

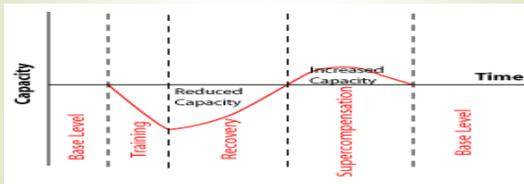
The Simple Path to Stronger Running & Injury Prevention

Engines develop horsepower. More horsepower is better, but its useless unless it is sent to the wheels through a stable chassis

-Jay Dicharry

Adapt

We've all seen this overload principle diagram. Looks VERY easy on paper. All of the simple rules we will discuss should play a huge part into this diagram.



3 Simple Rules to Running Faster**

- ▶ Stimulate-

- ▶ Recovery-

- ▶ Adapt-

Stimulate

- To increase mileage or Not



- Event Specific



****Even though each of these runners had different mileage and event workouts, they were still able to run fast times for them in the same exact event.**

Ollie Isom Invitational

ICON KEY: + NCAA DI

DATE: 04/27/13 LOCATION: Butler County CC - El Dorado, KS

Men's 5000 Meters **Held out my top 2 5000m due to them running different workout. This was week before our Conference/Region meet

PLACE	NAME	YEAR	TEAM	TIME
1.	Michael, Tegan	SO-2	Allen County CC	15:39.27
2.	Colglazier, Garrett	SO-2	Allen County CC	15:40.36
3.	Parker, Dakota	SO-2	Allen County CC	15:44.98
4.	Whittaker, Josh	SO-2	Allen County CC	15:48.88
5.	Rachford, Patrick	FR-1	Allen County CC	15:49.32
6.	Schawilberg, Kyle	FR-1	Allen County CC	15:49.46
7.	White, Kevin	SO-2	Allen County CC	15:51.79
8.	Simon, Daniel	SR-4	Fort Hays St.	15:54.79
9.	Spence, Jacob	SO-2	Allen County CC	15:57.02
10.	Christian, Gerald	FR-1	Allen County CC	16:07.54
11.	Regehr, Bentley	JR-3	Fort Hays St.	16:09.79
12.	McCullough, Jason	FR-1	Hays Track Club	16:10.74
13.	Coffman, Jacob	FR-1	Fort Hays St.	16:21.60
14.	Toews, Wesley	SR-4	Fort Hays St.	16:22.13
15.	Duffy, Colin	FR-1	Unattached-Wichita	16:32.91
16.	Holley, Duncan	FR-1	Fort Hays St.	16:42.23
17.	Groom, Thomas	SO-2	Butler County CC	16:27.01

Stimulate-Ancillary Development

■ Just a weak tree, there needs to be ancillary development so that the tree can grow strong



- Core
 - Abdominal: 5 days a week, mix it up across all planes
 - Back: tie it into upper body minor group lifts
 - Pelvis: tie it into lower body minor group lifts

Stimulate-Ancillary Development

Strength Training (Vern Gambetta, Istvan Javorek)

- General Strength:
 -
 -
- Traditional Lifting: bench, military, squat, clean, machines
 -
 -
 -
- Functional Lifting: Use this to tie in with traditional lifts
 -

Stimulate-Injury Prevention

Total Body Exercises (Jay Johnson, Jay Dicharry, Vern Gambetta)

Flexibility

-
-
-

Warm Up

-
-
-
-

Cool Down

-
-
-
-

Muscle Imbalance (Jay Dicharry)

-
-

Post Hab

-
-

Stimulate-Injury Prevention

Biomechanics

Heal Strike vs Mid Foot vs Barefoot

- Before you go and mess with this, make sure you understand pros and cons to these along with the injuries that are associated with all of these methods.
- Key is to become efficient, ever tried rolling a bowling ball over rocks
- Running is basically 1 legged bounding over and over again
 -
 -
- Understanding the potential for injuries is key and what injuries are associated with what issue. (Running Anatomy)
- Sprint Drills are for EVERYBODY not just sprinters. Teaches runners to run correctly.

Common Overuse Injuries

Whether you're mid foot or heel striker, our sport is built off of over-usage injuries. The key is to recognize them and plan for them with proper injury prevention. Every injury below has a recommended drill associated

- Achilles Tendonitis: Rotational forces and propulsive forces
- Patellofemoral Syndrome (runners knee): Impact and Rotational forces
- Iliotibial Band Syndrome: Rotational Forces
- Shin Splints: Impact and Rotational Forces
- Peroneal Tendon: Impact and Rotational Forces
- Plantar Fasciitis: Impact, Rotational, and Propulsive Forces
- Hamstring/Calf/Achilles Strains: Propulsive Forces
- Knee/Hip/Lower Back: Impact Forces
- Stress Fractures: Impact Forces

Recovery-Sleep

- 6.5 to 10hrs – we already knew this
 - But why.....because of hormones that are linked to our appetite and hunger. "College Freshman Fifteen"
- Rest could be considered more important than training itself. Establish a routine, your body will become more efficient. Even odd routines work.
- Hormones and Repairs are made during sleep cycles.

Recovery-Nutrition

- As much as it is funny, you really are what you eat
- 3500 extra calories a week above BMR will gain 1lb of weight and vice versa. Think "life of college student"
 - Try and get well balanced diet, more so teaching athletes not to skip meals, starve or overeat "FINE LINE" to all of these. Be extra careful here.
 - Vitamins/Minerals:
 - Vitamins: keys to unlock the foods energy potential Water/Fat Soluble
 - Calcium: body only absorbs 500-600mg at time need 1000mg
 - Iron (ferritin): mostly in women, but if you believe a runner is low in iron getting ferritin test would be first. Warning: some Dr won't do it.
 - Gluten Free Diet: Have read some on this, but honestly don't know enough about it to speak on it, included for coaches research

Recovery-Stress

The silent killer, this can come in the form of just about anything in our lives, both from ourselves as well as people around us. Key is recognizing and addressing it accordingly and respectfully.

- ▶ NOT just the athletes, coaches are at risk of this as well which can carry over into the stress of their athletes.
- ▶ Dog Days will always arrive as the weather and stress changes throughout the year.
- ▶ Have added stress management practices in place
 - ▶ changing the environment briefly may help with stress

Example of How Adaptation Works



**Iron – Calcium – Potassium - Zinc

Liquid Iron (ferrous sulfate elixir)

- 1st week – 1 tsp. with 8oz. OJ + 500mg Vitamin C (breakfast + dinner)
- 2nd week – 1 tbs. As before (breakfast)/ 1 tsp as before (dinner)
- 3rd week – 1 tbs. As before (breakfast)/ 1 tsp as before (dinner)
- 4th week – 1 tbs. As before (breakfast/lunch/dinner)

TAKE IRON: 30minutes prior to meals (or) 90mintues after meals

TAKE CALCIUM: Separate from iron, so whenever you are not taking iron

Calcium – 99% in body is in bones, 1% flows through body

At least 1000mg a day, body only absorbs 500mg at a time.

Body only absorbs 30% of dairy products, glass of milk = 300mg, but body will only take 90mg

***Potassium – maintain normal water balance in the body and is essential for muscle contraction. FOODS: melons, bananas, sport drinks,

***Zinc Lozenges – weak link in the immune system, low dose(15mg)

**Vitamins

■ VITAMINS DO NOT CONTAIN ENERGY (or calories); they do play a role in assisting our bodies with releasing and utilizing the energy found in (C,F,P).

FAT-Soluble ^{-excess is absorbed & stored in body fat & brain}	100%	Upper Limit
Vitamin A	3,000 IU	10,000IU
Vitamin D	400 IU	2,000 IU
Vitamin E	30 IU	1,000 IU
Vitamin K	120 mcg	Not determined

*IU = IU's measure the potency of a drug, not its mass or weight

Water-Soluble ^{-excess is eliminated in the urine}		
Vitamin B ₁ – thiamin	1.2mg	Not determined
Vitamin B ₂ – riboflavin	1.3mg	Not determined
Vitamin B ₆	1.3mg	100mg
Vitamin B ₁₂	2.4mcg	Not determined
Niacin	16mg	35mg
Vitamin C	90mg	2,000mg
Folic acid	400mcg	1,000mg

**Recommended Dietary Allowance (RDA)

Here the RDA for the different micronutrients

Nutrient	Primary Function
B-Vitamins (WS)	Coenzyme involved in carbohydrate metabolism
Calcium (FS)	Primary component of bone and teeth structure, supports muscle contraction relaxation
Vitamin D	Regulates blood calcium levels
Phosphorus	Assists in maintaining fluid balance
Magnesium	An essential component of bone tissue
Iron	Assists with oxygen transport in our blood Transport of oxygen into muscle cells
Zinc	Plays a role in proper development and function of immune system
Vitamin C (WS)	Enhances immune function, enhances absorption of iron

References & Recommended Readings

These are these books and these individuals for reference

Jay Dicharry, MPT, SCS
-Anatomy for Runners

Jay Johnson, Elite Coach, www.coachjayjohnson.com

Vern Gambetta, Founding Father of Functional Sports Training

Running Anatomy, by Joe Puleo & Dr. Patrick Milroy

Natural Running, Danny Abshire w/ Brian Metzler

Running The BK Method, DVD
