

CRITICAL VELOCITY TRAINING

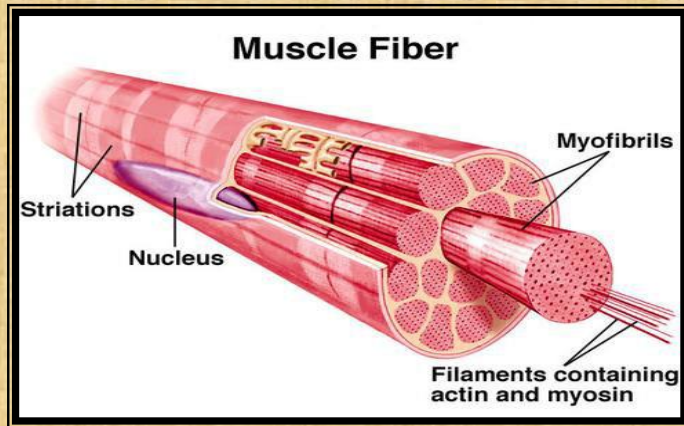
PRESENTATION BY

TOM SCHWARTZ - TINMAN ENDURANCE COACHING, LLC., 07/23/2016

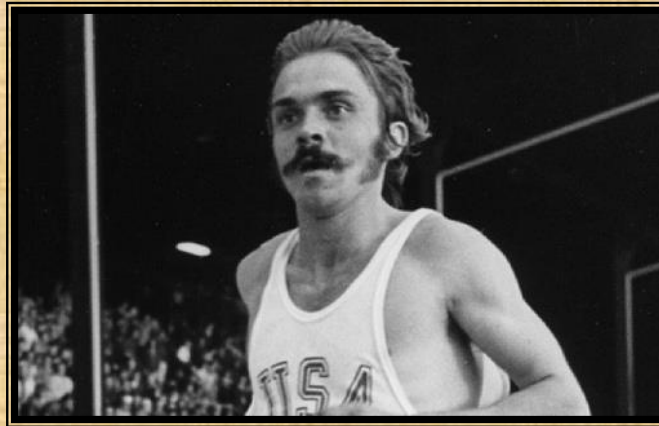
CRITICAL VELOCITY IS...

- Sustainable to 30-35 minutes.
- A somewhat hard training pace.

CRITICAL VELOCITY



Improves the aerobic capacity of Type IIA muscle fibers.



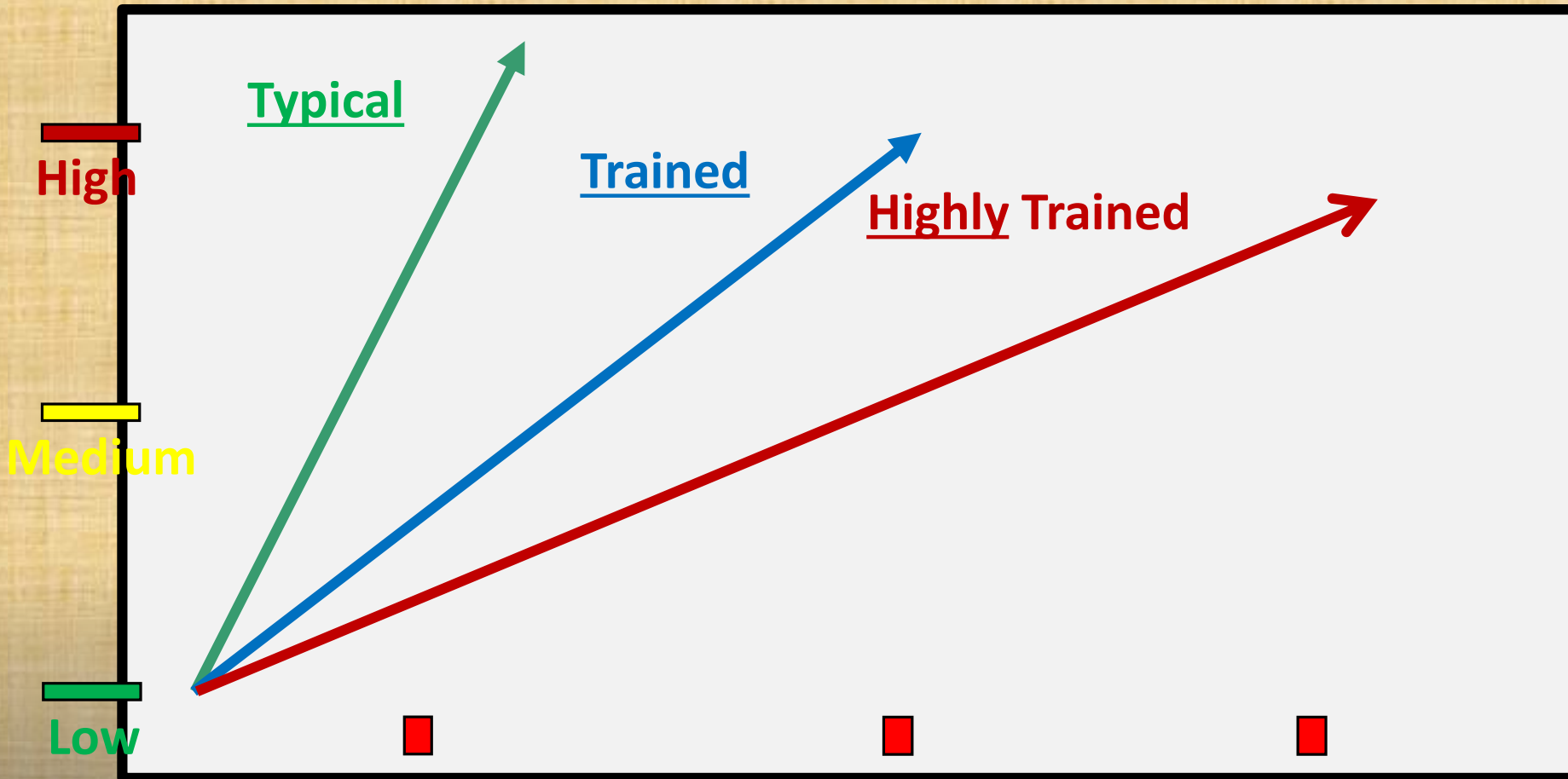
Elevates a runner's average cruising speed during races.



Increases the kicking distance from the finish line.

CRITICAL VELOCITY CAN BE ...

- Used as preparation of all running events above 400m
- Integrated with other quality training
- Included during all training phases



Speed =>

EXAMPLE CRITICAL VELOCITY WORKOUTS...

- A 3200m runner with a time of 10:00
- Max. = 8 x 1km @ CV pace (jog 200's)
- Typical = 6 x 1km @ CV pace + 6 x 200m @ 1600m pace (jog 200's)

CRITICAL VELOCITY TRAINING VOLUME CHARTS FOR DISTANCE RUNNERS



CV Training Volume Chart (Male Distance Runners)									
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Level	2000m	3000m	3200m	2-miles	5000m	CV / 400m	CV / KM	CV Volume (KM)	
1	4:53.1	7:34.6	8:05.5	8:08.3	13:00.2	1:05.3	2:43.2	11-	12
2	5:04.2	7:51.8	8:23.8	8:26.8	13:29.8	1:07.6	2:49.1	10-	11
3	5:16.8	8:11.4	8:44.8	8:47.8	14:03.4	1:10.3	2:55.7	9-	10
4	5:31.4	8:34.0	9:08.9	9:12.1	14:42.2	1:13.4	3:03.4	8-	9
5	5:48.5	9:00.6	9:37.2	9:40.6	15:27.7	1:16.9	3:12.4	7-	8
6	6:09.0	9:32.3	10:11.1	10:14.7	16:22.2	1:21.2	3:23.1	6-	7
7	6:34.1	10:11.2	10:52.7	10:56.5	17:29.0	1:26.5	3:36.2	5-	6
8	7:06.0	11:00.7	11:45.5	11:49.6	18:53.9	1:33.1	3:52.7	4-	5
9	7:48.5	12:06.7	12:56.0	13:00.6	20:47.3	1:41.9	4:14.7	3-	4
10	8:49.8	13:41.7	14:37.5	14:42.6	23:30.3	1:54.5	4:46.2	2-	3
11	10:29.9	13:24.3	17:23.3	17:29.4	27:56.9	2:14.9	5:37.3	1-	2
12	14:06.9	21:37.0	23:22.7	23:30.9	37:34.4	2:58.7	7:26.7	0-	1

CV Training Volume Chart

(Female Distance Runners)

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Level	2000m	3000m	3200m	2-miles	5000m	CV / 400m	CV / KM	CV Volume (KM)	
1	5:25.3.	8:24.6.	8:58.9.	9:02.0.	14:26.1.	1:12.1	3:00.2	11-	12
2	5:37.7.	8:43.7.	9:19.3.	9:22.5.	14:58.8.	1:14.7	3:06.7	10-	11
3	5:51.7.	9:05.5.	9:42.5.	9:45.9.	15:36.2.	1:17.6	3:14.0	9-	10
4	6:07.9.	9:30.6.	10:09.3.	10:12.9.	16:19.3.	1:21.0	3:22.5	8-	9
5	6:26.8.	10:00.0.	10:40.7.	10:44.5.	17:09.8.	1:25.0	3:32.4	7-	8
6	6:49.5.	10:35.2.	11:18.3.	11:22.3.	18:10.2.	1:29.7	3:44.2	6-	7
7	7:17.4.	11:18.4.	12:04.5.	12:08.7.	19:24.4.	1:35.5	3:58.7	5-	6
8	7:52.8.	12:13.4.	13:03.1.	13:07.7.	20:58.6.	1:42.8	4:16.9	4-	5
9	8:40.1.	13:26.7.	14:21.4.	14:26.4.	23:04.5.	1:52.5	4:41.3	3-	4
10	9:48.1.	15:12.1.	16:14.0.	16:19.7.	26:05.4.	2:06.4	5:16.0	2-	3
11	11:39.2.	14:52.8.	19:18.1.	19:24.9.	31:01.3.	2:29.0	6:12.5	1-	2
12	15:40.1.	23:59.7.	25:57.0.	26:06.1.	41:42.4.	3:17.3	8:13.2	0-	1

CALCULATING CRITICAL VELOCITY TRAINING PACES



SPRINTERS

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Sprinters

<u>CV per 200m</u> = (400T-200T) * (1.4)	200m Time			400m Time		CV pace					
	Minutes	Seconds		Minutes	Seconds	100m	200m	300m	400m	500m	600m
		24			54	0:21.00	0:42.00	1:03.00	1:24.00	1:45.00	2:06.00

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LONG SPRINTERS

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Long Sprinters

CV per 400m =

$(800T - 400T) + 10s$

400m Time

Minutes

Seconds

50

800m Time

Minutes

Seconds

1

48.64

CV pace

400m

600m

800m

1000m

1200m

1600m

1:08.64

1:42.96

2:17.28

2:51.60

3:25.92

4:34.56

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MID-DISTANCE

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Mid-Distance

<u>CV per 800m</u> = (1600T-800T) + 10s	800m Time		1600m Time		CV pace					
	Minutes	Seconds	Minutes	Seconds	400m	600m	800m	1000m	1200m	1600m
	1	50	4	0	1:10.00	1:45.00	2:20.00	2:55.00	3:30.00	4:40.00

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DISTANCE

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Mid-Distance

CV per 1600m =
(3200T-1600T)

1600m Time

3200m Time

CV pace

Minutes

Seconds

Minutes

Seconds

400m

600m

800m

1000m

1200m

1600m

3

48

8

10

1:05.50

1:38.25

2:11.00

2:43.75

3:16.50

4:22.00

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CRITICAL VELOCITY TRAINING PROGRESSIONS



3 PROGRESSION METHODS ...

#1 - Decrease the rest between the repetitions.

- Week 1: 90 second jog recovery between reps
- Week 2: 75 second jog recovery between reps
- Week 3: 60 second jog recovery between reps

#2 - Increase length or duration of the repetitions.

- Week 1: 12 x 400m
(4,800m)
- Week 2: 6 x 800M
(4,800M)
- Week 3: 5 x 1000m
(5,000M)

#3 - Increase the speed of the repetitions.

- Week 1: 6 x 1km @ 3:20
(Jog 75 Seconds)
- Week 2: 6 x 1km @ 3:18
(Jog 75 seconds)
- Week 3: 6 x 1km @ 3:16
(jog 75 seconds)

COMMON QUESTIONS ...

1. What if runners are showing excessive fatigue before a training session ends?

- Weather or terrain conditions may affect performance.
- Illness, lack of sleep, not eating enough carbs, or life-stress may inhibit performance.
- Withhold them from the next repetition, or have them do a longer recovery jog.
- Adjust the workout training paces, volume, or recovery times.
- Send them on a cool down with a teammate who is doing less training volume.
- Cut your losses; go home or go to the athletic trainer or physical therapist for help.



2. How do I group my runners together for CV repetitions?









- 1st – Group athletes based on current, not goal, fitness and performance level.
- 2nd – Group athletes according to experience.
- 3rd – Group athletes according to future race strategy.



3. What if Runners perform CV Repetitions too Fast?

- Educate your athletes or yourself about the importance of running their assigned pace. “Workouts are not races.”
- Say, “When performance in races (or time-trials) improves, training speeds improve. Be patient!”

IMPACT OF CV TRAINING

-  Aerobic capacity of Type II muscle fibers.
-  Capacity to sustain a submaximal VO2 pace or power output.
-  Injury rates while transitioning from base to race-pace training.
-  Ability to run more volume @ paces or power above 90% of VO2 max.
-  Recovery rate following races or high intensity workouts.
-  Ability to run multiple races fast at track meets.
-  Strength of Type II muscle fibers; tensile strength.
-  In cost of oxygen and energy to run at paces above and below VO2 max.

DREW HUNTER WORKOUTS

Date: February 16, 2016

Workout Title: CV Intervals & 1-mile pace reps

Details:

60 minute run, including-

- 4 x 1km @ CV pace + 400m cut-downs

4 x

Times:

- 2:52-2:51 (1 k's)
- 62.5, 59.9, 57.4, 57.3 (400's)

Races that followed:

- 7:59 (3k), 3:58 and 3:57 (1-mile)



Date: November 24, 2015

Workout Title: CV Intervals Fartlek

Details:

60 minute run, including-

- 6 x 1km @ CV pace on grass
- +
- 4 x 30 sec. @ 800m speed

Times:

- 2:56-2:54 (1 k's)

Race that followed:

- 1st at Footlocker Nationals XC Meet

GRACE PING WORKOUTS

Date: May 5, 2016

Workout Title: CV Intervals & Hill reps

Details:

60 minute run, including-

- 4 x 1km @ CV pace
+
- 4 x 30 sec. hill reps @ 1600m speed
+
- 4 x 15 sec. @ 400m speed



Date: June 7, 2016

Workout Title: CV Intervals & 400m fast

Details:

45 minute run, including-

- 4 x 1km @ CV pace
+
- 1 x 400m @ full effort

Times:

3:31-3:29 (1 k's), 73 sec. 400m

Races that followed:

June 10 - 10:31 win 3200m

June 11 - 5:02 PR 1600m

June 17 - 16:44, 2nd @ NB Nationals (5km)

June 18 – 10:28, 7th @ NB Nationals (2 mi.)