Proven Workouts and Training Strategies for H.S. Middle Distance Runners

and

Cross Country/Distance Running: How to Structure and Implement a Training Program for High School Athletes

Iowa Track and Field Coaches Clinic
December 11th 2008

Jay Johnson - coachjayjohnson@gmail.com

- Graduated from Douglas County HS (Castle Rock, CO); ran 4:25 and 9:45
- Ran at the University of Colorado (Boulder, CO) for five years; MS in Kinesiology and Applied Physiology from CU in 2000; 3:49.5 for 1,500m and 14:20 for 5,000m.
- Senior year of cross country chronicled in Chris Lear's Running with the Buffaloes
- Head Track and Cross Country Coach Pratt Community College (Pratt, KS), 2000-2002
- Assistant Cross Country and Track Coach (Middle Distance) and at The University of Colorado (Boulder, CO), 2002-2008
- Currently writing weekly training tips and a Q&A for NikeRunning.com; director of the Boulder Running Camps; producer of DVDs at RunningDVDs.com
- Currently coaching post-collegiate athletes in Boulder:
  - Renee Baillie   (15:20 for 5,000m)
  - James Hatch   (1:46.2 for 800m)
  - Brent Vaughn  (13:18 for 5,000m)
  - Sara Vaughn   (2:03.8 for 800m)
- Married to former Georgetown All-American Laura Sturges; daughter Avery born September 2008

There are very few handouts for my two presentations for one simple reason. Every slide I show, every exercise I demonstrate and every training article I mention is on the web at www.coachjayjohnson.com

I hope you'll use that site as resource this spring, but more importantly for these two 40 minute presentations, don't feel like you need to take copious notes - it's all on the web for you and the athletes you work with when you return to your school.

First Talk: Proven Workouts and Training Strategies for H.S. Middle Distance Runners

0:00-5:00   General Strength: What is it and why is it important

www.coachjayjohnson.com    coachjayjohnson@gmail.com
NOTE: There are hours of videos and notes on my site that you can use as a resource this spring so we won’t go into much detail here.

5:00-30:00  What Is "Speed Work"
- The metabolic nature of Speed Work
- The Neuromuscular nature of Speed Work
- Race Pace and Specificity

30:00-40:00  Three Types of 300's
- 1,600m race pace 300's to stereotype the race
- 2x3x300m with short rest and long rest
- 300's "fast, faster" and "fast, faster, fastest"
- Greg Brock’s Connector workout

Second Talk: Cross Country/Distance Running: How to Structure and Implement a Training Program for High School Athletes

0:00-5:00  Creating a Culture of Running at your school
"There are champions everywhere."  "You can train anywhere. Use what you have."
- Arthur Lydiard  - Joe Vigil

5:00-35:00  Threshold Running: The key skill distance runners need to learn
- Why is the aerobic system so important?
- Is this the best aerobic workout? If not, then why is it so important?
- Why is it so important in cross country racing?

35:00-40:00  Planning a cross country workout and race schedule
- Identify the key meets; work backwards
- How to use meets as workouts
- Running your best at the key meets

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## Energy Source Comparisons for Middle Distance and Distance Events

### “Classic” Model

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>400m</th>
<th>800m</th>
<th>1500m</th>
<th>5000m</th>
<th>10000m</th>
<th>Mar.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic (%)</td>
<td>18.5</td>
<td>35.0</td>
<td>52.5</td>
<td>80.0</td>
<td>90.0</td>
<td>97.5</td>
</tr>
<tr>
<td>Anaerobic (%)</td>
<td>81.5</td>
<td>65.0</td>
<td>47.5</td>
<td>20.0</td>
<td>10.0</td>
<td>2.5</td>
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</table>

### “Current” Model

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>400m</th>
<th>800m</th>
<th>1500m</th>
<th>5000m</th>
<th>10000m</th>
<th>Mar.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic (%)</td>
<td>43.5</td>
<td>60.5</td>
<td>77.0</td>
<td>94.0</td>
<td>97.0</td>
<td>99.0</td>
</tr>
<tr>
<td>Anaerobic (%)</td>
<td>56.5</td>
<td>39.5</td>
<td>23.0</td>
<td>6.0</td>
<td>3.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*The “current” model was determined using the latest methodology in oxygen kinetics, and with a much more elite subject population than the “classic” model.

Courtesy of Robert Chapman, Ph.D - University of Indiana and Director of Indiana Elite.

In my opinion this table is the only piece of exercise physiology that HS coaches need to know. This table should be the basis for the training you write, from your annual training plan to your weekly workouts, recovery days and races. Obviously this one table can’t make you a great coach, but the great HS distance coaches in any state understand the implications of this table and their training designs - no doubt different from coach to coach - have an underlying emphasis on developing of the aerobic metabolism.
13 Weeks of General Strength: February 15th to the State Meet

Remember, all of the exercises and routines are at CoachJayJohnson.com. Simply use this as your “recipe” and then add the various exercises and routines as you see fit and as your meet schedule allows. Remember, we’re all improvising!

Weeks 1-2
- Warm-Ups and Cool Downs as work
- Back and Pedestal are great examples of general strength that all of your kids can do
- Big 7 is great because you don’t have to teach them anything - teach them to A-Skip instead!!!

Weeks 2-3
- Warm-Ups and Cool Downs daily
- Treat the General Strength after practice as GS circuits...no rest between exercises and routines
- No power (i.e. plyos or PlyoAccels) but you can probably start working on 400m speed for 50m at a time

Weeks 5-7
- Warm-Ups and Cool Downs can now have “work” in them...Tempo Warm-Up will eventually be easy
- You’re now doing a significant amount of GS after EVERY workout, even the easy days
- Lactate circuits after hard workouts, but only once a week.
- Lactate circuits after the last event of the day during meets is realistic for many athletes
- PlyoAccels for most kids...neutral foot landing!!!
- Don’t drop the volume of the GS too much, even though you’re trying to get kids to Pre-Qualify...it will pay off in the last two weeks
- If the the amount of work stays high in this phase then they’ll likely run their PRs at the end of the season

Weeks 8-11
- Again, don’t drop the volume of the GS as it will help the kids recover from meets and hard workouts
- PlyoAccels can now become part of the warm-up
- If the kid is “wired” then multi-throw is great here, but again, lots of GS is more important in my opinion
- Sleep, hydration, restorative ice baths, etc. are all really important here because the kids are trying to race hard, yet the school year is hectic with all of the end of the year stuff
- You can use PlyoAccels to see if they look flat in the warm-up...if they do, just give them a short run and some “Fun Fast” strides

Weeks 12-13
- You can cut the volume of the GS work, but still keep 5-10 min in there everyday
- Good luck at Regionals and State!
<table>
<thead>
<tr>
<th>Date</th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
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<tbody>
<tr>
<td>02.15.09</td>
<td>Off</td>
<td>Long run or Threshold</td>
<td>Easy day</td>
<td>Stupid-Easy day</td>
<td>Light Track workout</td>
<td>Easy day with strides</td>
<td>Easy Day</td>
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<td></td>
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<td>LM</td>
<td>LM</td>
<td>LM</td>
<td>LM</td>
<td>LM</td>
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</tr>
<tr>
<td></td>
<td>Post-Run</td>
<td>Big 7, Back, Myrtl</td>
<td>Pedestal, Myrtl</td>
<td>Big 7, Back, Myrtl</td>
<td>Myrtl</td>
<td>Pedestal</td>
<td></td>
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<tr>
<td></td>
<td>Other Ideas</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>02.22.09</td>
<td>Off</td>
<td>Long run or Threshold</td>
<td>Easy day with strides</td>
<td>Stupid-Easy day</td>
<td>Light Track workout</td>
<td>Tempo Run</td>
<td>Easy Day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LM</td>
<td>LM</td>
<td>LM, Myrtl</td>
<td>LM</td>
<td>LM</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post-Run</td>
<td>LL, Big 7, Back, Myrtl</td>
<td>LL, Pedestal, Myrtl</td>
<td>Back</td>
<td>LL, Big 7, Back, Myrtl</td>
<td>LL, Pedestal, Myrtl</td>
<td>Pedestal</td>
</tr>
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<td></td>
<td>Other Ideas</td>
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</tr>
<tr>
<td>03.01.09</td>
<td>Off</td>
<td>Long run or Threshold</td>
<td>Easy day with strides</td>
<td>Easy day...walk through tomorrow's WU?</td>
<td>Tempo WU then very light Track workout</td>
<td>Repeat 800's at XC pace</td>
<td>Easy Day</td>
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<tr>
<td></td>
<td>Post-Run</td>
<td>Big 8, Cannonball, Back</td>
<td>Pedestal, Back, Myrtl</td>
<td>Back</td>
<td>Pedestal, Back, Myrtl</td>
<td>2xVerm Leg Circuit, Big 8, Cannonball, Back</td>
<td>Pedestal</td>
</tr>
<tr>
<td></td>
<td>Other Ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03.08.09</td>
<td>Off</td>
<td>Repeat 1,000's</td>
<td>Easy day</td>
<td>Tempo WU then Light Track workout</td>
<td>Easy Day</td>
<td>Pre-Race</td>
<td>First Qualifying Meet</td>
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<tr>
<td></td>
<td>Post-Run</td>
<td>2xVerm Leg Circuit with 2 min, Big 10, Cannonball</td>
<td>Pedestal, Back, Myrtl</td>
<td>Big 10, Cannonball</td>
<td>Pedestal, Back, Myrtl</td>
<td>After the last event do Big 8, Pedestal, Cannonball</td>
<td></td>
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</tbody>
</table>
The Tao of Speed

All Speed Workouts should have a METABOLIC goal and a NEUROMUSCULAR goal; know what stimulus you want and then write workouts to fit that stimulus...or call a good coach and see what they’re doing on a given week - that’s always a good place to start.

Work from the finish backwards
- What does the kid need to run in the last 100m, 200m and 400m to be successful?
- Get the kid to run those paces as soon as their legs are ready

What do the following Workouts Do?
- Running with the Buffaloes: 16x300m at sea-level 8,000m pace with 200m recovery
- 8x400m at HS 3,200m race pace with 60-90 seconds recovery
- 2x5x300m at HS 1,600m race pace with 60 sec recovery and 8 min recovery (yes, take 8 min...they’re running 3,000m)
- 5x200m at fast as you can with 30 sec recovery
- 3x50m from a standing start with 4 min walking recovery

The better the athletes get, the better you’re going to have to get as a coach
- The fitter the kid is aerobically the more you’ll need to be mindful of when you want to squirt lactate into the system, how often and how this fits into the race schedule for the season
- I’d ask a good coach to dinner and ask them what they do, then just replicate it but keep GREAT notes, then tweak next year

Stereotype the Race!!!
- Take the above workout and stereotype the race
- Make sure the 4:24 boy or 5:12 girl has run the last 400m, 200m and 100m of their workout as fast as they’ll need to in the race

The first presentation is better because...
- once you get kids doing a ton of GS then...
  - the kids can handle more stupid workouts and/or stupid mandatory stupid meets
  - the aerobic kids actually have some power in their butts, and they can now A-Skip so now they should be able to run the last 300m of their 3,200m with 100’s that are fast, faster, fastest, giving them a shot to avenge an XC defeat
- Jay’s 100% confident that a ton of GS will help HS kids run faster, yet the “speed issue” varies from kid to kid, program to program, coach to coach...basically, “it depends.”