G. Sample Workouts

The following workouts are presented to help you formulate an exercise session. There are a multitude of workouts available, long ones, short ones, fast ones, slow ones, hard ones and easy ones. Each individual will respond differently to each of the examples presented, but the goal is to give you some resources to help you prepare a workout session. Whether you are trying to develop speed, strength, power, technique, stamina or endurance, choose some of the examples as a guide. You can either do the workout exactly as it is written or modify it to suit your needs.

If you are trying to develop specific attributes (ie. Speed, power, endurance….), refer to page 15 in the training plan. For example if you want to develop power in swimming, exercising in zone 1 and 2 will accomplish this. What does this mean? It means that you should be doing repeat sets of 0 – 30 sec (ie 25m – 50m sprints) or repeat sets of 30 - 120 sec (ie 50m to 100m). If you do multiple repeats of these (ie 10 x 100m), then you will develop stamina in you power, or the ability to maintain this power output (which equals speed), for longer periods of time.

If you want to develop anaerobic threshold in running, you need to make your body deal with high levels of lactic acid, and according to the training zones (pg 15), you should be doing sets lasting 2-10 min. Start doing 3-4 min (800m – 1200m) intervals and build to 6-10 min intervals (or mile repeats). The same principle applies to swimming and biking. Working out at almost maximal effort for this length of time will improve your anaerobic threshold, forcing your body to handle higher levels of lactic acid, thus allowing you to swim, bike or run at a higher velocity with less effort. The key to getting faster is to slowly develop the alactic and lactic acid system (pg 15), and to build your aerobic capacity or endurance (zone 5 & 6) to a level where you body can perform for a little longer than the length of the race. For example, to race an olympic distance, you should be able to do a workout, non-stop for 2 ½ - 3 ½ hours in practice. This will allow you to comfortably complete the race without running out of energy. Adding the alactic and lactic workouts will allow you to do the distance not only in comfort, but fast! Use the following workouts to help you prepare for the racing season. Enjoy!

SWIM (take rest accordingly, do all freestyle or vary strokes)

- 5 – 20 x 50m, 100m, 200m, 300m, 400m, 500m, 600m, 800m, 1000m, 1500m, 2000m, etc.
- Pyramid sets example
  - 50m, 100m, 200m, 400m, 800m, 400m, 200m, 100m, 50m
  - 50m, 100m, 200m, 300m, 400m, 500m, 400m, 300m, 200m, 100m, 50m
  - 500m, 400m, 300m, 200m, 100m, 200m, 300m, 400m, 500m
  - 2x100m, 2x200m, 2x300m, 2x200m, 2x100m,
  - 100m, 300m, 100m, 300m, 200m, 50m, 200m, 50m
- 3-8 x 200m; split each 200m into 50's, 5 sec rest between each 50.
- 4-15 x 125m – 1st 25m butterfly, straight into 100m free sprint
- 4-15 x 100m, 200m, 400m, IM order sets
- Arms only sets (can do all above sets as arms only)
- Kick sets
  - 5-20 x 25m, 50m, 100m, 200m, 300m, 400m, 500m, 600m, 800m, 1000m
  - alternate kick sets with swimming sets or arms only sets
  - 50 kick hard into 100m sprints (4-20 times)
- breath holding sets
  - breath every 2, 3, 4, 5, 6 , 7 , 8, 9, etc
- counting strokes sets
  - count strokes every 25m, keep reducing number, but maintaining same speed
- paddle workouts (all above sets can be done with paddles to help develop strength and technique)
- time trials (400m, 750m, 800m, 100m, 1500m, 2000m, etc)
- Fartlek swims (accelerate every 25m; 50m, 75m….etc)

BIKE (rest appropriately between sets, harder the set, the longer the rest)

- Intervals
  - Long 3-10 x 8 – 12 min
  - Med 4-15 x 2 – 8 min
  - Short 5-20 x 30 sec – 2 min
  - 4-8 x 200m, 500m, 1000m – using progressively bigger gears or the same gear for each sprint.
  - Pyramid sets 4-8 x 200m, 500m, 1000m – each set go up a gear, and then come back down (ie 11th, 12th, 13th, 14th, 15th, 14th, 13th, 12th, 11th)
- Time Trials
  - Indoors - on trainer, set a time (ie 10min) and see what distance you can do
  - Outdoors – determine a course that you will always do the time trial on, that has minimal stop signs and stop lights. Choose a distance and see how fast you can do the course.
  - 1-5 times, depending on distance
- Jumps (break-aways) of group ride
  - Take turns sprinting 100 – 300m at set points along a pre-determined route. Have specific landmarks (ie bridge, stop sign, stores, etc) to start and stop the jumps. Vary between longer jumps (1-5km) and shorter jumps (100 – 1000m).
- Lactate criss-cross
  - Using programmed HR monitor, set:
    - Upper alarm 8 beats above anaerobic threshold
    - Lower alarm 8 beats below anaerobic threshold
    - Cycle back and forth between 2 alarms, taking approx 2 min to go up and 2 min to go back down, repeat for 15 – 45 min
- Fartlek
  - Keep gear constant and pedal faster and then slower for set time intervals (ie pedal slow for 1-5min, pedal fast for 1-5 m in, repeat 15 – 45 min)
  - Keep rpm constant and change gears every 1-5min, repeat 15-45 min)
    - 1 min 10th gear; recover 1 min 9th gear
    - 1 min 11th gear; recover 1 min 9th gear
    - 1 min 12th gear; recover 1 min 9th gear
    - 1 min 13th gear; recover 1 min 9th gear
    - 1 min 14th gear; recover 1 min 9th gear
- Paced or tempo ride, 10-15km. constant pace just below anaerobic threshold
- Hills
  - Seated, Standing
  - Long intervals, Short intervals
  - Rolling hills (short course or long course)
  - Snap (sprint downhill) and power (ride up hill, as you get to top, switch into bigger gear and sprint over top).
  - Motor pacing (ride behind a vehicle so that you are able to use the draft effect)
  - Sling shotting –sprint past the rider in front of you, using his draft to propel you, next person in line will catch you and do the same to you. Continue to do this until it is your turn again. This is a variation of pace line (formation) riding, that develops power and stamina.
- Ins and Outs – start sprint rising out of the saddle, hold for 10-20 sec, attempt to sit while keeping the same cadence.
- LSD ride (long slow distance), moderate rides (moderate pace, moderate distance), recover rides (easy pace).

RUNNING

- Long Runs
  - 2-4 x 5km, keeping same pace or fast on each pace. Can also do as pyramid set
  - 2-3hr constant pace run
  - 10-15km mod pace, followed by 3-5km tempo run
  - over distance run (2-4km past race distance)
  - alternate hard 1km and 2km on track for a total of 10km, then a hard 5-10km rolling hill run.
- Off road or Cross country
  - 10 x 1 lap on soccer field
  - long runs on trails (60-90 min+)
  - 3-6 mile repeats on train (3-5min recovery)
  - uphill dirt road runs
  - single track mountain bike trails
- fartlleks
  - 20 min
    - 2x90sec; 90sec recovery run
    - 4x60sec; 60sec recovery run
    - 4x30sec; 30sec recovery run
    - 4x15sec; 15sec recovery run
  - 10-15km
    - 6 x 3 min hard constant pace; 2 min easy pace
  - 5-10 km (or 10-15) up tempo run (slightly faster than talking pace)
    - followed by 5-6 (or 10-12) fartlek hard efforts of 15 sec on, 15 sec easy
  - 15-20km
    - 8 x 3min surges with 7 min recover run
  - 20 min warm-up, then 3 x 15 min effort with 5 min recovery, 10-15 min cool down
  - group fartlek (done on track, looped course, or over rolling hills
    - 5 x 45 sec hard – rest 1 min
    - 2 x (1, 2, 3, 2, 1min) – rest 1 min between each interval
  - 2-5 sets of
    - 2 min, rest 90 sec
    - 1 min, rest 60 sec
    - 30 sec, rest 30 sec
- Speed (warm up 15-20 min, jog with surges and stretch)
  - 6 x 300m @ 90%; 4 x 1100 (1st 800 @ 85%, 2nd 300 @ 100%); rest 2 min
  - 5-10 x 1000m – few seconds faster than 5km pace time
  - Prefontaine 30-40 Workout @ 5k race pace
    - 200m in 30 sec; 200m in 40 sec – hold pace for 5km OR
    - 200m in 40 sec; 200m in 50 sec – hold pace for 4-5km OR
    - 200m in 50 sec; 200m in 60 sec – hold pace for 3-5km
  - Salazor Special 1-2 x
    - Hard; Recover
    - 1600m ; 800m
    - 1200m ; 600m
    - 800m ; 400m
    - 400m ; 200m
  - 10 x 500m (5k race pace)
    - Rest intervals 1=60sec; 2=55sec; 3=50sec; 4=45sec; 5=40sec; 6=35sec; 7=30sec; 8=25sec ; 9=20sec ; 10=15sec
  - 4-8 x 400m with 4 min jogging between sets
  - 2-5 x 2000m; 90 sec rest @ 5k race pace

- Hills
  - 3 x 600m bounding; 3 x 600m sprinting (alternate with downhill recover running), followed by 6-12 x 100m flat
  - 3-4km tempo run followed by 8 short hill sprints, 4x40sec; 4x60sec
  - find a hilly course (8-12km) with 3-4 long hills (>600m each), do the easiest hill first with hardest and longest last. Repeat if it is a looped course
  - 75min hilly workout, solid on uphill, fast on downhill
  - 5-10 x 1000m hills, recover run on downhill. Mile fast at the end.
- Tempo
  - AT run (3-10k), use track or looped course to track time. Use treadmill test to determine your AT.
  - 3 x 2000m (continuous)
    - 1 @ 85%
    - 2 @ 90%
    - 3 @ 95%
  - 3 x 1 mile @ 10k race pace, with 1 mile jog back recover
  - 4x5k or 4x4k or 4x3k; 5-10 min recover jog. Intervals done @ marathon pace
  - 6 mile tempo run
    - 1st & 2nd miles – warm up
    - 3rd ,4th ,5th comfortably hard (5k race pace)
    - 6th hard
- Fun run/Junk miles
  - Once every 3-4 runs, do a recover run
  - Stay away from hills
  - Group run, stay in middle of pack
  - Trail running, easy
  - Low intensity, low volume

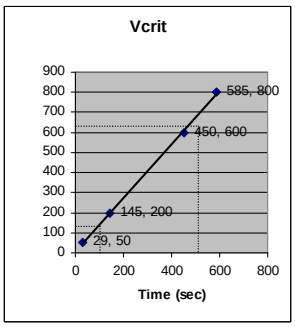
H. Field Tests

Field tests are valuable tools used to assess and monitor performance. There are a great deal of field tests available to evaluate many different aspects of a sport, or level of performance. The first question you need to ask yourself when choosing a field test, is what are you testing? Are you trying to measure endurance, power, speed, stamina, strength, anaerobic threshold, $VO_{2\,max}$, etc. The next question is how are you going to measure it? What type of test is available to measure this particular part of your performance. The third question to ask yourself is how often should you repeat this test, to see if you are showing improvement as a result of your training? A good rule of thumb is to test every 4 – 8 weeks. This time period will be dependant on where you are in your training season, and what you are measuring? For example, in the off season you may want to test less frequently, but during in season (ie race season), you may want to test more frequently as your performance usually increases significantly during this part of the training season.

As testing is very important to any training program, warming up and stretching is equally important, especially during testing. A great deal of testing occurs with maximal effort, where the performance we are most interested in measuring is speed and power. As these two performance variables require you to exert maximal effort, a good warm up (15 – 25 min) followed by a good stretch (6 – 12 min) is a must prior to any field testing. It is also equally important to do a proper cool down (10 – 30 min) followed with some stretching. A good rule of thumb to remember is **"the harder the test, the better the warm-up and stretch"**.

SWIM

- 8 x 200m OR 8 x 100m
  - determine fastest 200m or 100m from a previous workout.
  - add 20 sec or 10 sec to the respective fastest time
  - use this new time as the starting time for the set
  - each interval, get faster by 2-4 sec, rest 30 between each 200m or 100m
  - record HR and RPE after set. As you get faster throughout the season, your HR and RPE will be slightly lower for the same or faster speed. This suggests that your body is becoming more efficient at swimming fast.
- Time Trials
  - 1500m, 1000m, 800m, 400m, or any other distance. Choose the distance that you want to race and time your swim. I may be useful to have a partner as it is sometimes hard to count laps by yourself. Your partner can also record your 100m split times, and let you know if you are slowing down by placing a flutter board in the water (telling you to speed up).
- Anaerobic threshold pace swimming
  - 10 x 100m, rest 10sec
  - Must be able to hold same pace for each 100m. Determines your anaerobic threshold pace. Once you know this, you can work on improving this pace by doing workouts at or slightly below this pace.
- Video Analysis – helps you to see your stroke mechanics and evaluate what you are doing right and what you need to work on.
- Vcrit – calculates critical velocity or anaerobic threshold pace.
  - Swim at race pace an 800m, rest 3-5min, then a 50m
  - Next day swim at race pace a 600m, rest 3-5min, then a 200m
  - To determine Vcrit, plot distance in meters vs time in seconds for each of the four tests. Plot a straight line of "best fit" through the 4 points. Calculate the slope of the line (rise over run or (Y2-Y1)/(X2-X1)). The slope equals the critical velocity.



Time (sec)	Distance (m)
29	50
145	200
450	600
585	800

Vcrit = (700-150)/(540-58)			
		Time in sec per	
	(m/sec)	25m	100m
Vcrit =	1.1	21.9	87.7

BIKE

- Time Trial
  - 5k, 10k, 15k, or a distance of your choice. Make sure the course has no stop signs or street lights. Use the same course, and try to get similar outdoor conditions for retesting purposes. This can also be done on a trainer, but try an maintain a constant velocity and see how long it takes you to do a predetermined distance. Or set a time and see how far you can ride on a trainer in the designated time. Record your HR, RPE, and average speed at the 25%, 50%, 75% and 100% mark. If you are able to, record power output as well. If you have a Cyclops trainer, the website publishes a power output curve based on speed so you can estimate power output.
- Block Test – estimates aerobic capacity
  - Determine your rpm for the test (ie. 95 rpm)
  - Start in an easy gear, then increase by one gear every 4 min, but maintain the same rpm
  - Record your HR, avg speed and gear within the last min of each stage
  - Continue until your rpm falls below 80 rpm
  - Record total distance, avg speed, final HR and time
- Video Analysis – set up a video camera (side on), so you can evaluate your aerodynamic riding style. This will allow you to see your body position when racing. Make sure you do a good warm-up and then ride for about 5-10 min at race pace while filming. Do another couple of minutes with the camera directly in front of you and directly behind you. Not only will you be able to see you body position, you can also evaluate your pedal strokes, and watch to see if there are any dead spots in the pedal stroke. If you put your vcr on slow motion, you can see foot, ankle and knee position during the pedal stroke, as well if there is any improper hip action or rocking of the upper body when riding, which may help you fine tune the physical set-up of the bike.
- 10 x 1km on a flat, straight surface, or the trainer
  - determine your avg racing speed. Subtract 15%, and round to the nearest 0.5 km/hr. Example avg racing speed of 37 km/hr – 15% (or 5.6 km/hr)= 31.4 km/hr. Rounded equals 31.5 km/hr
  - Therefore, 31.5 km/hr is the starting speed
  - Increase speed by 1.5 km/hr each set.
  - 1=31.5; 2=33; 3=34.5; 4=35; 5=36.5; 6=38; 7=39.5; 8=41; 9=43.5; 10=45
  - Record HR and avg speed at end of each set, along with the last set you are able to complete and maintain the designated avg speed. As your training progresses, you should be able to complete 1 more set at next testing date or achieve a higher average speed on the last set compared to the last test.

RUN

- Track test – estimates your VO_{2mx}
  - Run for 15 min at race pace
  - Have a partner record your
    - 400m time splits, HR at each split (runner will yell out reading on HR monitor), Total distance traveled at end of 15 min.
  - Estimate VO_{2max} by the following equation:
    - $$VO_{2\max} = \frac{Dis\tan ce(m)}{(15 - 133x0.172 + 33.3)}$$
- Time Trial on road course
  - Choose a course that you will do every time you do the test
  - Try a distance of 3k, 5k, 10k, or whatever suits your particular training. Try and keep the outside conditions relatively the same between testing. This will allow more accurate comparison of test results.
  - Maintain a constant pace (race pace), record the total time taken, HR and RPE at the end, and speed if you have a GPS.
- Constant Pace Intervals – determines maximal capacity
  - For each of the test intervals, it is important to hold a constant pace. This pace is the maximal sustainable pace you can hold for all of the intervals, and must stay the same for the test. As your training progresses, your pace will increase and the time it takes you to complete the intervals will decrease, showing a positive training effect.
    - 10 x 100m (anaerobic power); 4 - 10 x 200m (aerobic power)
    - 4 - 8 x 800m (aerobic stamina/anaerobic threshold)
    - 3 – 6 x 1600m (aerobic capacity/anaerobic threshold)
- Video Analysis
  - This can be done on a treadmill or at the track. Gives visual feedback concerning proper running form. You can look at the different phases of the running gait, from heel strike to toe off, and then flight phase. Allows you to evaluate your running cadence, look at body posture, arm, shoulder, head, and hip position, excessive vertical motion, knee height etc. You can also see if there is any improper body mechanics occurring (ie pronation, supination, etc.). Once you see what your running style looks like, you can watch the pros on tv and see how theirs differs from yours. Then you can work on modifying aspects of your running style to become a more efficient and faster runner.

This resource section was developed to help you find ways to improve your triathlon training and racing. A great deal of information has been presented here for your reading enjoyment, and to help you develop a training schedule that will suit your own particular needs. Every athlete is very different in their individual training needs, which make it very difficult to make a general training plan for everybody as a whole. This training plan was developed to give you the resources to create a plan according to your individual training needs.

If there are any questions that I can answer, or tips that I can provide, feel free to contact me, Jon Tracy, MSc (Exercise Physiologist). My email is jono3of6@hotmail.com.
Enjoy the program, and have fun training in the winter, and racing in the summer.

"Tri a Tri, Attempt an Olympic, Submit to Ironman" – Jon Tracy