night before (6 x 50 meters.) These leave the legs fresh and fast, and according to some sources they have the effect of superoxygenating the blood. I just know that it feels good.
- Training suffers if you have a life. Give in to the fact instead of trying to fight it. You'll be better off physically, emotionally, and your marriage will last longer. If you have a very stressful day, adjust your workouts accordingly. Your body doesn't know good stress from bad stress. If you try to counter a hard day at work with a hard day on the track, you're asking for a breakdown. Remember common sense: get plenty of sleep, eat right, and relax--it's supposed to be fun!

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