“TRAIN TO WIN”
Movement Mastery

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US OPEN 2015
TOP MEN DISTANCE RUN THROUGH 3 ROUNDS

<table>
<thead>
<tr>
<th>Player</th>
<th>Distance</th>
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</thead>
<tbody>
<tr>
<td>R. Federer</td>
<td>2.34mi</td>
</tr>
<tr>
<td>N. Djokovic</td>
<td>3.39mi</td>
</tr>
<tr>
<td>M. Cilic</td>
<td>3.95mi</td>
</tr>
<tr>
<td>S. Wawrinka</td>
<td>4.35mi</td>
</tr>
<tr>
<td>A. Murray</td>
<td>5.28mi</td>
</tr>
<tr>
<td>D. Ferrer</td>
<td>5.40mi</td>
</tr>
<tr>
<td>R. Nadal</td>
<td>5.84mi</td>
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</table>

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“To be a better specialist you need to be a better generalist” STEVEN PLISK

“Why teach your athletes calculus if they haven't mastered addition and subtraction”

Exercise experience (show your athletes how and why)

Sound teaching of mechanics is the best injury prevention tactic (Show and Tell them why!!!) To be tolerant to snake bite, we need to give doses of venom

Force expressions at the joints (shear, compression, distraction, torque) MECHANICAL TOLERANCE

What parenting has taught me about coaching (Consistency-Patience-Pick your battles)

AGILITY FROM A GENERAL PERSEPECTIVE (Fundamental)
Passive versus Active restraint

Active versus Passive Restraint (Soft tissue versus connective tissue roles) All tissue is important it is a matter of when!
(“Who is being called on to help out….now”)

FOUNDATION
Factors that influence agility

- Anticipation
- Reaction
- Impulse
- Strength
- Power
- Speed
- Neuromuscular coordination (CER, SSC)
- Mobility and Stability
- Proprioceptive awareness (relative to mechanical efficiency (Rate of force control)
Agility training remains consistent regardless of the sport or position played.
The goals and or the stimulus an athlete reacts to can alter, but not the mechanics needed to achieve the goal. (Must be aware of restraint)
Leverage the levers about the center of mass (athlete accountability of their own performance).
Bottom line.....how do we get back to acceleration?
“I don’t need my athletes to do extraordinary things, but I do need them to do ordinary things extraordinarily well!”

**ECCENTRIC CONTROL**

Greater amount of athlete coordination is needed with movement in frontal and transverse plane motions.
All movement has tri planar influences (Sagittal, Frontal, Transverse). The ability to control the body in the desired plane of motion minimizes joint stress and energy leaks or inefficiency.
Utilizing the edges of the feet, angles of the shins relative to the ground, the bend of the hips, dissociation of the hips and the trunk is the start to making athletes more agile.
How do we best reposition the feet about the COM
The foot, hip, and trunk have three degrees of movement. That is movement in the sagittal, frontal, and transverse plane.

Greater degrees of motion increases the demand of stability *(the knee is a servant to the foot and the hip).* Greg Roskopf

Again, efficiency *(and genetic factors)* is what typically separates the quickest people. (Ryan Écher example)
**THE HIP/TRUNK**

- Greatest force producer
- A “near perfect structure” for support and as force generator
- A neurologically sound muscular system above and below the structure make it the “perfect structure!”
- Slow twitch innervation should proceed Fast twitch activation. *(tonic vs. phasic)* Integrity versus Locomotion
- Stability of the pelvis relies on the integrated activation of all hip and trunk musculature

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**Motor Skill Mastery**

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How do we make athletes more efficient?

Teaching and rehearsal of the fundamentals, a lost concept/art in today's athletic curriculum. Focus on body awareness and eccentric control.

"We train animals and we teach athletes" – Loren Seagrave

Teach in Chunks (Part / Whole Teaching methods)

The Talent Code by Daniel Coyle

**FUNDAMENTAL SKILLS**

"THE ATHLETES TOOL BOX"

- Jump/ Hop (vertical and horizontal)
- Squat and Lunge position (athletic position, deceleration) SNAP DOWNNS!!
- Linear (acceleration and transition/Top End Speed, Backpedal, Curvilinear)
- Frontal (shuffle, speed shuffle, carioca, slides, angle pedal, cross over runs)
- Transition "skill integration" (cross-over, drop step) Transverse plane, single leg cut inside, single leg outside, hockey stop, jump cut, speed shuffle, drop step, jab step
- Deceleration (The most over looked or assumed skill in agility training) Angles of shins and body position are the keys to effective deceleration that leads to re-acceleration.

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**FOUNDATION**

"MOTOR SKILL DEVELOPMENT"

- Unconscious Incompetence *(athlete looks clueless and is unable to comprehend what coach wants)*
- Conscious Incompetence *(athlete understands what coach wants is but unable to reproduce)*
- Conscious Competence *(athlete is able to reproduce with much needed concentration, but not in series)*
- Unconscious Competence *(athlete reproduces near perfection without a conscious thought)*
UNCONCIOUS COMPETENCE

“Do all the right things from the wrong positions”
**Goals to being Faster**

- More Force (F=MA)
- In less time (Anticipatory firing)
- Recovery in proper ROM (Efficient set up for force producing limb)
- Force application in the proper direction (where is the drive relative to the hips)
BE THE MASTER OF ACCELERATION (INTENT)

Wall Drill Passive Support Piston Action
Resisted A run Active Support

3 step bound to sprint

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Efficiency is the Goal

- Residual
- Backside recovery
- Front side recovery
- Transition
- Ground Preparation
- Ground Contact
- Arm Action
Sprint Heel Slide

Sprint Step Over Skip

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Create the movement needs analysis!! KPI (KEY PERFORMANCE INDICATORS) DAN PFAFF

What are the most common drills used for the sport?

In most cases athletes have run this drill MANY times. Gives me a true indication of their actual body awareness and control.

Not concerned with quantifiable outcomes

Closed drill, no tricks! Do they know how to move efficiently? Repeatedly??

Watching for weight distribution, edges of feet, spacing of feet relative to the hips, loaded position of hips, primary action of re-acceleration post deceleration.
FRONTAL PLANE

- Shuffle/Slides
- Cross over runs/Blended Skills
- Deceleration/Reactive

Sagittal/Frontal

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Sagittal to Frontal

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Frontal Plane Reaction
Frontal Plane Reaction with Acceleration
TRANSITIONS

- Carioca/Tapioca
- Blended Skills
- Reactive

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Acceleration/Deceleration
Regression......it's ok
Squat Push to Jumps

Frontal
Single Leg Deceleration 1 count
/Eccentric Control of Pronation

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Single Leg Deceleration 2 count

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GAP to SAP

Learn basic gross motor movements

Incorporate a reactive and metabolic aspect that most resemble game play.

Incorporate the reactive aspect that most resemble game play.

Advance speed of the drill, increase challenge of drills w/ realistic outcome!

Enhance movements through progressive footwork.

“Only Implement What you Can Maintain Quality Control”
THANK YOU

- Greg Roskopf
- Steve Plisk
- Loren Seagrave
- Tom Purvis
- My family
- ASCA