

## Short run vs. Long run development of Distance Runners

$$\text{Perf} = f(P(T_0, X_0, E), E)$$

Represents a growth mindset belief regarding running performance

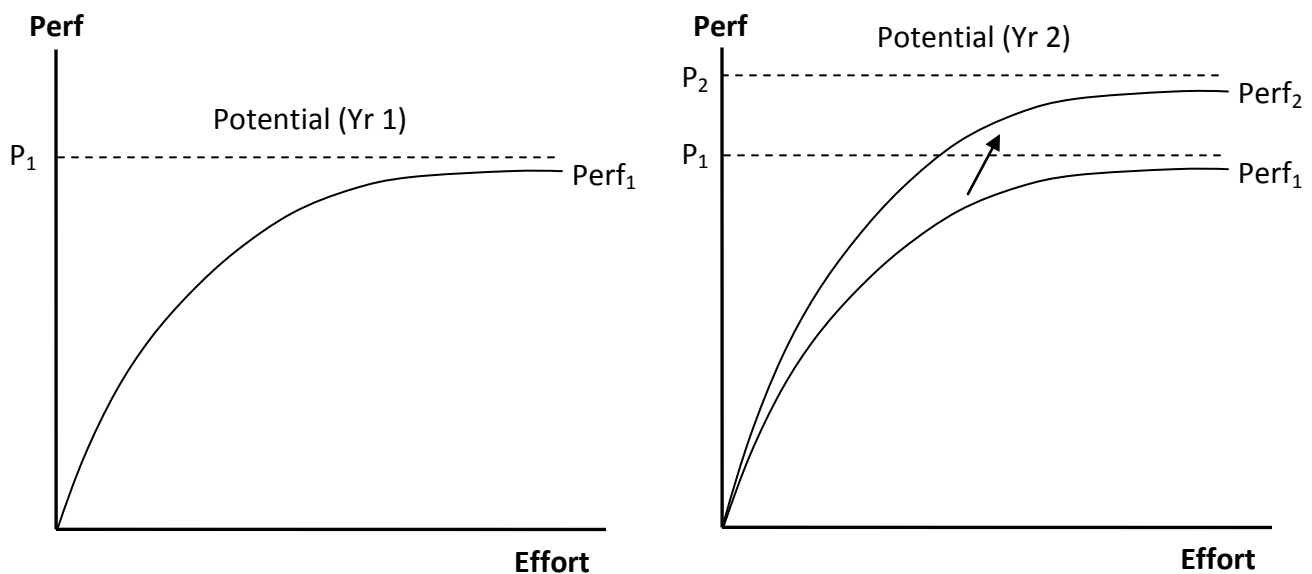
(taken from my talk on Mindsets at the 2018 Clinic, and based on work by Carol Dweck)

Performance (Perf) is directly affected by effort (E)

Performance is also directly affected by Potential (P)

In turn, Potential is a function of

- a fixed amount of talent ( $T_0$  – a set of inherited physiological characteristics)
- a fixed set of structural variables ( $X_0$  – physical characteristics like muscular strength, muscle fiber ratios, etc.)
- effort



Effort is what we focus on in the short run

- Emphasis on helping someone get faster, staying healthy, etc.

Structural variables are what we focus on in the long run, and preparing a runner to apply greater efforts in the future

- Emphasis on helping an athlete get stronger and better prepared for more work/greater effort in future seasons

## Short run concepts that affect the long run

1. Consistency in training
  - Running is a cumulative sport
  - Success is more likely with long, uninterrupted blocks of training
2. Inclusion of speed
  - Speed develops efficiency
  - Speed helps create better form
3. Strength training
  - Bigger engines require a stronger frame
  - Over time, a stronger core impacts form and efficiency

## Long run concepts that work

- Develop racing range
  - we don't peg athletes into one race
  - consider an athlete's progression into post-HS or post-MS racing
- Training progression – raising the limit over time
  - particularly important with girls
  - allow for adjustment into HS

### Training progressions we use with our athletes

- |                    |   |
|--------------------|---|
| (a) Miles per week | Seniors: 50-55 mpw (max)<br>Juniors: 40-45 mpw (max)<br>Sophomores: 35-40 mpw (max)<br>Freshmen: 25-30 mpw (max)  |
| (b) Long runs      | Seniors: 90 min<br>Juniors: 80 min<br>Sophomores: 70 min<br>Freshmen: 60 min  |
| (c) Interval work  | Seniors: 6 x 1000, 6 x 1200<br>Juniors: 5 x 1000, 5 x 1200<br>Sophomores: 5 x 1000, 4 x 1200<br>Freshmen: 4 x 1000, 3 x 1200  |
| (d) 2k Hill loops  | Seniors: 5 x 2k hill loops<br>Juniors: 5 x 2k hill loops<br>Sophomores: 4 x 2k hill loops<br>Freshmen: 4 x 2k hill loops  |
| (e) Crosstraining  | Seniors: 2-3 days/week supplemental crosstraining<br>Juniors: 2 days/week supplemental crosstraining<br>Sophomores: 1-2 days/week supplemental crosstraining<br>Freshmen: no supplemental crosstraining |

**Mileage progressions - From Running Times article, "The Jump" (Jay Johnson)**

<b>HS Boys</b>	<b>Typical Miles/Week</b>	<b>HS Girls</b>	<b>Typical Mile/Week</b>
Freshmen	30 miles	Freshmen	25 miles
Sophomores	40 miles	Sophomores	30-35 miles
Juniors	50 miles	Juniors	35-45 miles
Seniors	60 miles	Seniors	45-60 miles

**Footlocker finishers mileage survey (from "the Harrier", 3/2007)**

<b>HS Boys</b>	<b>Typical Miles per Week</b>			<b>HS Girls</b>	<b>Typical Miles per Week</b>		
	<b>Grade</b>	<b>Summer</b>	<b>Early Fall</b>		<b>Peak Season</b>	<b>Grade</b>	<b>Summer</b>
So	50	40-50	40	Fr	20-25	30	25-30
So	50	50-59	40-49	Fr	60-70	50-60	40-50
So	50	55-60	60	So	60	50-60	30-40
Jr	60-65	45-50	-	So	50-55	50-55	-
Jr	100	50	50	So	37	37	30
Jr	50-60	50-60	50	Jr	60	60	60
Jr	60	-	-	Jr	40	-	-
Jr	60	60-75	45-55	Jr	40-45	40-50	40-45
Jr	40	-	-	Jr	30-35	30-35	30
Jr	30-40	40-50	-	Jr	55-60	35-45	25-30
Jr	80	-	95	Jr	55-60	-	-
Sr	50	50	35-50	Jr	20-35	-	34-40
Sr	50-75	60-65	60-65	Jr	40	-	-
Sr	60	50-60	50-60	Jr	128	70	45
Sr	60-65	50-65	40-55	Jr	35-50	35-40	25-35
Sr	42-70	56-70	-	Jr	45	45	35-40
Sr	100	70	50	Sr	50-55	-	-
Sr	50	30	25	Sr	-	35+	40+
Sr	40-48	40-45	30-35	Sr	0	20-25	20-25
Sr	50-70	-	-	Sr	30-40	55-65	55-65
Sr	60	60-70	40	Sr	55-65	55-65	50
Sr	70	50-60	30-40	Sr	50	50	35
Sr	40-60	55-60	40-45	Sr	70-80	70	50
Sr	35	35	37	Sr	-	35	35
Sr	70	65-70	-	Sr	70-75	70-75	60-70
Sr	70	-	-	Sr	50-55	50-55	45-50
Sr	55	55	45	Sr	40	50	35-40
Sr	50-70	up to 60	40-50	Sr	60-70	60	50
Sr	90-100	90	70-85	Sr	45	50	-
Sr	90	60-70	50-60	Sr	70	50-60	30-40
Sr	60-75	-	-	Sr	40	40	20-30
				Sr	40-50	injured	30
				Sr	45	40	35
				Sr	45	45	35-40

## Thoughts on General Strength training

1. Strength, muscular weakness/imbalance and activating the glutes
  - Developing quads and calves as shock absorbers
  - Addressing core and hip girdle weaknesses
  - Running with the glutes
  - Operating in 3 planes of motion
    - Sagittal - front/back (forward/backward lunges)
    - Frontal - side/side (lateral/side lunge)
    - Transverse – twisting/rotation (upper body rotation – walking lunge w/ twist)
2. Equipment
  - Mini-Exercise-bands ([www.performbetter.com](http://www.performbetter.com))
  - Foam roller
  - Kettlebells (10, 15, 20 lbs)
3. The importance of good form (and patience)
4. Record keeping
5. Areas of concern
  - Core strength – planks, resisted movement, no crunches
  - Hip girdle – Myrtle, hurdle walkovers
  - Developing balance
6. Progression (periodized strength training)
7. Individualized strength training
8. ***Time is a valuable commodity – be efficient with anything you add***

## Warmdown routine

### Stretching Drills

Piriformis Walk: 4 steps – 2 right/2 left and hold stretch for 15 seconds on each step

Hip flexor stretch walk: 4 steps – 2 right/2 left and hold stretch for 15 seconds on each step

IT band stretch walk: 4 steps – 2 right/2 left and hold stretch for 15 seconds on each step

**Foam rolling** (roll slowly on each area for no less than 30 sec's)

- Calves (do your calves one at a time)
- IT band (outside of quad between knee and hip bone)

### Hip girdle exercises I (**bands**)

*Freshmen/Sophomores: green bands*

*Juniors/Seniors: blue bands*

Standing hip abduction w/ bands – 15 reps per leg

Sidestep (in lunge position) w/ bands – 15 steps w/ right leg leading, 15 steps w/ left leg leading

### Hip girdle exercises II

Hip drop (set 1) – 15 reps per side

Hip drop (set 2) – 15 reps per side

{ **Girls doing the Strength routine:** you can stop here and switch to the Strength routine }  
{ **Girls not doing the Strength routine:** continue with what's listed below } }

One leg psoas hold – 30 sec per leg

Walking lunge w/ A-march pose (**hold pose for 3-count**) – 15 steps out

Walking lunge w/ A-march pose (**hold pose for 3-count**) – 15 steps back

Walking lunge w/ twist – 15 steps out

Walking lunge w/ twist – 15 steps back

	<b>Freshmen</b>	<b>Sophomores</b>	<b>Juniors/Seniors</b>
Front plank	90 seconds	2 minutes	2:30
Side plank (right arm)	90 seconds	2 minutes	2:30
Reverse (supine) plank	90 seconds	2 minutes	2:30
Side plank (left arm)	90 seconds	2 minutes	2:30
Supermans	2 sets of 15 reps	2 sets of 15 reps	2 sets of 15 reps

One leg balancing ABCs – 1 set per leg

Bench bar dips – 50 reps

Pushups – 40 reps

## Warmdown routine

### Stretching Drills

Piriformis Walk: 4 steps – 2 right/2 left and hold stretch for 15 seconds on each step

Hip flexor stretch walk: 4 steps – 2 right/2 left and hold stretch for 15 seconds on each step

IT band stretch walk: 4 steps – 2 right/2 left and hold stretch for 15 seconds on each step

### Foam rolling (roll slowly on each area for no less than 30 sec's)

- Calves (do your calves one at a time)
- IT band (outside of quad between knee and hip bone)

### Hip girdle exercises

Hip drop (set 1) – 15 reps per side

Hip drop (set 2) – 15 reps per side

### Hurdle walkover exercises

Forward walkover – 15 reps

Backward walkover – 15 reps

Forward walkover – 15 reps

Backward walkover – 15 reps

High knee sidestep – 15 reps facing left

High knee sidestep – 15 reps facing right

Over-Unders – 15 reps w/ right leg leading off

Over-Unders – 15 reps w/ left leg leading off

Under-Unders – 15 reps w/ right leg leading off

Under-Unders – 15 reps w/ left leg leading off

### Core exercises:

	<b>Freshmen</b>	<b>Sophomores</b>	<b>Juniors/Seniors</b>
Front plank	2 minutes	2:30	3 minutes
Side plank (right arm)	2 minutes	2:30	3 minutes
Reverse (supine) plank	2 minutes	2:30	3 minutes
Side plank (left arm)	2 minutes	2:30	3 minutes
Supermans	2 sets of 15 reps	2 sets of 15 reps	2 sets of 15 reps

### General strength

- { Pushups (Freshmen/Sophomores): 40 reps
- { Pushups (Juniors/Seniors): 50 reps

- { Bench bar dips (Freshmen/Sophomores): 50 reps
- { Bench bar dips (Juniors/Seniors): 60 reps

## Strength routine

### **Everyone:**

One leg balancing psoas hold – 30 sec per leg

Walking lunge w/ A-march pose (hold pose for 3-count) – 15 steps out

Walking lunge w/ A-march pose (hold pose for 3-count) – 15 steps back

Walking lunge w/ twist – 15 steps out

Walking lunge w/ twist – 15 steps back

### **Juniors/Seniors (only):**

Bench Bar dips – 50 reps

*(if necessary, break into sets: e.g. 2 x 25)*

### **Freshmen/Sophomores (only):**

Bench Bar dips – 40 reps

*(if necessary, break into sets: e.g. 2 x 20)*

### **Everyone:**

Step ups (onto a higher surface) – 15 reps per leg (pose for 3 count, lower slowly)

### **Juniors/Seniors (only):**

Pushups – 40 reps

*(if necessary, break into sets: e.g. 2 x 20)*

### **Freshmen/Sophomores (only):**

Pushups – 30 reps

*(if necessary, break into sets: e.g. 2 x 15)*

### **Everyone:**

Static Hip flexor stretch – hold for 20 seconds/leg

Glute bridge - abduction w/ (black or blue) **bands** – 2 sets of 15 reps (move legs slowly, not fast)

Hip thrust w/ blue **bands** (around waist, hold down from below) – 2 sets of 15 reps

One leg balancing ABCs – 1 set per leg

Pull-ups – 1 set of max reps (**record reps**)