

2012 Coaches School/Yakima

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High School Cross Country Training Program

Important Terms

Aerobic exercise: (with oxygen) The body's ability to use oxygen during exercise at a rate in which the cardio respiratory system can replenish that oxygen in the working muscles.

Anaerobic exercise: (without oxygen) It is a brief, high intensity activity preventing the circulatory system to supply enough oxygen for a given run resulting in a deficit.

Anaerobic Threshold (AT) also called (Lactate Threshold): A point in exercise where blood lactate (lactic acid) starts to accumulate at a faster rate than it can be eliminated from the muscles.

Blood-lactate accumulation: A function of how much lactic acid is being produced by the exercising muscles and the rate at which it is being cleared by the muscles, the heart, and the liver.

Date pace: Intervals run at current race pace based on recent race performances.

Goal pace: Intervals run at a pace one hope to race at by the end of the season in a particular event.

Intervals: Referred to as a workout with short fast bouts of running broken up by periods of rest. Also referred to as the rest portion between bouts of running.

Lactic acid: It is a chemical produced and released into the bloodstream by red blood cells, intestines, and skeletal muscles. It is the byproduct of anaerobic respiration in muscles.

Maximum Heart Rate (max hr): This is the heart rate at which increased intensity of exercise does not cause an increase in heart rate.

Oxygen Debt: The point, through vigorous training, the lungs can not supply all of the oxygen the muscles need in order to continue with that particular activity.

Percentage (%) of heart rate: Referred to as a percentage of one's exercise intensity compared to their maximum heart rate.

Rep: Short for repetition. Referred to as the running segment of a workout.

VO2 Max (Maximal Oxygen Intake): This is the highest rate at which your body can transport oxygen to your muscles, which your muscles can then use to produce energy aerobically; ones aerobic limit.

Five Steps to Stardom

Step One

Aerobic Conditioning (Endurance)

- Purpose: To build endurance, increase stroke volume, stimulate muscles to store more glycogen, prepare the body for more strenuous training, increase the lungs capacity to deliver oxygen, and increase in the number and efficiency of mitochondria.

- Types of aerobic conditioning runs
 - o Recovery
 - o Easy

Training Table

System Aerobic

% max hr 60-80

Time/Distance Duration 60 min/10 miles max

Speed/Pace 1 1/2-2 min slow of 5k pace

Weekly Amount 30-50 miles

Effort Felt Easy

Aerobic Threshold (high end aerobic training)

Training Table

System Aerobic

% max hr 75-80

Time/Distance Duration 45 min/ 8 miles max

Speed/Pace one min. slower than 5k pace

Weekly Amount 2 x wk as part of aerobic conditioning

Effort Felt Medium

Step Two

Anaerobic Threshold

- Purpose:

The purpose of threshold training is to raise ones AT delaying blood lactate levels. Enables one to run faster and faster without an increase in lactate levels causing one to race faster. Prepares the body to run intervals.

- Aerobic to Anaerobic
- Threshold Training
- o Tempo runs

Training Table

System Aerobic with some anaerobic

% max hr 85-90

Time/Distance Duration 20-30 min.

Speed/Pace 25-30 sec slower than 5k pace

Weekly Amount 10% or 8 miles max

Effort Felt Comfortably Hard

- o Threshold Repeats (Cruise Intervals)

Training Table

System Aerobic with some anaerobic

% max hr 90

Work/Rest Ratio 60-90 sec.

Time/Distance Duration 3-15 min.

Speed/Pace 10-15 sec slower than 5k pace

Weekly Amount 10% or 8 miles max

Effort Felt Comfortably Hard

- Example workouts:
 - o 5(freshman)-8 x 1k w/35-45 sec jog.
 - o 3-4 x mile or 5 min. with one min rest.
 - o 6xmile or 5 min. w/ 60-90 sec jog btw.

Step Three

Intervals (VO2 Max)

- Purpose:

Continuing to raise one's anaerobic threshold at faster speeds. Prepares one to race at a high level. Improves short distance racing speed and strength.

- Example VO2 max intervals for cross country
 - o 3x5 minutes at 5k pace with 4 minute rest between.
 - o 5-6x1k @ 3k/2mile race pace with equal or slightly less rest between.
 - o 6x800 @ 3k/2 mile race pace with equal or slightly less rest.

During track a miler would not do VO2 at his/her mile pace.

- o A 4:40 miler could do 4x300 @53 with 100 jog, or 3x400 @70 with one min. jog with 5-6 min. rest btw sets running 3 sets.
- o The 2 min. 800 runner could run 4x200 @ 30 sec. with 30 sec. jog. 5-6 min. between sets (3).
- o A 2 miler could do 3-4x400 at race pace or faster with 100 jog- 3-4 sets.

Training Table

System Aerobic/Anaerobic

% max hr 95-100

Work/Rest Ratio equal or slightly less

Time/Distance Duration 1-5 min.

Speed/Pace 1 mile to 5k pace

Weekly Amount 8% or 6 miles max

Effort Felt Hard

Step Four

Speed

- Purpose: Improves anaerobic pathways, teaches one to run fast, relax and more economical. It is also used to build one's tolerance to lactate, which is to increase your ability to run long and fast with a high level of blood lactate. The body also improves its ability to quickly remove lactic acid. It brings one to a peak.
- Different philosophies
- Example speed workouts:

Two minute 800 runner

- 4x200 @ 27-28 with 2-3 minute rest between each.
- 1x300 @ 41-43 with 4 minutes rest, 1x200 @ 27-28 with 2-3 minute recovery, 1x100 @12-13 seconds. 1-2 sets with 10 minutes between sets.

- 1x500 at date or goal pace, followed by 4x200 at goal pace
- 8x200 at goal pace with a 200 jog between.

4:40 miler

- 8x400 @ 64-66 with four minutes rest.
- 8x400 @70 with a 400 jog between.
- 3x300 @ 48-50 with 3-4 min. rest. 2-3 sets.
- 4x400 at date pace, followed by 5x300 at goal pace

10 minute 2 miler

- 8x600 @ 1:44-1:47 with 5-6 minutes between.
- 1x600 @1:48, 1x500 @ 1:28, 1x400 @ 67. 1-2 sets
- 3x800 at date pace, 2x600 at goal pace.
- 4x800 @ 2:30 with an 800 jog between.

Training Table

System Anaerobic

% max hr 100

Work/Rest Ratio As much as 4x longer or jog same distance (or less) than rep ran

Time/Distance Duration less than 2 min. (100-600 meters)

Speed/Pace equal or faster than race pace (mile or less)

Weekly Amount 5% or 3 miles max

Effort Felt Hard

Step Five

Tapering

- Purpose: Fully charge the batteries.

Putting it all together

When designing a workout ask “what system are you working on”, “what is it you are trying to achieve”.

Summer	June	Easy paced distance 25-35 miles per week
	July	Medium/easy pace distance 30-40 miles per week
	August	Medium paced distance 35-45 miles per week

Sample 11 week XC training

Early season:	Monday	Long aerobic distance run.
3 weeks	Tuesday	Threshold repeats
	Wednesday	Medium length distance
	Thursday	Race or tempo run
	Friday	Short distance run
	Saturday	Race or distance run followed by 400's at race pace with full rest
	Sunday	Optional 30-60 minute distance run

Middle season
3 weeks

Monday	Long aerobic distance run
Tuesday	VO2 max intervals
Wednesday	Medium distance run
Thursday	Race or Threshold repeats
Friday	Short Distance run
Saturday	Race or VO2 max intervals
Sunday	Optional 30-60 minute distance run

Late season
3 weeks

Monday	Long distance run
Tuesday	VO2 max intervals
Wednesday	Medium distance run
Thursday	Threshold repeats
Friday	Short distance run
Saturday	Short distance run followed by race pace work with full rest
Sunday	DNR

Taper
2 weeks

Monday	Medium length distance run
Tuesday	Mile time trial or 2x800's followed by short distance run
Wednesday	Medium distance run
Thursday	Threshold 400's
Friday	Easy distance
Saturday	Race
Sunday	DNR

Training uniqueness

- Slow twitch/fast twitch runner
- Challenge in group setting

Overtraining

- Signs
 - o unusual or prolonged soreness (heaviness)
 - o performance declines in training and racing
 - o delay in recovery from training
 - o lack motivation to train or race
 - o depression
 - o diarrhea
 - o increased colds
 - o increased blood pressure
 - o increased morning pulse (8-10 beats higher)
 - o loss of weight (4-5 pounds)
 - o loss of appetite
 - o irritability
- Treatments
 - o evaluate training
 - o communication between coach and athlete
 - o cutting training load
 - o skip a meet
 - o increase iron intake
 - o eat plenty of fruits and vegetables

2012 WIAA Coaches School Clinic

Yakima, WA.

Cross Country

How to Promote and Build a Successful XC Program

Presenter: Rick Becker/Selah H.S. Head XC Coach

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Promoting and Building a Cross Country Team

It is a year round job.

Competition from other sports

- talk to kids
- xc runners talk to kids
- post xc results in hallway
- video at lunch
- trophy case

- weekly district email update
- decorate classroom
- running magazines in library
- assemblies
- informational meetings-jr. high track and xc team, early June (bulletin)
- letters home to all 8th graders
- brochure
- presentation at school registration
- letters sent home during summer
- Jr. High program
- assistant coach teaching at the Jr. High
- team shirts
- traditions- Ahtanum Ridge/ice cream, team dinners, ping pong tournament, swim and pizza

- Seafair 8k
- camping
- mountain running
- attend Jr. High xc meet
- letters/cards from h.s. team to jr. high team
- barbeque with jr. high team
- show video's to team- former Selah seasons, footlocker, Nike Nationals, NCAA, world record tape, Lindgren/Prefontaine, movies (Fire on the Track, Running Brave)
- bring kids to big meets- college regionals, Prefontaine Classic (Webb), 1972 AAU
- contact coaches of sports that make cuts
- track record board just above gym
- XC record board?
- good communication with the wrestling coach

- good communication with PE teacher

- good communication with jr. high coach

- Jr. High track marks from previous year

- KEEP IT FUN

- Treat each athlete equal-most important person in the world (personable) (not on handout)

- Have former great Selah runners speak (not on handout)

- games
 - o ultimate frisbee
 - o ultimate soccer
 - o sharks and guppies
 - o Rambo
 - o capture the flag
 - o prediction runs
 - o hook up tag
 - o water relays
 - o Gladiator
 - o Goodwill run
 - o scavenger hunt

- o buy as many countable items for a dollar as you can
- o food circle relay

XC Record Book

XC Photo Album

Selah High School distance stretching/strengthening routine

Stretching Routine (daily after practice)

Quad sit sit on quads for a few seconds, kneel, repeat several times, ending with leaning back and pushing pelvis up

High butt alternating between butt high in air with arms straight down under shoulders, legs straight back, thighs on ground sagging lower back

Knee forward leg back one knee forward one leg back, weight on fingers, arms straight

Joshua stretch

Leg over knee one leg over knee to chest, keep back straight

Groin stretch soles of feet together

Spread Em sitting down, legs spread apart , grab toes

Knee to shoulder lay on back, grab one knee, touch knee to shoulder with other leg straight on ground

Hammy Laying on back, bend knee, grab upper leg pull to chest, attempt to straighten leg, then extend leg straight up grabbing toe, do one leg at a time.

Grab and roll Sitting with legs straight out, grab toes, then rock backwards

Core/leg strengthening routine (daily after stretching)

Flicker Lay on back straight legged hands behind head x 30

Push up leg up Start in the extended pushup position, one leg up holding for 6 sec. then switch legs

Legs overhead lay on back, rock back with legs overhead, extend legs out in front, don't let legs hit the ground, keep hands behind head x 30

Side plank Laying on side, extend up, raise leg up and down

Knees to chest hands behind head , bring knees to chest then shoot legs straight out x 30.

Hamstring prone position, elbows and palms on ground, bring one leg up at a time holding for 5 seconds, the lower the hips the tougher the exercise

Crunches cross legs, legs up, hands behind head x 30.

Push up leg up(repeat) Start in the extended push position, one leg up holding for 6 sec. then switch legs

Side plank(repeat) Laying on side, extend up, raise leg up and down

Hamstring(repeat) prone position, elbows and palms on ground, bring one leg up at a time holding for 5 seconds, the lower the hips the tougher the exercise

Bicycle Start laying down on back with hands behind head, knees to chest, lift shoulder blades off floor, rotate torso bringing elbow to opposite knee while straightening the other leg, keep back flat on ground

Heel raises

Hurdles

Hopping flat or up hill

Step ups

Bounding

Short fast hills running

Short slow hills high knees