

# **CRITICAL VELOCITY TRAINING**

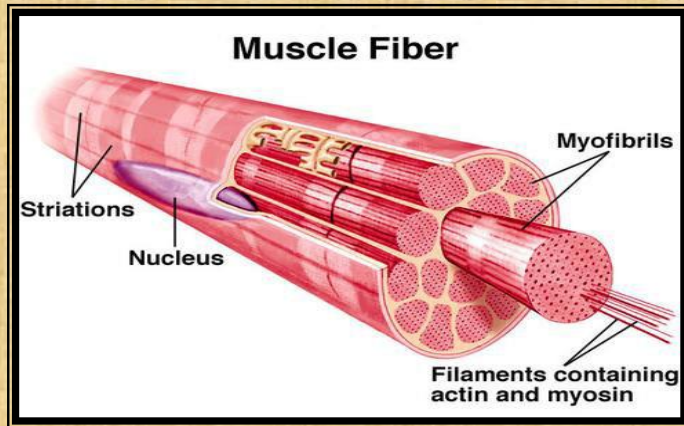
**PRESENTATION BY**

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

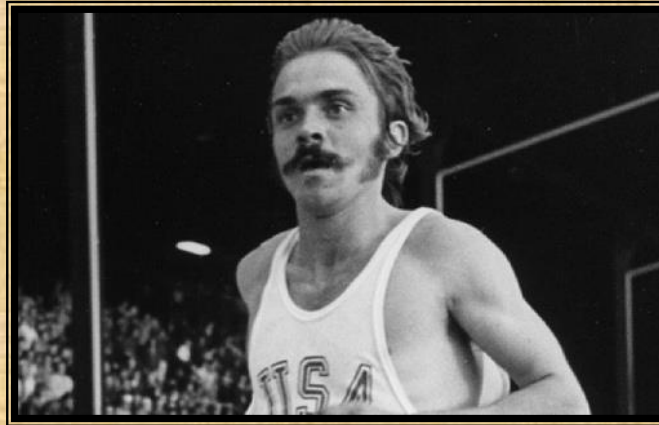
# CRITICAL VELOCITY IS...

- Sustainable for about 30 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.**

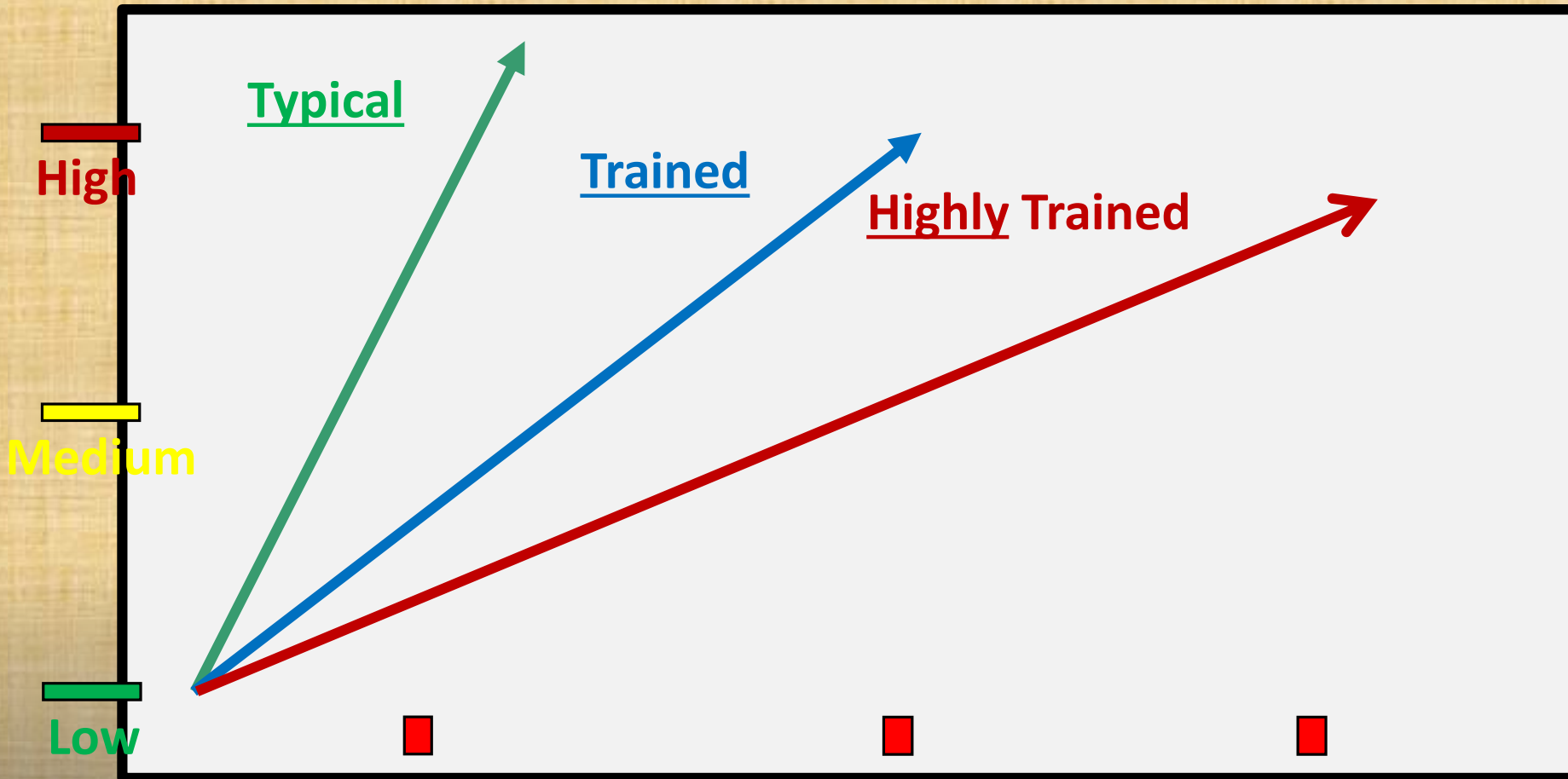


**Increases the kicking distance from the finish line.**



# CRITICAL VELOCITY CAN BE ...

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



Speed =>

# EXAMPLE CRITICAL VELOCITY WORKOUTS...

- A 800m runner with a time of 2:00 and 400m time of :53.
- Max. = 7 x 1km @ CV pace (jog 200's)
- Typical = 5 x 1km @ CV pace + 5 x 200m @ 800m pace (jog 200's)

# CRITICAL VELOCITY TRAINING VOLUME CHARTS FOR LONG SPRINTERS





# **CALCULATING CRITICAL VELOCITY TRAINING PACES**





# SPRINTERS

By Tom Schwartz, Tinman Endurance Coaching, LLC

## 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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# **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?

- 1<sup>st</sup> – Group athletes based on current, not goal, fitness and performance level.
- 2<sup>nd</sup> – Group athletes according to experience.
- 3<sup>rd</sup> – 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:

- 1<sup>st</sup> 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, 2<sup>nd</sup> @ NB Nationals (5km)

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