

TRIATHLON

PERFORMANCE
SOLUTIONS



www.triathlonperformancesolutions.com

Instructions...

This document is best used as a reference in conjunction with your Triathlon Performance Solutions (TPS) training plan. Although it covers many areas it is by no means an exhaustive guideline, so when you have any additional questions or you want to know more about any subject covered below please get in touch and ask away!

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Training Peaks:

TPS uses Training Peaks to communicate with you, and to monitor and adjust your training plan. After years of trial and error we have found Training Peaks to be the most user friendly and powerful online training tool available.



Although it is very user friendly it still takes some time to navigate around the entire site and to get completely comfortable with using all of the features available.

Updating your training regularly is vital for TPS to be able to monitor your progress, communicate with you and adjust your training where necessary. Over time it will become an invaluable database of your training history and this information can be used to inform future training decisions.

Every time you update your training online TPS receives an email giving details. This allows TPS to stay right on top of your progress and intervene immediately if necessary.

Training Zone and Testing Guideline:

This guideline is a general guide to training intensities. Heart rate, power and pace zones are athlete specific and can vary widely from one athlete to another, even if two athletes have similar performance profiles.

The most precise way to ascertain training and competition zones is by laboratory testing but field-testing is also very useful. All forms of testing are worthwhile only if repeated regularly.

TPS will ascertain your training zones through testing (either lab or field) and these zones will form the basis of your training program. These zones will be accessible for reference on your Training Peaks account, so when you see you have a 30min run at a steady intensity (for example) you can quickly reference your zones online.

Field Testing will take place on a regular basis and training zones will be updated where appropriate. Most testing will take the form of 30 minute Time Trials on the bike and run and 400-1000m Time Trials in the pool or race performances during the season.

Training Zones:

TPS now uses the same Training Zones as Joe Friel. The reason for this is that Joe Friel's training zones broadly match up to TPS's preferred ranges and, because of Friel's close ties with Training Peaks, it is easy to calculate and update training zones online. Another advantage is that the testing methods Friel uses to ascertain training zones are very simple and easily repeatable – 30min TT's on the bike and run and 400-1000m TT's in the pool. Race performances may also be used to update training zones. Training zones will be set based on:

- Lactate Threshold Heart Rate (LTHR) for the bike and run
- Functional Threshold Pace (FTP_a) for the run
- Functional Threshold Power (FTP_w) for the bike
- T – Time for the swim

Easy – Basic Aerobic Endurance training. This Training Zone improves the body's ability to metabolize oxygen efficiently by increasing capillary density, plasma volume and aerobic enzymes. This zone is the basis of all endurance training, especially long distance.

Run HR – less than 85% of LTHR

Run Pace – Slower than 129% of FTP_a

Bike HR – Less than 81% of LTHR

Bike Power – Less than 55-67% of FTP_w

Swim Time – More than 115% of FTP_a

Steady – Using the Upper mid to upper Aerobic system and into the Anaerobic (oxygen independent) system. This zone is the competition intensity for Ironman competitions for a well-trained athlete. A well trained athlete will compete in a half ironman race between this zone and the Tempo zone.

Run HR – 85% – 89% of LTHR

Run Pace – 114% – 129% of FTP_a

Bike HR – 81% – 89% of LTHR

Bike Power – 67% – 78% of FTP_w

Swim Time – 108% – 115% of FTP_a

Tempo – This training zone improves the body’s ability to transition between the aerobic and anaerobic state, generating but clearing lactic acid efficiently. This intensity is used mainly in repetitions and progressive sessions. In a well – trained athlete this is race pace for an Olympic distance event. A well trained athlete will compete in a sprint distance race between this zone and the Supra Threshold zone.

Run HR – 90% – 94% of LTHR
Run Pace – 106% – 113% of FTPa
Bike HR – 90% – 93% of LTHR
Bike Power – 78% – 90% of FTPw
Swim Time – 101% – 108% of FTPa

Threshold – This zone improves the body’s ability to clear and metabolize lactic acid in the muscles. This intensity can be sustained for a period of between 20 and 60 minutes depending on the type of training undertaken and physical conditioning acquired over the years. It is an important part of the training pyramid, especially when attempting to improve maximal capacities and efficiency of movement.

Run HR – 95% – 99% of LTHR
Run Pace – 99% – 105% of FTPa
Bike HR – 94% – 99% of LTHR
Bike Power – 90% – 100% of FTPw
Swim Time – 97%-101% of FTPa

Supra Threshold – As the name suggests this zone is above your threshold intensity and so the amount of time you can spend in this zone is limited. Lactic acid will begin to accumulate in the muscles and sessions in this zone will improve your ability to buffer and clear it. Training in and around this zone will improve your anaerobic threshold but improvements will only be stable if you have a solid aerobic base.

Run HR – 100% – 102% of LTHR
Run Pace – 97% – 100% of FTPa
Bike HR – 100% – 102% of LTHR
Bike Power – 100% – 115% of FTPw
Swim Time – 90% – 97% of FTPa

Vo₂ – This zone works on your body's maximal oxygen utilisation ability. If the correct amount of training is done in this zone at the right time you will increase the amount of oxygen your body can process at its peak. It is the same concept as increasing the diameter of the throttle bodies in an engine to allow more fuel to flow, thus increasing maximal aerobic power/velocity. Increasing this capacity benefits every type of athlete from short to long course because it increases maximal thresholds but too much work in this zone or working at the wrong time can cause injury and/or excessive fatigue and suppress the immune system. This zone is sustainable for between 3 and 10 minutes only.

Run HR – 103% – 106% of LTHR
Run Pace – 90% – 96% of FTPa
Bike HR – 103% – 106% of LTHR
Bike Power – 115% – 135% of FTPw
Swim Time – 84% – 90% of FTPa

Max – Close to maximum/sprint pace and can only be maintained for short periods of time (30seconds to 3 minutes) at a heart rate between Maximum Heart Rate and 5 beats below Maximum Heart Rate. This intensity will help to improve an athlete's VO_2 , neural system and lactic tolerance. This zone is especially useful for improving maximal aerobic power on the bike and velocity on the Run.

Run HR – More than 106% of LTHR

Run Pace – 80% – 90% of FTPa

Bike HR – More than 106% of LTHR

Bike Power – 135% – 150% of FTPw

Swim Time – 78% – 84% of FTPa

Sprint – This intensity can only be maintained for between 5 and 30 seconds. This zone is used sparingly due to the risk of injury or extreme muscle damage but is very useful for development of the explosive neural and muscular systems.

Run Pace – Faster than 80% of FTPa

Bike Power – More than 150% of FTPw

Swim Time – Less than 78% of FTPa

Training Theory and Philosophy:

Triathlon Performance Solutions bases its Training Philosophy on the following points:

- Consistency is the key
- Trust and Communication between the athlete and coach
- There are no short cuts
- Long term athlete development and planning
- The Here and Now
- Targeted training taking the athletes Goals and Strengths and Weaknesses into account
- Take care of the detail: nutrition, stretching, S+C (Strength and conditioning), sleep etc.

Training Consistency:

Endurance athletes will only develop their full potential with consistent training over a number of years. Consistent training over this length of time is a result of a balanced training and competition program that loads the athlete enough to stimulate development but also allows for recovery periods so the body may adapt and improve. Finding a weekly routine that incorporates and compliments your work and family commitments is key to long term consistency, and TPS works with the individual to ensure this is the case.

Often, doing less than you think you are capable of is the best way to achieve consistency. Understanding how your body reacts to a full week of training is much more valuable than knowing you will not be able to get out of bed the next day if you run 90min instead of 60min the night before, even though you are capable of running 90min. Athletes generally overestimate what they can achieve in a session and underestimate what they can achieve in a year. When training, always have in the back of your mind your next session and ask yourself – ‘Will I be able to complete my next session to the required standard if I continue at my current intensity?’ If not, then back off.

Trust and communication:

Developing a trusting relationship between coach and athlete is key to achieving long term consistency. This takes time and can only occur with good communication between the two. The athlete must understand that the coach is not there to judge, only to support and assist you to reach your goals. The coach must understand the athlete’s needs and what drives the athlete so they can help when motivation wanes, which it invariably does at times. This is why TPS places so much importance on the communication aspect of our Coached Packages.

There are no Short Cuts:

The only short way is the hard way. When an athlete is constantly looking for the quick way to achieve something they will always take longer to achieve it, if they ever do, compared to the athlete who is patient and willing to put in the hard work. Of course a structured and balanced Training and Competition plan helps but you have to put in the work. The satisfaction from achieving your goal after lots of hard work and discipline is immeasurable and for most it is the journey to achievement that is remembered more than the actual achievement.

Long Term athlete development and planning:

Taking the long term approach to athlete development and planning is the only way to achieve consistency and to ensure the athlete is being holistically trained. If you take the short term approach you will invariably only consider one aspect of the training spectrum and thus neglect other aspects which will limit your ultimate potential. For most triathletes that means going out and doing every session as fast as possible which ultimately leads to overtraining or injury or becoming a 'one pace wonder' (or all three).

The Here and Now:

Although it seems counter intuitive considering the points made above, once all the planning and goal setting is done the best thing you can do is to focus on what is directly in front of you and do it to the best of your ability. There are many terms for this state of mind, including 'in the zone' or being in a 'Zen' state of mind. What is meant is that the person is only focussing on the job at hand. There are no other diversionary thoughts disrupting the natural flow and all attention is on performing each movement or task as well as possible: each stroke, kick, pedal, stride, foot strike etc. It's a very difficult thing to do but if you practice it often enough it will become habit. I firmly believe the difference between the greatest sportspeople in the world, those who have performed over numerous years, and those who flash into greatness intermittently, is the ability to achieve that trance like state more often than not. Six-time Ironman winner Mark Allen was very much into his Zen mentality and under pressure in competition there was no one and still is no one better.

Targeted training taking Goals, Strengths and Weaknesses into account:

TPS works with the athlete to understand fully what they are aiming to achieve. As much relevant information as possible is gathered prior to the design of any training plan. Training plans are targeted and do not include sessions that have no relevance to the athletes' goals. As the coach, athlete relationship develops and there emerges a clearer understanding of the athletes' strengths and weaknesses the plan can be adjusted accordingly.

Take care of the detail:

It's the 'little' things that will make the difference between achieving your goals and not. Poor nutrition, flexibility, conditioning, bike maintenance etc. can mean that all the good work you have done in training accounts for nothing come race day, if you even get that far. Pre run mobility, post run stretching, pre, during and post session nutrition and recovery; all of these things are as important as your actual training. Make sure you look after the little things – take the time, plan ahead, be disciplined and don't let yourself off the hook.

Monitoring Equipment:

For those athletes with access to a Power meter on the bike and GPS on the run we will use these devices to monitor training and ensure you are training at the correct intensity. Although Heart Rate is a very good way to assess training intensity it is nowhere near as accurate as power on the bike or pace on the run. This is because HR is easily affected by external and internal factors whereas power and pace (if running on the flat) are not. If you are able to use Heart Rate as well as power and pace to monitor sessions this is the gold standard.



Don't worry if you do not have access to Power and GPS, Heart Rate monitoring can also be very effective as long as you do it regularly and begin to understand your body's own individual reactions to stimulus. Similarly, Power and Pace monitoring is only useful if done regularly and is benchmarked against previous sessions or testing.

Glossary/ Jargon:

***In alphabetical order**

ATP: Annual Training Plan – Yearly plan that takes into account race goals and strengths and weaknesses. Each athletes ATP can be found on Training Peaks.

BP: Breathing Pattern – The number of strokes you take between breaths. It's a good idea to have a regular breathing pattern as this will help you to find a rhythm and focus, especially when you swim in the open water.

Cadence: The amount of full revolutions one leg makes in a minute of cycling or the number of contacts with the ground one foot makes in a minute of running. This is also described as RPM.

CU: Catch Up – Swimming drill where one full stroke is completed and the stroking arm is returned to the front before the next stroke, using the opposite arm, is begun. This allows for complete concentration on one stroke at a time.

FNT: Finger Nail Trail – Swimming drill whereby the recovery phase is completed with the finger nails trailing through the water. This helps to mobilize the shoulders during the warm up.

Fartlek: A session where you mix your speed but never actually stop. Literally means 'to play with speed'. Run session example – 3x(2min Easy, 2min Steady, 2min Tempo)

GPS: Global Positioning System – normally refers to a running watch or bike computer that uses satellites to track pace/speed, distance and route. This information can then be downloaded onto a computer or uploaded onto Training Peaks to be compared with other sessions and the session plan.

HRM: Heart Rate Monitor – Device used to measure your heart rate frequency whilst exercising. This information can then be downloaded onto a computer or uploaded onto Training Peaks to be compared with other sessions and the session plan.

Half IM/70.3: Half Ironman triathlon – 1.9km swim, 90km bike, 21.1km run

IM: Ironman distance triathlon – 3.8km swim, 180km bike, 42.2km run

OD: Olympic distance – 1500m/40km/10km

Sprint: Half the distance of an OD triathlon – 750m/20km/5km

Muscular Endurance: The ability of the muscle to tolerate exercise over a long period of time. Improving this ability is key to triathletes, especially those who compete in Half Ironman or longer events.

OG: Overgear – Term used for a training repetition on the bike where you use a harder gear/lower

cadence than you normally would. This helps to improve muscular endurance.

OW: Open Water Swim – Swimming in the outdoors in a lake, river, the sea etc.

Paddles: Swimming training device, which is placed over the palm of the hand to give more surface area to the hand. This can improve both strength and technique.

Power Meter: Monitoring equipment usually situated in the rear wheel or inside the crank of a bicycle that uses strain gauges to measure power and torque output whilst cycling. This information can then be downloaded onto a computer or uploaded onto Training Peaks to be compared with other sessions and the session plan.

Pull: Pull Buoy – Flotation device used when swimming. This is placed between the upper thighs and tight to the crotch and helps to maintain body position in the water when not using the leg kick so the swimmer can concentrate only on the stroke mechanics.

Progressive: A repetition or session, which builds in intensity and pace.

RG: Race Gear – The gear/cadence combination you would normally use under race conditions depending on terrain and conditions. As a general rule; the longer the distance, the lower the cadence. Drafting races generally require a higher cadence than non – drafting.

Reps: Repetitions – Repeated time or distance exercises within a training session.

Rollers: Cycle training equipment that allows indoor cycling on your own bike. The bike wheels roll on metal or plastic drums. Unlike a turbo, the bike is not held in place and there is a more natural feel to cycling.

S+C: Strength and Conditioning – Free weight or body weight exercises which improve a person's muscular strength. Most triathletes should focus core strength (especially lower abdominals and back) and controlling/supporting exercises rather than ones which will build unnecessary bulk.

SA: Straight Arm – Swimming drill whereby the recovery phase is completed without the arm bending. This helps to mobilize the shoulders during the warm up.

TP: Training Peaks – Online training communication and monitoring tool used by TPS. All of your information can be accessed on this site. This includes your training schedule, training zones and annual training plan. Only TPS and the athlete can access the information stored on your site.

TPS: Triathlon Performance Solutions – Abbreviation because the name is so damn long.

Turbo: A piece of bike training equipment that locks your bike into a stationary position and applies resistance so you can cycle indoors. Usually a triangular frame.

Turnaround: Swimming and sometimes running term used for determining times and speed

during a particular set. For example in swimming a set described as 8x100m on 1:30 turnaround means that each 100m must be completed and the next one started every 1minute and 30 seconds. To achieve this you might have to swim each 100m in 1 minute and 20 seconds, thus giving you 10 seconds recovery before beginning the next.

WD: Warm Down -This is the same intensity as the warm up but is done at the end of each session. Helps to remove lactic acid from the muscles and improve recovery.

WU: Warm up – initial part of any training session where the intensity is very low and you are warming up the muscles and getting your circulation going.