

400-5K MULTI-PACE TRAINING

JESSE COY



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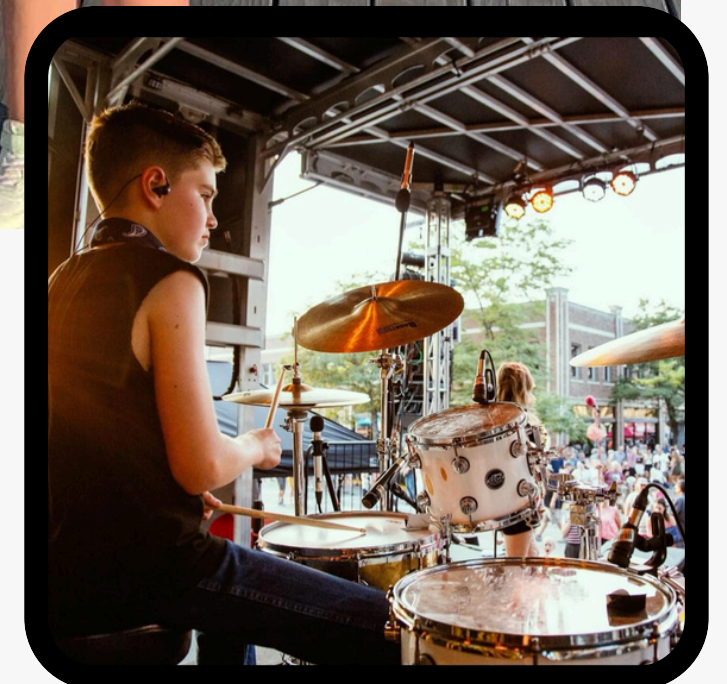
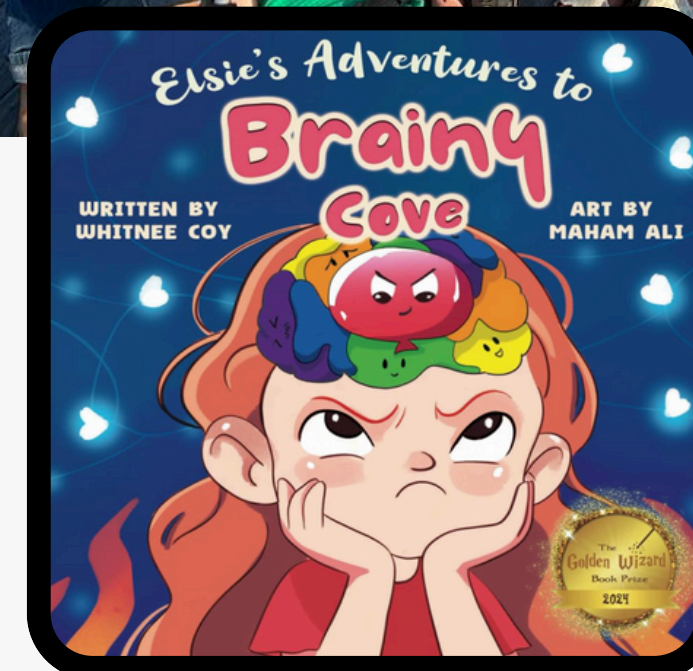
RC Stevens High School, SD
Coaching Distance

Experience

- 20 years @ schools with 200-1500 kids
- Boys & Girls State Champions in the 400-5k
- Boys & Girls Team XC Champions
- Male & Female NXN/Footlocker Finalists

Education

- M. Ed w/ Physical Ed.
- USATF
- USTFCCCA
- ALTIS
- CoachingDistance.com





MAIN GOALS

Convince you not to specialize in an event in high school.

- Rationale behind 400-5k philosophy
- Multi-Pace Training
- Training Zones & Implementation

ANDY COY (2009)

200m: 23.2 (9th grade)

400m: 50.5 (51.0 in 9th grade)

800m: 1:54.83

1600m: 4:24.04

XC: Top 3 @ State

- **National Champion 1,000m**
- **1:50/2:24/3:47**
- **2x National XC Meet**

Get 400m
kids to run
distance



TAMARA GORMAN (2013)

400m: 1:03(s)

800m: 2:20.84/ 2:18(s)

1600m: 5:03.42

3200m: 10:42.6

XC: 17:45 5k/ 30th @ NXN

- **2x World Champion Triathlete**

Improve
limiting
factors



KENDRA DYKSTRA (2015)

400m: 59.79 (~65s 9th grade)

800m: 2:15.74 (2:26- 9th grade)

1600m: 4:58.27 (5:40- 9th grade)

3200m: 11:19.37 (12:39- 9th Grade)

XC: Top 3 @ State

- **4:28.37 (1500m)**
- **2:09.37 (800m)**
- **NAIA All-American 800m**
-

Interconnected
improvement in
all events



SIMEON BIRNBAUM (2022)

400m: 49.89

800m: 1:47.96

1500m: 3:37.93 Mile: 3:57.53

3200 & 2-Mile: 8:34.10

XC: 14:39/ Top 6 @ NXN & Champs

1500m #2 All-Time US

Mile #4 All-Time US

3200m- NFHS Record

2 Mile- #2 All-Time

800m is just outside Top 10

**Helps prevent
over-racing**



BRIONNA HOLSO (2022)

400m: 61.20

800m: 2:16.52

1600m: 4:57.70

3200m: 10:49.50

XC: 17:27/ 7th @ NXN Heartland



Trick kids into
doing longer
events



KYLE BURDICK (2014)

400m: 51(s)

800m: 1:56.43

1600m: 4:19.70

3200m: 9:29.57

XC: Top 3 @ State

- **NCAA D1 All-American 1500m**
- **4:01 Mile**
- **All-Conference 800-10K**

It's fun



MULTI-PACE TRAINING

The foundation of the 400-5k
Philosophy

Not new.

Frank Horwill- British Milers
Club in the 70-80s.



**FRANK
HORWILL'S
5-PACE THEORY**



4 SECOND RULE

5K

78

3200M

74

MILE

70

800M

66

400M

62



JOE RUBIO
5 SECOND RULE

RESOURCE: HIS GUIDE/ D-CREW CLINIC

5K

80

3200M

75

MILE

70

800M

65

400M

60



TEMPO

3200M + 60S

LT

3200M + 40S

5K

3200M + 20S

3200M

RACE PACE

MILE

RACE PACE

INTENSITY ZONES

We have options in each training zone.

This is important for periodization.

Can move kids “up” without missing the intent of the workout.

There’s not a “magic intensity”

ENDURANCE

**Easy &
Moderate**

THRESHOLD

**Sub T
Tempo
& LT**

RACE SPEEDS

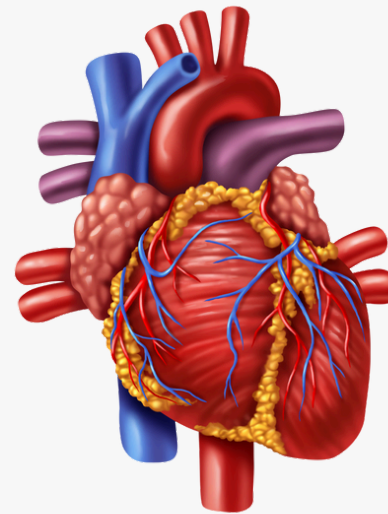
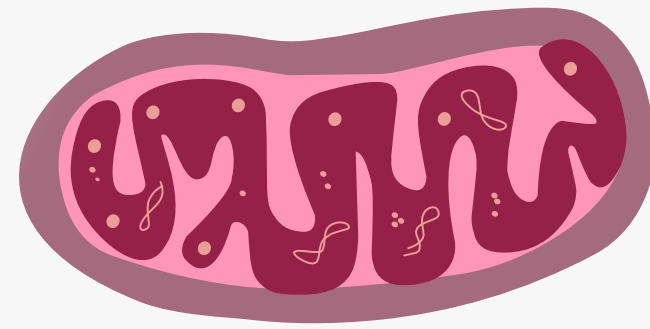
**5k, 3k
& Mile,
800m**

SPEED

**100, 200
& 400m**

ENDURANCE

Why does it makes sense to do a bunch of easy running?



Mitochondrial Biogenesis

We're interested in making more mitochondria

Stroke Volume

Pump more blood with heartbeat; deliver more oxygen with less effort

Deepends the "Well"

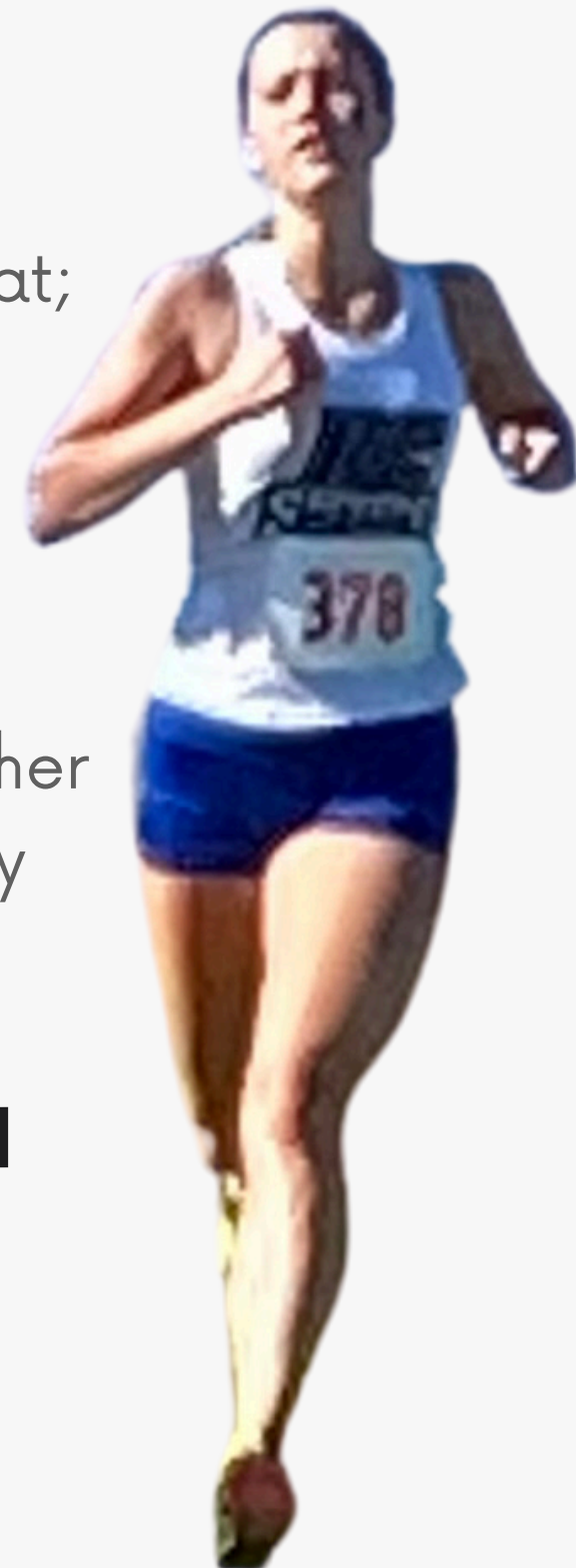
Workouts and races have a higher cost for those not as aerobically developed.

Great KPI to track/record

World-Class Long-Distance Running Performances Are Best Predicted by Volume of Easy Runs and Deliberate Practice of Short-Interval and Tempo Runs

September 2021 · [The Journal of Strength and Conditioning Research](#)
35(9):2525-2531

DOI:[10.1519/JSC.0000000000003176](#)





Easy Runs

3200 PACE + 3:00 - 2:20

JR/SR- 50'

SO- 45'

FR- 40'

Moderate Runs

3200 PACE + 2:20-1:40

JR/SR- 60'

SO- 55'

FR- 50'

Lactate Threshold

The lactate threshold is the maximal effort or intensity that an athlete can maintain for an extended period of time with little or no increase in lactate in the blood. It is an effort or intensity and not a specific lactate level. It is most often described as a speed or pace such as meters per second, or times to achieve certain distances such as minutes per mile or kilometer for running and minutes per 100-m in swimming, or as a power measure such as watts

Dr. Jeff Messer via D-Crew Clinic

THRESHOLD RANGE



Nick Willis

@nickwillis

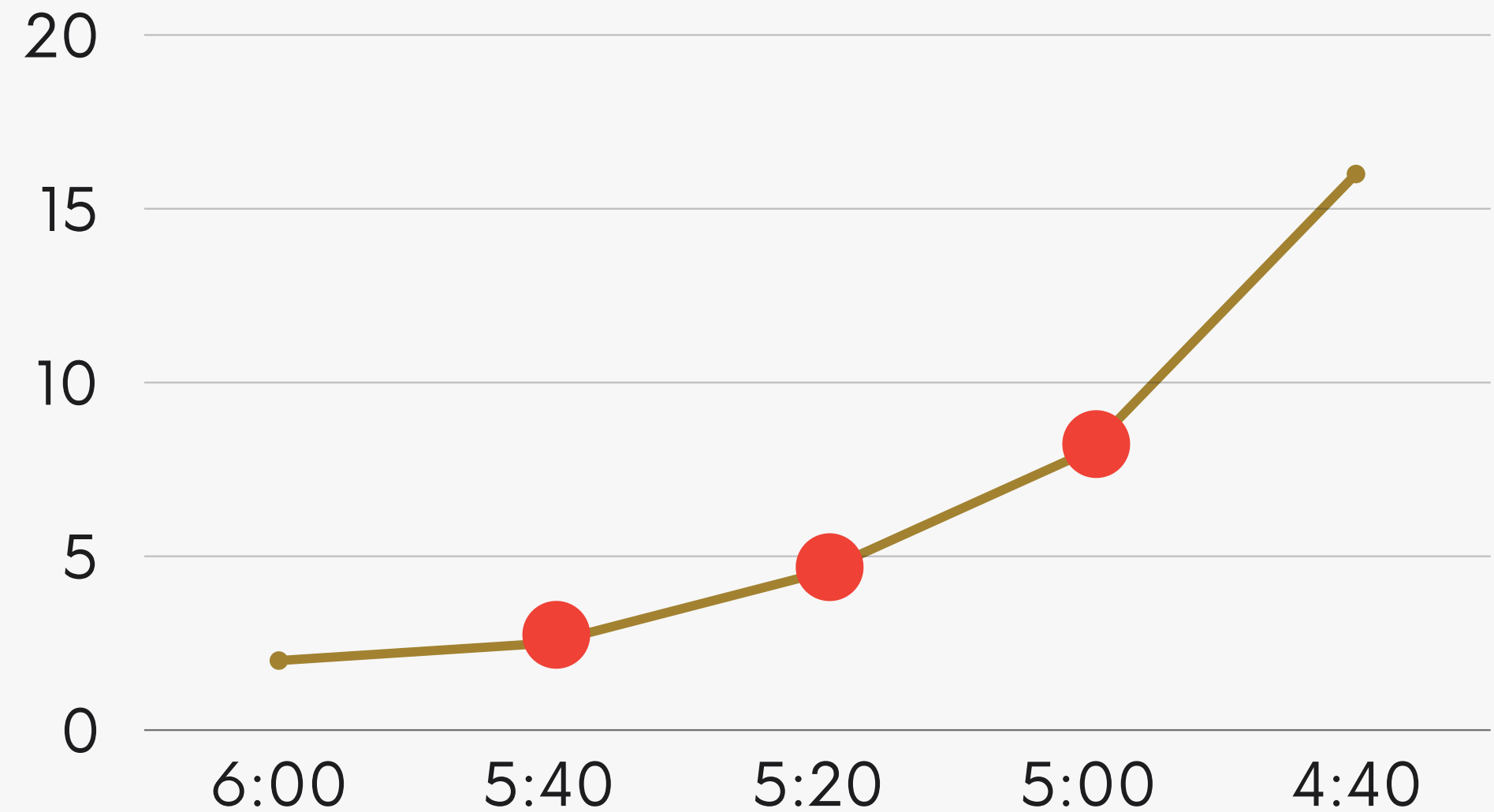
I think coaching/training is a huge factor in this (not just the spikes). Coaches country-wide have finally bought into threshold training as a central focus. Overkilling it with hard intervals week in and week out is finally dying out.

LACTATE CURVE

Use a range of paces to train lactate threshold

Use a variety of workouts:

- Continuous Tempo
- Long Intervals
- Short Intervals





Tempo & Sub-T Runs

3200 PACE + 1:00 - 1:20

SUB T- 30-45' CONTINUOUS

TEMPO- CONTINUOUS OR 6-10' REPS
(25-35' TOTAL)



LT Intervals/Fartlek

3200 PACE + :40

20-25' OF WORK

1-5' REPS W/ 1-2' RECOVERY



RACE SPEEDS, EFFORTS & RHYTHMS



5k & 3k Pace

3200 PACE & 3200 PACE + :20

5000M-400-1KM

3200M- 300-800M

REST = JOG TIME SPENT RUNNING

Mile & 800 Pace

RACE PACES

MILE- 200-400M

800M- 150-300M

REST= WALK-JOG DISTANCE RUN

multi- pace training

WHY WE TRAIN FOR THE MILE

5k

3k

Mile

800

400




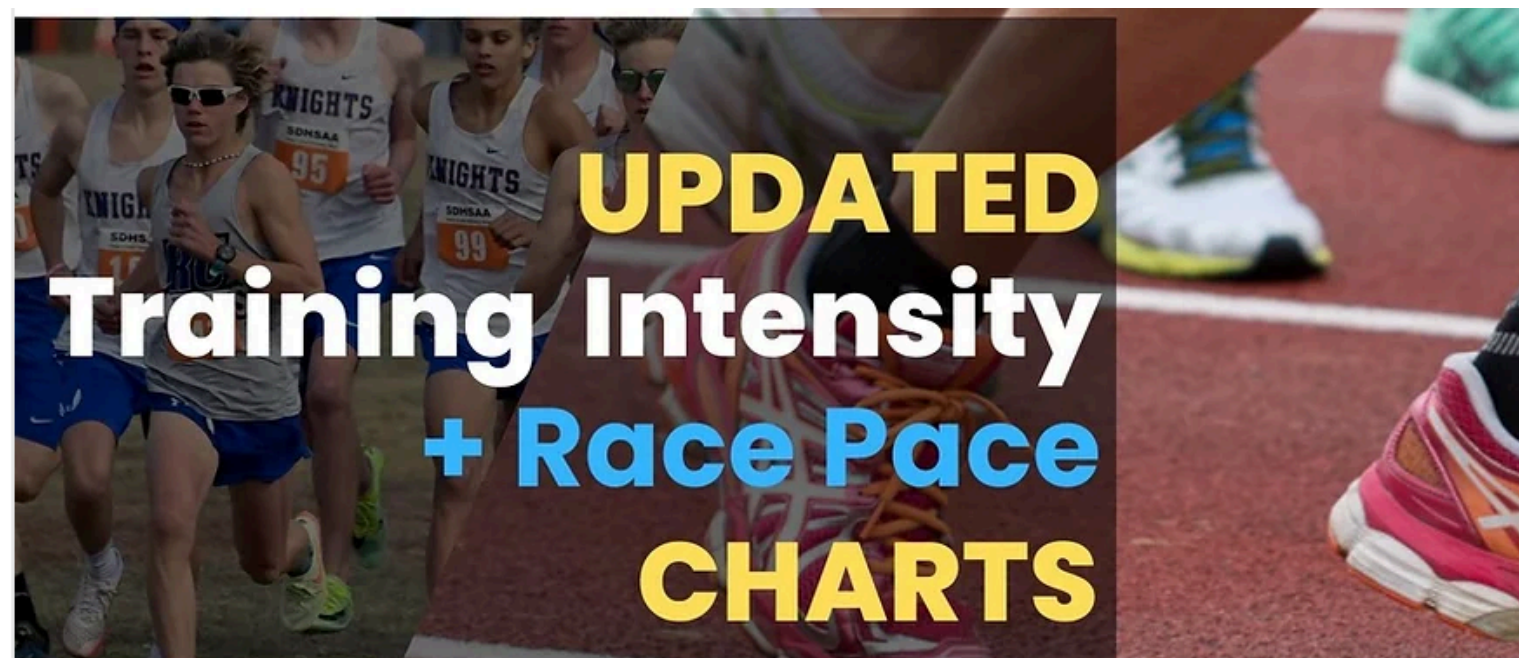
Birnbaum Goes Sub 4:00 in 2022 Brooks PR Invite Mile



Share



Watch on  YouTube



coachingdistance.com/d-crew



HOW IT WORKS



The Training Intensity Chart is designed to use actual (or predicted) race paces to guide training intensities.



Intensities are generated using actual personal best times in the 1600, 3200m and 5k Cross Country.



With training intensities for athletes running 6:30 to 3:55 in the 1600 meters, your team's training fits on one page.



The Race Pace Charts allow you to accurately program training paces for distances from 100m to 2km.



ENDURANCE RUNS

Endurance Runs are the foundation of training for distance runners. Most of the training during a week consists of easy, end running. Use the pace range on the chart within the desired parameters of the end range.



THRESHOLD RANGE

There is a large range of paces that effectively work for training lactate threshold. The Coaching Distance training charts use four different paces to improve lactate threshold.



RACE PACES

One of the best ways to inspire confidence in athletes is by training at race paces, goal and predicted paces. These charts include training paces for every track or cross country race distance.

QUESTIONS?

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