

ATHLETIC DEVELOPMENT FOR DISTANCE RUNNERS

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



RUNNINRAIDERS.COM





MAIN GOAL

Provide tools you can use to have a complete Athletic Development program, including:

- Intelligent Speed Training
- Simple Strength & Plyometric Exercises
- Pre/Post-Run Routines that address Skill, Mobility/Flexibility

BIOMOTOR SKILL DEVELOPMENT



Stamina

Speed

Max Speed
Speed Endurance
Race Speeds

Strength

Resistance Training
General Strength
Plyometric Training

Skill

Drills
Running Form
Biomechanics

Suppleness

Mobility & Flexibility
Foam Rolling



STAMINA

For most coaches, this is our comfort zone.

We're pretty good with assigning this work.

Know it well enough to experiment.

Most of our **training time** is spent in the stamina range.

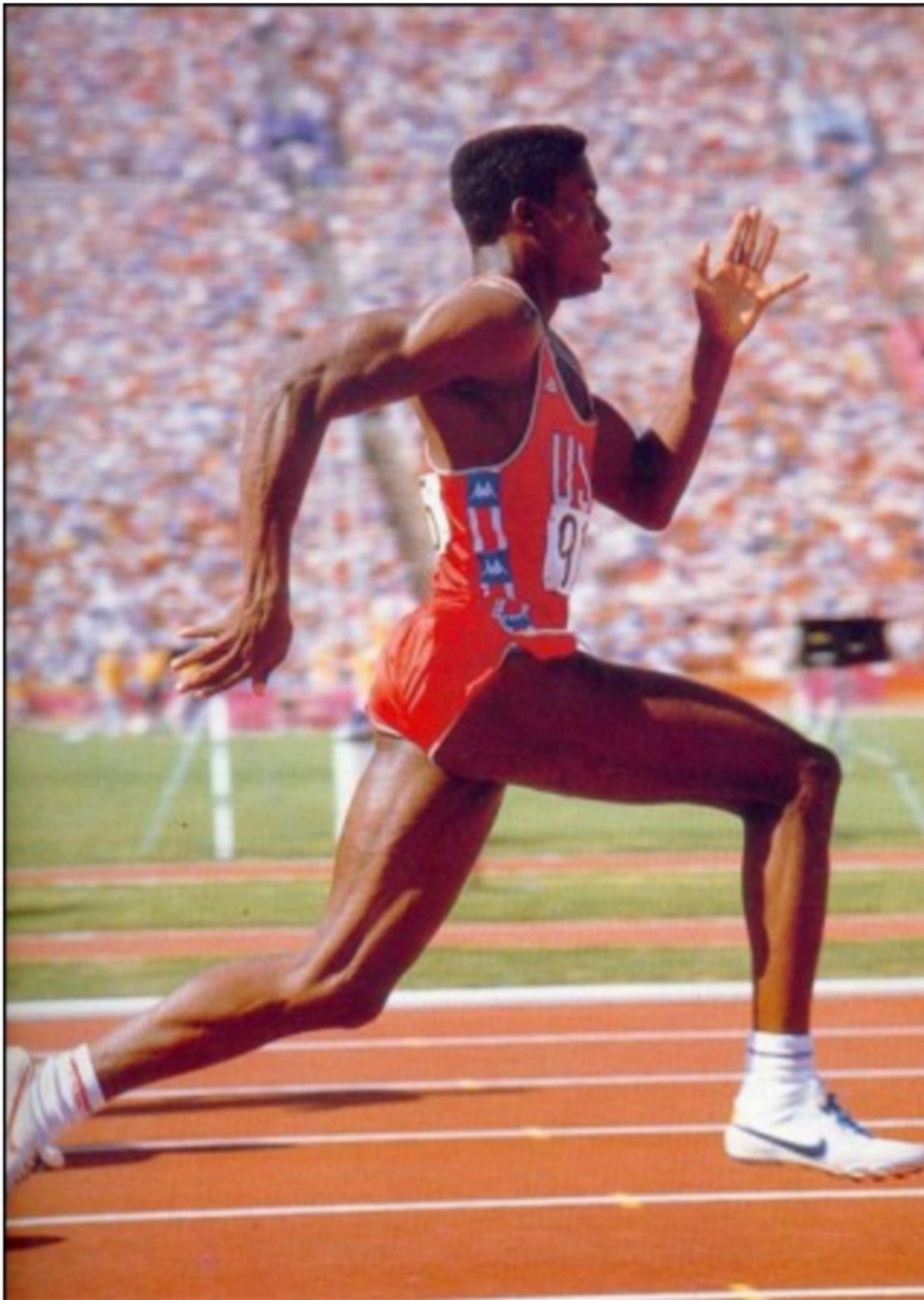
Global Volume

Miles per Week or
Minutes per Week

Volume @ the Threshold Range

Sub T
Tempo
LT

SPEED



Athletic Development Skill

Building a “base” of speed

These are not strides

Raises the potential for performance

4:30 Miler A



50s 400m

4:30 Miler B



53s 400m

INJURY RESISTANCE



**Failure to Achieve High Velocities Means
Untrained, Weak Tissues**

**Boo
Schexnayder**

**Coaching Distance
Webinar:** Speed in the
Distance Events and Its
Relationship to Injury



MAX SPEED DEVELOPMENT

Can't think like distance coaches.

Volume is not the driver for adaptation.

Generous recovery/ rest

Think of speed like sale: a little goes a long way, but too much ruins the meal.



Sprints

4-6x 40-60m

Sprint-Float-Sprint
4-6x 80-90m

Sprint-Float-Sprint

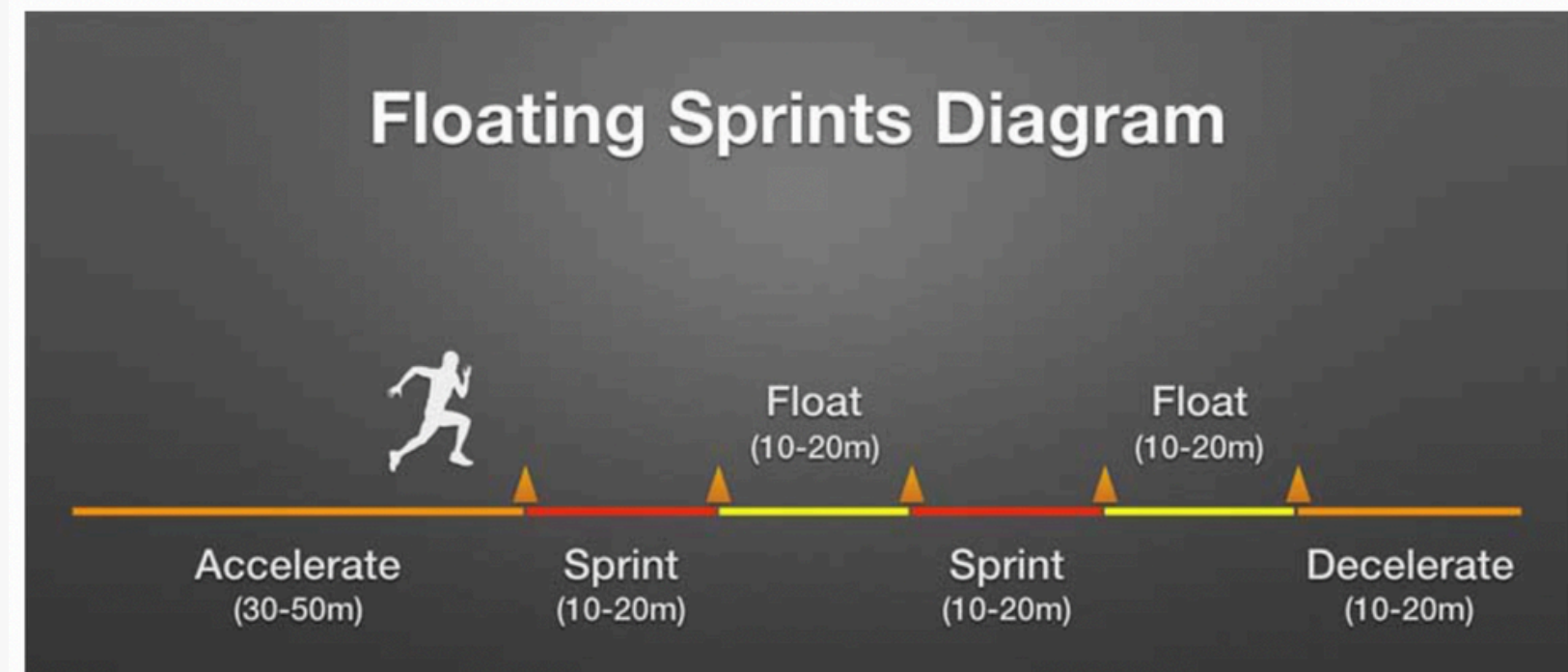


Image 1. The "ins and outs" workout is a staple with many elite sprint coaches, as well as team conditioning coaches. This diagram shows the most typical setup.

from Carl Valle @ SimplyFaster.com

HILL SPRINTS / RESISTED SPEED



Short Hill Sprints / Stadium Steps / Sleds

Use if you sense a heightened risk of injury

As a second “speed” workout of the week

Early season as preparation for max speed

Most of us were introduced to these short hill sprints by Steve Magness or Brad Hudson via Renato Canova

30-50m Hill Sprints

Workout Example: 6-8x50m Hills

SPEED ENDURANCE (400M)

- **Not a stand-alone workout as the cose is high (acidosis)**
- **“Tack-On” at the end of a threshold workout.**
- **Kids feel confident when they can blast 2-3x120's at the end of a Tempo run.**
- **Since we're adding this to another session, the volume is going to be low.**

Examples:

- **Race + 4x400 relay**
- **Tempo Run + 3-4x 100-150m SFS**
- **40m + 60m + 80m + 100m**

400

PROGRAMMING SPEED

If we want to improve basic speed, we have to sprint.

If we want to sprint, we need to be fresh.

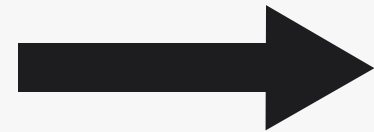
We have to be intelligent in
where we place speed work.

[illegible]

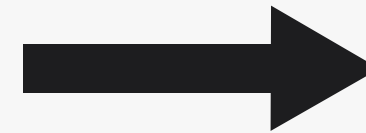
HOW DO YOU PROGRESS SPEED TRAINING?



**Acceleration
or Hill Sprints
6-8x30-40m**



**Speed (flat)
4-6x40-60m**



**Speed
Endurance
2-4x 80-120m**

STRENGTH TRAINING

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coaches should not hesitate to implement a well-planned, periodized ST program

The effects of resistance training on endurance distance running performance among highly trained runners: a systematic review

Linda M Yamamoto ¹, Rebecca M Lopez, Jennifer F Klau, Douglas J Casa, William J Kraemer, Carl M Maresh

- **Only studies w/ athletes 30+ mpw**
- **2.9% improvement in 3k/5k**



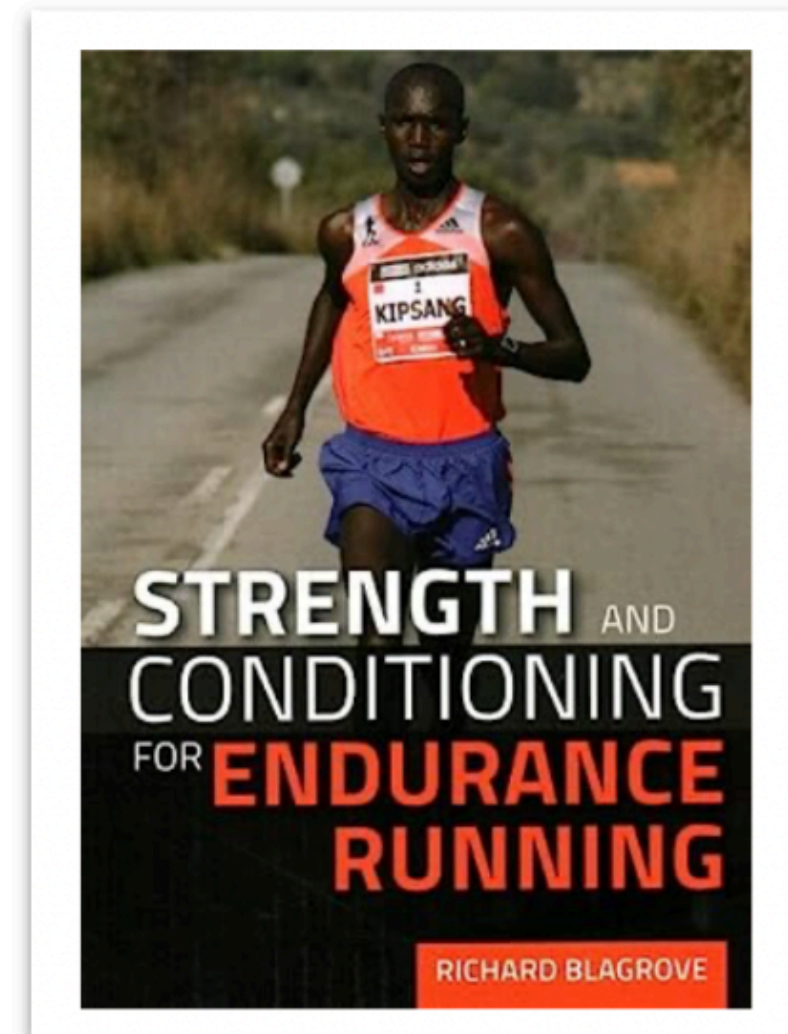
REDUCES THE RISK OF OVERUSE

Strength and Conditioning for Adolescent Endurance Runners

ABSTRACT

For the adolescent athlete who chooses to specialize in endurance running, strength and conditioning (S&C) activities provide a means of enhancing several important determinants of performance and may reduce the risk of overuse injury. It is recommended that adolescent endurance runners include at least two S&C sessions per week that comprise of movement skills training, plyometric and sprint training, resistance training, plus exercises designed to target specific tissues that are vulnerable to injury. This article describes how these modalities of training can be integrated into the routine of adolescent endurance runners.

Blagrove, et al 2018 Strength & Conditioning Journal .



2x Week

- **Movement Skills**
- **Plyometric Work**
- **Sprint Training**
- **Resistance Training**

What is the running workout today?



Does my strength theme match my running theme?



**Long intervals or threshold
HEAVY RECOVERY LIFTING**
☑ Uptempo warmup
☑ Circuits- MB, MB Catch-toss
☑ Circuits- weight room (BB)

**Short intervals or speed
development
FORCE PRODUCTION SKILLS**
☑ Uptempo warmup
☑ Jumping
☑ Throwing
☑ Short Sprints
☑ Olympic and/or static lifts

**Recovery run
RECOVERY LIFTING**
☑ Less intense warmup
☑ Circuits- BW, MB, Core
☑ Circuits- weight room (BB)

Strength Training for Distance Runners - Versatile Conditioning Improves Balance and Encourages Longevity

By: Carrie Lane from USTFCCA Track Techniques

© 2014 USTFCCA

GENERAL STRENGTH

✓ **movement variety**

✓ **strengthens under-utilized muscle groups**

✓ **don't need equipment**

General Strength Circuits

Taurus

Pushups
Prisoner Squats
V-Sits
Back Hypers
Pushups w/Clap
Rocket Jumps
Dips
Cossack Extensions
L-Overs
Wrestler's Bridge
Swimming
Burpees

Gemini

Single Leg Toe Raises (L-R)
Squat Toe Raises
Side Foot Toe Raises (L-R)
Closed Everted Toe Squats
Toe Lunge Walk (L-R)

Leo

Single Leg Squat (L-R)
Stationary Lunges (L-R)
Lunge Jumps (L-R)
Incline Pushups
Dips
Decline Pushups
Lateral Squats
Prisoner Squats
Rocket Jumps
Kneeling Good Mornings
Yogis (Front/Back)
Alternate Pelvic Tilt Heel Slides
V-Sits
L-Overs
Crunches
Squat Lunge Walks

Cancer

Prone Elbowstand Leg Lifts (L-R)
Supine Elbowstand Leg Lifts (L-R)
Handstand Leg Lifts (L-R)
Supine Handstand Leg Lifts (L-R)
Side Elbowstand Top Leg Lifts (L-R)
Side Handstand Top Leg Lifts (L-R)
Side Elbowstand Bottom Leg Lifts (L-R)
Side Handstand Bottom Leg Lifts (L-R)
Supine Elbowstand Hip Arch
Supine Shoulder Bridge Hip Arch
Low Reach Crunches
Low Reach Crunches w/Twist

Aquarius

Forward Leg Lift (L-R)
Forward Leg Lift/Flex (L-R)
Forward Leg Lift/Circle (L-R)
Russian Cossacks (L-R)
Bridge/Knee Extension (L-R)
Reverse Leg Lift/Flex (L-R)
Half Hypers (L-R)
Lunge Twist/Good Morning (L-R)
Half Crunches (L-R)
Crunches
Alternate Pelvic Tilt Heel Slides

Pillar

V-Sits
Back Hypers
Side Ups (L-R)
Leg Toss/Toe Touch/Hip Lifts
Crunches
Side Lifts
Back Hypers w/Twist
Crunches w/Twist L-Overs
Russian Cossacks (L-R)
Wrestler's Bridge
Pelvic Tilt Isometric
Pelvic Tilt Bicycle
Pelvic Tilt Crunches

Scorpius

Forward Squat Walk
Backward Squat Walk
Lateral Squat Walk (L-R)
Pushup Walk



STRENGTH

 TRAP BAR DEADLIFT 3X5

 PUSH PRESS 3X5

 ROWS 2X10

 GOBLET SQUAT 2X10

 WAITER'S CARRY 20R/20L

 SCOOP TOSS 4X2

 RUSSIAN TWIST X10-20

Simple, easy to teach exercises

Train Movements

Takes 15-20 minutes

- **Push**
- **Pull**
- **Squat**
- **Hinge**
- **Carry**
- **Rotation**
- **Power/Explosive**

I can adapt these to use with kettlebells, dumbbells or a traditional weight room setting

PLYOMETRIC TRAINING

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**if I were to be a head coach again...I'd
modify my warm-up and infuse jump-rope
training 2-4 times per week**

**Dr. Jeff
Messer**

**Coaching Distance
Webinar:** Evidence-
Based Training

**Jump-Rope Training: Improved 3-km Time-Trial
Performance in Endurance Runners via Enhanced
Lower-Limb Reactivity and Foot-Arch Stiffness**

Felipe García-Pinillos, Carlos Lago-Fuentes, Pedro A Latorre-Román, Antonio Pantoja-Vallejo,
Rodrigo Ramirez-Campillo





PMID: 32163923 DOI: [10.1123/ijsspp.2019-0529](https://doi.org/10.1123/ijsspp.2019-0529)

30s on/off for 5'



INTRODUCTORY EXAMPLES

Skips/Bounds

-  SKIPS FOR HEIGHT 1X20M
-  SKIPS FOR DISTANCE 1X20M
-  SCISSORS 1X20M
-  BOUNDS 1X20M

In-Place Jumps

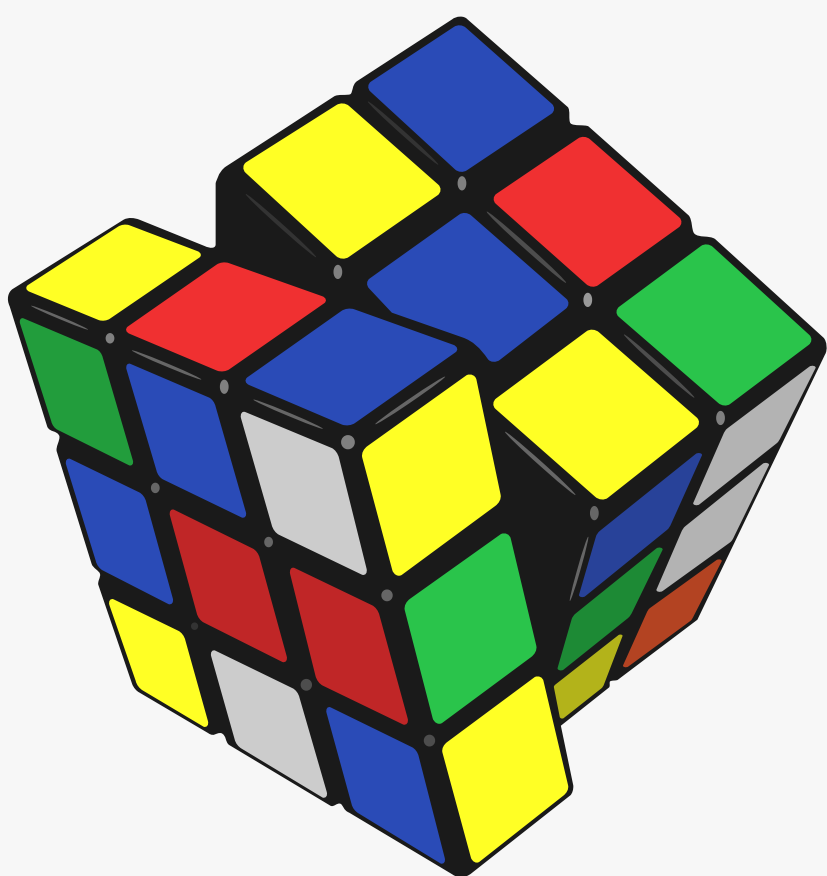
-  POGO 1X15
-  SIDE TO SIDE HOPS 1X15
-  KNEE TUCK JUMPS 1X5
-  ROCKET JUMPS 1X5
-  LUNGE JUMPS 1X5

Multi-Throws

-  HIGH TOSS 1X5
-  OVERHEAD BACK 1X5
-  SINGLE LEG TOSS 1X10
-  TWIST TOSS 1X10

WHERE DO YOU PUT ALL OF THIS?

You're better off doing less work
and having it in the correct
locations than trying to cram it in
where it doesn't belong.



	Monday
	AM- Speed/Plyo Skips & Bounds
	PM- Moderate Run + General Strength
	Tuesday
	Threshold Workout + SE (3x80m)
	Strength
	Wednesday
	(just wait for this one)
	Thursday
	Plyo Warm-Up (In-Place Jumps)
	Race Speeds (5k-800)
	Strength

SKILL/ BIOMECHANICS/ FORM COORDINATION

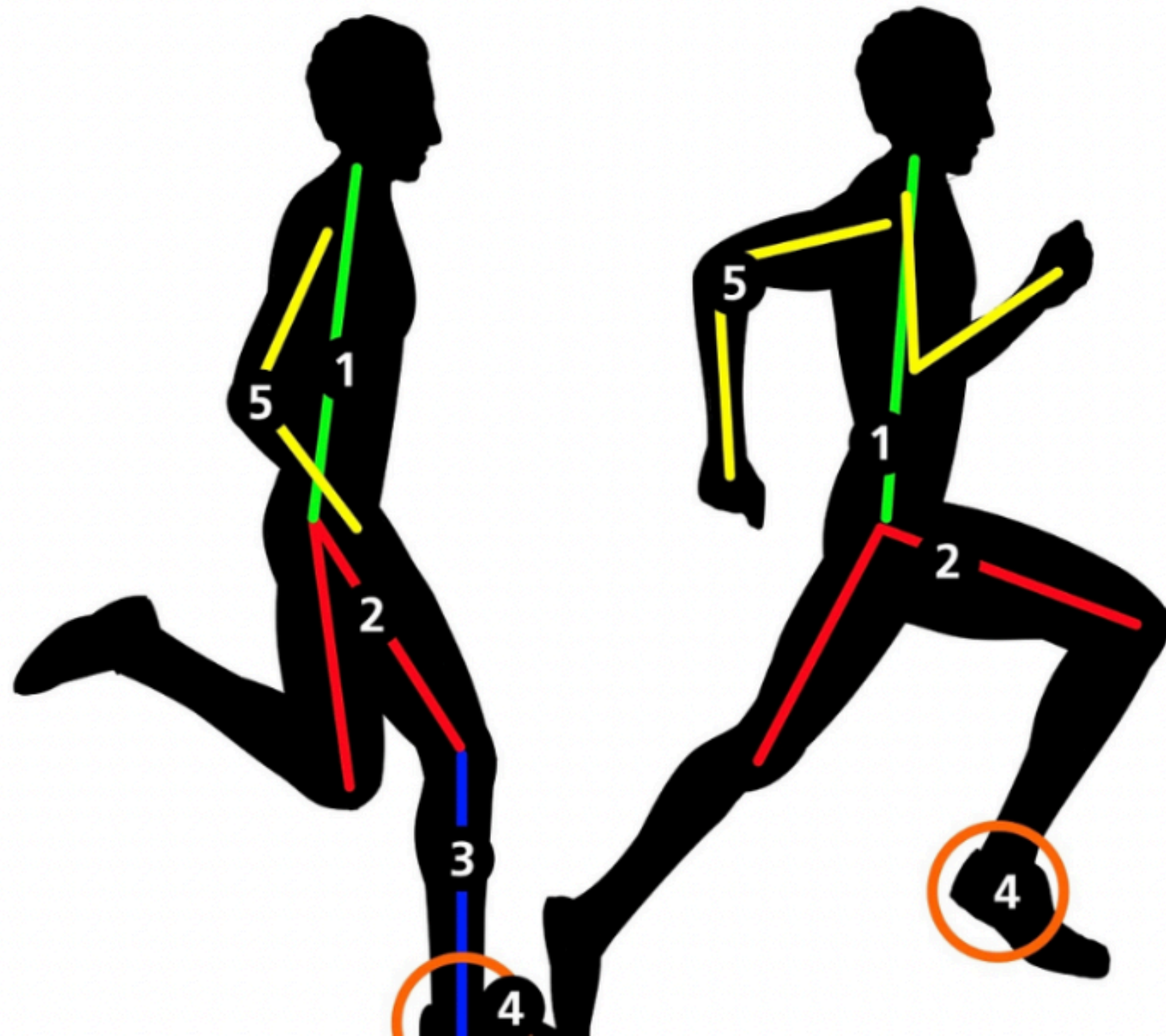


**do not forget that gait is chosen under the
constraints of the body**

**Dr. John
Davis**

Coaching Distance
Webinar: The
Biomechanics of Running
Injuries





- Run tall
- Flexed Ankles
- Scissoring Thighs
- Strike from above (vertical shin)
- Counter-balance arms

SPRINT DRILLS

1x20m each

- Knee-to-Chest & Foot-to-Butt
- Toe Grabs
- Side Shuffles
- Karioka
- A-Skips
- B-Skips
- High Knees
- Butt Kicks



EASIER TO WORK ON FORM WHEN YOU'RE NOT TIRED

- SPRINT DRILLS
- SPRINTS/ HILL SPRINTS
- RACE PACE WORK
- STRIDES/ WICKETS

SUPPLENESS / MOBILITY & FLEXIBILITY



**you have to have enough mobility to run.
supple tissues work better, plain and simple.**

Jay Dicharry

Anatomy for Runners
p. 214







Anatomy for Runners

UNLOCKING YOUR ATHLETIC POTENTIAL FOR
HEALTH, SPEED, AND INJURY PREVENTION



JAY DICHARRY, MPT, SCS

DYNAMOB

-  FRONT TO BACK LUNGES X3
-  SIDE TO SIDE LUNGES X3
-  KNEE TO CHEST X5
-  SIDE TO SIDE LEG SWINGS X10
-  FRONT TO BACK LEG SWINGS X10
-  HURDLE STEP-OVERS X10

rope + roll /



ROPE STRETCHES (5-10x2s REPS)

- Straight-leg Hamstring
- Over & Out

STRETCHES (NO ROPE)

- Quadriceps
- Glutes
- Trunk Extensors

FOAM ROLLING (@ home)

- Hips to Toes
- Roll above and below problem areas

coachingdistance.com/d-crew



QUESTIONS?

JESSE@COACHINGDISTANCE.COM