Training for 10,000m

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Training Terminology

Aerobic Development – Distance Runs that are conducted at a quality (usually around 70-75% of VO2 Max). Improving Aerobic efficiency (how well the athlete can use the oxygen being sent to the working muscles.

Recovery Runs – Distance Runs that are run at a slower pace than aerobic development runs, usually following a "harder or longer" training session the day before. Rule of thumb is "run how you feel." (Usually around 65-70% VO2 Max)

Training Terminology

- Lactate Threshold – Training at Lactate Threshold increases the velocity the athlete can maintain without accumulating by-products
  - Tempo Runs – Hard, sub-maximal runs from 20-60 minutes in length
  - Lactate Threshold Intervals/Fartleks – usually at least 3 min. long in duration usually done with very short recovery time b/reps

Training Terminology

- VO2 Max – Training at certain percentages of VO2 Max (95-110% or slightly slower than 5k pace up to 1500m pace) increases the strength of the heart and increases the amount of blood (oxygen) that is sent down to the working muscles
  - Intervals – Usually run in intervals of 2-6 minutes in length (example: 1000's, Mile repeats, 2k's, etc.) Rest between depends on the length and velocity of the reps
  - Fartlek

Training Terminology

- Hill Sprints – Very short but fast sprints up a fairly steep hill. Usually around 50m in length with a walk back down recovery
- Hill Repeats – Long Hills run up at a hard pace, with a jog back down recovery
- Hill Fartlek – Distance run over a hilly course where the effort of the run in increased by running harder up the hills

Multi Pace Training

- During each phase of training the athlete runs at different training paces to bring about the desired physiological adaptations desired during different parts of the season
- Helps develop well rounded distance runners

Percentage of VO2 Max

Event	% VO2 Max
800 Meters	120-136%
1500 Meters	110-112%
3000 Meters	100-102%
5000 Meters	97-100%
10,000 Meters	92%

Percentage of Contribution to Distance Events

Event	Duration	Aerobic	Anaerobic Glycolytic	Anaerobic Alactic
800 Meters	2 min	**50%**	**44%**	**6%**
1500 Meters	3.5-4 min	**70%**	**28%**	**2%**
3200 Meters	10 min	**87%**	**13%**	**<1%**
5000 Meters	15 min	**92%**	**8%**	**<1%**
10,000 Meters	30 min	**95%**	**5%**	**<1%**

Finding Training Pace for athletes

- Recovery Runs –(30-45 min.) 65-70% VO2 Max
- Aerobic/Long Runs – (30 min – 2 hours) 70-75% VO2 Max
- Long Tempo (~50-60 min.) – 85% VO2 Max
- Medium Length Tempo (~30-45 min.)-85-88% VO2 Max
- Short Tempo (~20 min.) – 88-90% VO2 Max
- Threshold Intervals or Fartlek– 85-90% depending on the length of the segments

Mississippi State University

Track and Field/Cross Country

2011-2012

Men's Chart

	800m	1500m	1600m	3000m	3200	3k Steeple	5000m	10000m
1	01:45.0	03:35.6	03:50.0	07:40.0	08:10.7	08:18.0	13:22.0	27:46.0
2	01:46.1	03:37.9	03:52.4	07:45.0	08:16.0	08:24.0	13:31.0	28:04.0
3	01:47.2	03:40.2	03:54.9	07:50.0	08:21.3	08:29.0	13:40.0	28:23.0
4	01:48.3	03:42.5	03:57.3	07:55.0	08:26.7	08:34.0	13:49.0	28:42.0
5	01:49.4	03:44.8	03:59.8	08:00.0	08:32.0	08:40.0	13:58.0	29:01.0
6	01:50.5	03:47.1	04:02.2	08:05.0	08:37.3	08:45.0	14:07.0	29:20.0
7	01:51.6	03:49.4	04:04.7	08:10.0	08:42.7	08:50.0	14:16.0	29:39.0
8	01:52.7	03:51.7	04:07.1	08:15.0	08:48.0	08:56.0	14:25.0	29:58.0
9	01:53.8	03:54.0	04:09.6	08:20.0	08:53.3	09:01.0	14:34.0	30:17.0
10	01:54.9	03:56.3	04:12.1	08:25.0	08:58.7	09:06.0	14:43.0	30:36.0
11	01:56.0	03:58.6	04:14.5	08:30.0	09:04.0	09:12.0	14:52.0	30:55.0
12	01:57.1	04:00.9	04:17.0	08:35.0	09:09.3	09:17.0	15:01.0	31:14.0
13	01:58.2	04:03.2	04:19.4	08:40.0	09:14.7	09:22.0	15:10.0	31:33.0
14	01:59.3	04:05.5	04:21.9	08:45.0	09:20.0	09:28.0	15:19.0	31:52.0
15	02:00.4	04:07.8	04:24.3	08:50.0	09:25.3	09:33.0	15:28.0	32:11.0
16	02:01.5	04:10.1	04:26.8	08:55.0	09:30.7	09:37.0	15:37.0	32:30.0
17	02:02.6	04:12.4	04:29.2	09:00.0	09:36.0	09:44.0	15:42.0	32:36.0
18	02:03.7	04:14.7	04:31.7	09:05.0	09:41.3	09:49.0	15:50.0	32:54.0
19	02:04.8	04:17.0	04:34.1	09:10.0	09:46.7	09:55.0	15:59.0	33:12.0
20	02:05.9	04:19.3	04:36.6	09:15.0	09:52.0	10:01.0	16:08.0	33:30.0
21	02:07.0	04:21.6	04:39.0	09:20.0	09:57.3	10:06.0	16:17.0	33:48.0
22	02:08.1	04:23.9	04:41.5	09:25.0	10:02.7	10:11.0	16:25.0	34:06.0
23	02:09.2	04:26.2	04:43.9	09:30.0	10:08.0	10:17.0	16:33.0	34:24.0
24	02:10.3	04:28.5	04:46.4	09:35.0	10:13.3	10:22.0	16:42.0	34:42.0
25	02:11.4	04:30.8	04:48.9	09:40.0	10:18.7	10:27.0	16:50.0	35:00.0

	Recovery	Aerobic Development		Lactate Threshold (Tempo Runs)			10k Pace	5k Pace	3k Pace	1500m Pace	800m Pace
				20 Min. LT	45 Min. LT	60 Min. LT	92 % VO2	97% VO2	100% VO2	110% VO2	120% VO2
1	06:00.8	05:27.1	05:50.5	04:38.8	04:48.6	05:06.7	04:26.6	04:16.6	04:05.3	00:57.5	00:26.3
2	06:04.7	05:30.7	05:54.3	04:41.8	04:51.8	05:10.0	04:29.4	04:19.5	04:08.0	00:58.1	00:26.5
3	06:08.6	05:34.2	05:58.1	04:44.8	04:54.9	05:13.3	04:32.5	04:22.4	04:10.7	00:58.7	00:26.8
4	06:12.5	05:37.8	06:01.9	04:47.9	04:58.0	05:16.7	04:35.5	04:25.3	04:13.3	00:59.3	00:27.1
5	06:16.5	05:41.3	06:05.7	04:50.9	05:01.2	05:20.0	04:38.6	04:28.2	04:16.0	00:59.9	00:27.4
6	06:20.4	05:44.9	06:09.5	04:53.9	05:04.3	05:23.3	04:41.6	04:31.0	04:18.7	01:00.6	00:27.6
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9	06:32.2	05:55.6	06:21.0	05:03.0	05:13.7	05:33.3	04:50.7	04:39.7	04:26.7	01:02.4	00:28.5
10	06:36.1	05:59.1	06:24.8	05:06.1	05:16.9	05:36.7	04:53.8	04:42.6	04:29.3	01:03.0	00:28.7
11	06:40.0	06:02.7	06:28.6	05:09.1	05:20.0	05:40.0	04:56.8	04:45.4	04:32.0	01:03.6	00:29.0
12	06:43.9	06:06.2	06:32.4	05:12.1	05:23.1	05:43.3	04:59.8	04:48.3	04:34.7	01:04.2	00:29.3
13	06:47.8	06:09.8	06:36.2	05:15.2	05:26.3	05:46.7	05:02.9	04:51.2	04:37.3	01:04.9	00:29.6
14	06:51.8	06:13.3	06:40.0	05:18.2	05:29.4	05:50.0	05:05.9	04:54.1	04:40.0	01:05.5	00:29.8
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17	07:03.5	06:24.0	06:51.4	05:27.3	05:38.8	06:00.0	05:13.0	05:01.4	04:48.0	01:07.3	00:30.6
18	07:07.5	06:27.6	06:55.2	05:30.3	05:42.0	06:03.3	05:15.8	05:04.0	04:50.7	01:07.9	00:30.9
19	07:11.4	06:31.1	06:59.0	05:33.3	05:45.1	06:06.7	05:18.7	05:06.9	04:53.3	01:08.5	00:31.2
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Women's Chart

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2	02:03.7	04:14.7	04:31.7	09:05.0	09:41.3	09:49.0	15:50.0	32:54.0
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26	02:30.1	05:09.9	05:30.6	11:05.0	11:49.3	12:00.0	19:21.0	40:06.0
27	02:31.2	05:12.2	05:33.0	11:10.0	11:54.7	12:05.0	19:30.0	40:24.0
28	02:32.3	05:14.5	05:35.5	11:15.0	12:00.0	12:09.0	19:39.0	40:42.0
29	02:33.4	05:16.8	05:37.9	11:20.0	12:05.3	12:14.0	19:48.0	41:00.0
30	02:34.5	05:19.1	05:40.4	11:25.0	12:10.7	12:19.0	19:57.0	41:18.0

	Recovery	Aerobic Development		Lactate Threshold (Tempo Runs)			10k Pace	5k Pace	3k Pace	1500m Pace	800m Pace
				20 Min. LT	45 Min. LT	60 Min. LT	92 % VO2	97% VO2	100% VO2	110% VO2	120% VO2
1	06:51.4	06:24.0	06:51.4	05:27.3	05:38.8	06:00.0	05:13.0	05:01.4	04:48.0	01:07.3	00:30.6
2	06:55.2	06:27.6	06:55.2	05:30.3	05:42.0	06:03.3	05:15.8	05:04.0	04:50.7	01:07.9	00:30.9
3	06:59.0	06:31.1	06:59.0	05:33.3	05:45.1	06:06.7	05:18.7	05:06.9	04:53.3	01:08.5	00:31.2
4	07:02.9	06:34.7	07:02.9	05:36.4	05:48.2	06:10.0	05:21.6	05:09.8	04:56.0	01:09.1	00:31.5
5	07:06.7	06:38.2	07:06.7	05:39.4	05:51.4	06:13.3	05:24.5	05:12.6	04:58.7	01:09.8	00:31.8
6	07:10.5	06:41.8	07:10.5	05:42.4	05:54.5	06:16.7	05:27.4	05:15.2	05:01.3	01:10.4	00:32.0
7	07:14.3	06:45.3	07:14.3	05:45.5	05:57.6	06:20.0	05:30.2	05:17.8	05:04.0	01:11.0	00:32.3
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9	07:21.9	06:52.4	07:21.9	05:51.5	06:03.9	06:26.7	05:36.0	05:23.2	05:09.3	01:12.2	00:32.8
10	07:25.7	06:56.0	07:25.7	05:54.5	06:07.1	06:30.0	05:38.9	05:26.1	05:12.0	01:12.8	00:33.1
11	07:29.5	06:59.6	07:29.5	05:57.6	06:10.2	06:33.3	05:41.8	05:29.0	05:14.7	01:13.4	00:33.4
12	07:33.3	07:03.1	07:33.3	06:00.6	06:13.3	06:36.7	05:44.6	05:31.8	05:17.3	01:14.1	00:33.7
13	07:37.1	07:06.7	07:37.1	06:03.6	06:16.5	06:40.0	05:47.5	05:34.7	05:20.0	01:14.7	00:34.0
14	07:41.0	07:10.2	07:41.0	06:06.7	06:19.6	06:43.3	05:50.4	05:37.6	05:22.7	01:15.3	00:34.2
15	07:44.8	07:13.8	07:44.8	06:09.7	06:22.7	06:46.7	05:53.3	05:40.5	05:25.3	01:15.9	00:34.5
16	07:48.6	07:17.3	07:48.6	06:12.7	06:25.9	06:50.0	05:56.2	05:43.4	05:28.0	01:16.5	00:34.8
17	07:52.4	07:20.9	07:52.4	06:15.8	06:29.0	06:53.3	05:59.0	05:46.2	05:30.7	01:17.1	00:35.0
18	07:56.2	07:24.4	07:56.2	06:18.8	06:32.2	06:56.7	06:01.9	05:48.8	05:33.3	01:17.7	00:35.3
19	08:00.0	07:28.0	08:00.0	06:21.8	06:35.3	07:00.0	06:04.8	05:51.7	05:36.0	01:18.3	00:35.6
20	08:03.8	07:31.6	08:03.8	06:24.8	06:38.4	07:03.3	06:07.7	05:54.6	05:38.7	01:19.0	00:35.9
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25	08:22.9	07:49.3	08:22.9	06:40.0	06:54.1	07:20.0	06:22.1	06:08.6	05:52.0	01:22.0	00:37.3
26	08:26.7	07:52.9	08:26.7	06:43.0	06:57.3	07:23.3	06:25.0	06:11.5	05:54.7	01:22.6	00:37.5
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28	08:34.3	08:00.0	08:34.3	06:49.1	07:03.5	07:30.0	06:30.7	06:17.3	06:00.0	01:23.9	00:38.1
29	08:38.1	08:03.6	08:38.1	06:52.1	07:06.7	07:33.3	06:33.6	06:20.2	06:02.7	01:24.5	00:38.3
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Training Parameters

Rules of Thumb

Type of Workout/Pace	% of VO2 Max	Duration	Total Volume	Recovery b/Intervals
Long Tempo	85% VO2 Max	8-10 Miles	8-10 Miles	N/A
Medium Tempo	85-88% VO2 Max	6-7 Miles	6-7 Miles	N/A
Short Tempo	88-90% VO2 Max	3-5 Miles	3-5 Miles	N/A
10K Pace	92% VO2 Max	400m-2k (2-8 min.)	up to 12k	1/4 time of interval
5k Pace	97% VO2 Max	400m-1600m (2-6 min.)	up to 10k	1/2 time of interval
3k Pace	100% VO2 Max	400m-1600m (1-5 min.)	up to 8k	equal time of interval
1500m Pace	110% VO2 Max	200m-1000m (30 sec.-3 min.)	up to 5k	equal to twice the time
800m Pace	120% VO2 Max	100m-600m (15-90 sec.)	up to 3k	equal to 3 times

Training Phases for 10k

- General Preparation (Summer) 12 weeks
- Cross Country Season (Fall) 12 weeks
- Transition (following Cross Country) 2 weeks
- Event Specific Preparation (Dec. & Jan.)
  8 weeks
- Pre Comp Phase (Feb. & Mar.) 8 weeks
- Competition/Championship Phase (April & May and part of June) 8+ weeks

Track Season Training Phases

(Training Emphasis)

1. Event Specific Phase
    1. Aerobic Running – Distance Runs/Long Runs
    2. Lactate Threshold – Tempo Runs / LT Intervals/Fartlek
    3. VO2 Max - Intervals/Fartlek
2. Pre Comp (Early Season)
    1. Lactate Threshold – Tempo Runs (variety of distances)
    2. VO2 Max – Intervals
    3. Repetition Running /Races
3. Competition/Championship Phase
    1. VO2 Max – Intervals
    2. Lactate Threshold – Tempos (typically shorter in length)
    3. Repetition Running

Event Specific Prep Phase

- Increase Mileage/Volume
- Increase Length of Long Runs (up to 2 hrs for some)
- Improve Lactate Threshold
- Incorporate hills into runs
- Pay close attention to quality of distance runs
- Improve flexibility

Event Specific Prep Phase

- Two 4 week cycles (forth week of each cycle is a recovery week)

WK	Workout #1	Workout #2	Long Run
1	Long Tempo - 8-10 Miles or 50 min.	8x1min/2x3min/1x5min/2x3min/8x1min 1/2 time jog	1 Hr. 40 min.
2	Short Tempo - 4 Miles or 20 min	20-25 x 60 sec. hard/60 sec. easy	2 Hours
3	Med. Tempo - 6-7 Miles or 45 min	2k/1600/1200/800/400 at 10k Pace, 2k at 30 sec. over LT	1 Hour 40 min.
4	3-4 x 3000m at LT, 60-90 sec. b/reps	Hill Repeats	2 Hours
5	Long Tempo - 8-10 Miles or 50 min.	8x400/2x800/1x1600/2x800/8x400, 1/4 jog b/reps	1 Hour 40 min.
6	Short Tempo - 4 Miles or 20 min	8-10 x 1000m, 200m jog b/reps	2 Hours
7	Med. Tempo - 6-7 Miles or 45 min	2k/1600/1200/800/400 at 10k Pace, 2k at 30 sec. over LT	1 Hour 40 min.
8	3-4 x 3000m at LT, 60-90 sec. b/reps	20-25 x 400m on a 2 minute cycle	2 Hours

Example of 2 week training cycle

(Event Specific Preparation Phase)

- Monday – Aerobic Development Run + Hill Sprints
- Tuesday – 92% VO2 (10k Pace) Fartlek Style
- Wednesday – Recovery Run + Weights/Circuits
- Thursday – Lactate Threshold – Long Tempo
- Friday – Aerobic Development Run + Weights/Circuits
- Saturday – Long Run
- Sunday – Recovery Run + Weights
- Monday – 97% VO2 Max (5k Pace) Fartlek Style
- Tuesday - Recovery Run + Weights/Circuits
- Wednesday - Aerobic Development Run
- Thursday – Lactate Threshold – Medium or Shorter Tempo
- Friday – Recovery Run + Weights/Circuit
- Saturday – Long Run
- Sunday – Recovery Run (optional day off possible) + Weights

Pre-Competition Phase

- Can and usually would include races
- Emphasis on developing Lactate Threshold
- More emphasis put on VO2 Development
- Good to use races such as 3k and 5k races for VO2 development workouts
- Can still race very well during this portion of the season.

Pre Comp Phase

WK	Workout #1	Workout #2	Long Run
1	Long Tempo - 8-10 Miles or 50 min.	8 x 800m at 3k Pace, equal rest	1 Hr. 40 min.
2	Short Tempo - 4 Miles or 20 min	4-5 x 1600m at 5k pace, 3 min. b/reps	2 Hours
3	Med. Tempo - 6-7 Miles or 45 min	10 x 400m at 1500m pace, 60 sec. b/reps	1 Hour 40 min.
4	3-4 x 3000m at LT, 60-90 sec. b/reps	20-25 x 400m on a 2 min. cycle	2 Hours
5	Long Tempo - 8-10 Miles or 50 min.	5 x 1200m at 3k pace, equal rest	1 Hour 40 min.
6	Short Tempo - 4 Miles or 20 min	5 x 1600m at 5k pace, 3 min. b/reps	2 Hours
7	Med. Tempo - 6-7 Miles or 45 min	4 x 2k, 4-5 min. b/reps	1 Hour 40 min.
8	3-4 x 3000m at LT, 60-90 sec. b/reps	20-25 x 400m on a 2 minute cycle	2 Hours

Example of 2 week training cycle

(Event Specific Pre Comp Phase)

- Monday – Aerobic Development Run + Hill Sprints
- Tuesday – 100% VO2 (3k Pace) Interval Session
- Wednesday – Recovery Run + Weights/Circuits
- Thursday – Lactate Threshold – Medium or Longer Tempo
- Friday – Aerobic Development Run + Weights/Circuits
- Saturday – Long Run
- Sunday – Recovery Run + Weights
- Monday – 97% VO2 Max (5k Pace) Interval Session
- Tuesday - Recovery Run + Weights/Circuits
- Wednesday - Aerobic Development Run
- Thursday – Lactate Threshold – Shorter Tempo
- Friday – Recovery Run + Weights/Circuit
- Saturday – Long Run
- Sunday – Recovery Run (optional day off possible) + Weights

Competition/Championship Phase

- Emphasis of “hard” sessions is on VO2 Max
- Continue to do Lactate Threshold work, but length and volume of LT workouts begins to reduce
- Use “under” distance races to increase buffering capacity and development of “race speed”
- Peak at the end of the phase

Comp/Championship Phase

WK	Workout #1	Workout #2	Long Run
1	Med. Tempo - 6-7 Miles or 45 min	5 x 1200 at 3k pace, 3-4 min. b/reps	1 Hr. 30 min.
2	10 x 400m at 1500m pace, 60 sec. b/reps	8-10 x 1000m at 5k pace, 2 min. b/reps	1 Hr. 40 min.
3	Short Tempo - 4 Miles or 20 min	8 x 800m at 3k pace, 2-3 min. b/reps	1 Hr. 30 min.
4	3 x 3000m at LT, 60-90 sec. b/reps	4x400/2x800/1x1600/2x800/4x400, 1/4 jog	1 Hr. 40 min.
5	Med. Tempo - 6-7 Miles or 45 min	5 x 1200m at 3k pace, equal rest	1 Hr. 30 min.
6	Short Tempo - 4 Miles or 20 min	5 x 1600 at 5k pace, 3 min. b/reps	1 Hr. 20 min.
7	Short Tempo - 4 Miles or 20 min	3 x 1600 at 3k Pace, 5 min. b/reps	1 Hr. 20 min.
8	4x400/2x800/1x1600, 1/4 jog b/reps	2 x 1600 at faster than 3k Pace, 5-6 min.	1 Hr. 15 min.

Competition/Championship Phase

- Monday – 5 x Mile at 5k pace, 3 min. b/reps
- Tuesday – Recovery Run + Weights/Circuits
- Wednesday – Lactate Threshold – Short Tempo
- Thursday – Recovery Run + Weights
- Friday – Aerobic Run
- Saturday – RACE 1500m
- Sunday – Long Run
- Monday – Recovery Run + Weights/Circuits
- Tuesday - Aerobic Run
- Wednesday – 8 x 800m at 3k pace, 2 min. b/reps
- Thursday – Recovery Run + Weights
- Friday – Aerobic Run
- Saturday – 5000m Race
- Sunday – Recovery Run (Long Run will probably be Monday)

Tapering for 10,000m

- The primary goal of tapering/peaking phase it to minimize fatigue without comprising the athlete's level of fitness
- Typically 2-3 week taper begins before the primary competition
- Training volumes reduce 30-50% over the 2-3 weeks
- Intensity of training is maintained, but volume is reduced
- Additional recovery time between "hard" sessions
- When in doubt, side on conservative during the "taper".
- There is a psychological factor for each athlete that has to be considered during peaking. Building confidence is as important as anything.

Peaking

- Take common workouts and increase intensity, lower volume, increase rest, raise confidence
  - Example
    - During the Season: 5 x Mile, 3 min. b/reps
    - While Peaking: 3 x Mile, 5 min. b/reps
  - Example
    - During the Season: 8 x 800m, 2 min. b/reps
    - While Peaking: 6 x 800m, 3 min. b/reps

Injury Prevention

- Stretching Routine following every run
- Ice Bath after every workout
- Mileage for 10k runners should be individual, but usually relatively higher. So the more you can access "soft" surfaces for distance runs and even workouts the better.
- Preventative exercises in the weights/circuit routine or the warm-up or cool down routine
  - Examples: Hurdle mobility drills, Flexibility exercises, barefoot grass strides, heel walks and/or other strengthening exercises

Troubleshooting the 10k runner

- Concentrate on running the amount of mileage at the desired quality, more than the number itself
- Good to use shorter races, especially indoors, to work on and develop speed
- Evaluate what other events, if any, the 10k runner can and will contribute to the team.
- Be cautious of number of 10k's a runner runs during the season. Typically one and maybe two, plus championship rounds (Conference, Nationals).
- Some young 10k runners can not concentrate for 30 plus straight minutes. "Longer" workouts and tempo runs can help develop concentration for longer races
- Have the athlete's 5k race is where it needs to be or at least heading in the right direction before racing a 10k.
- Race freshman sparingly/carefully at 10k.