LECTURE

DR. BRANDON **MARCELLO**

High Performance Strategist

"Eccentric Training: From Programming To Progressions"

Twitter: @bmarcello13


Eccentric Training:
from programming to progressions.
Brandon Marcello, PhD, CSCS, RSCC*E
high-performance strategist
e | marcello.brandon@gmail.com
t | @bmarcello13
w | brandonmarcellophd.com


Thank
You
Maake
Biyan
Arigato
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Danke
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Dank Je
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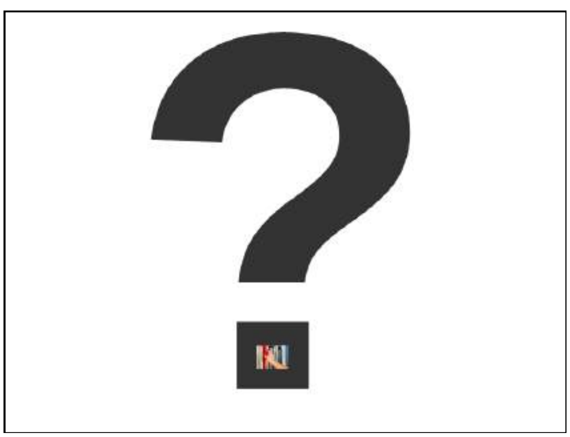
谢谢



What's your recipe?

Evidence based vs. Evidence led

What is Eccentric Training
What is an Eccentric Contraction

What's its purpose?

THE RUB: In most team sports, players are required to repeatedly perform short, explosive, efforts such as accelerations and decelerations during change of direction.

WHY:

The goal of every training program is to decrease injury potential and improve performance. Additionally, rehabilitation and reconditioning programs strive to return the athlete to play in the quickest and safest manner possible, all the while reducing the likelihood of that athlete becoming reinjured.

BASIC RECIPE:

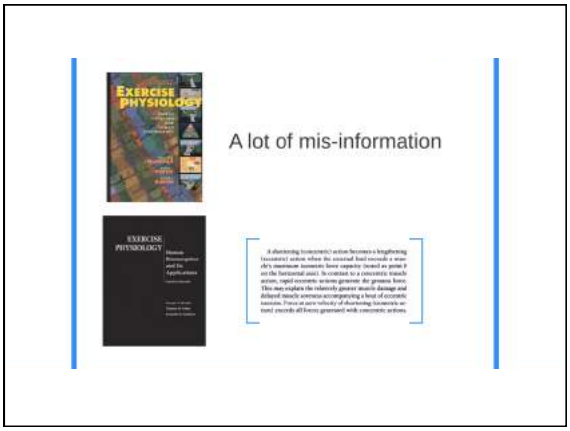
In the quest for enhanced speed and maneuvering in multiple planes, strength and power training programs typically make use of free weights.

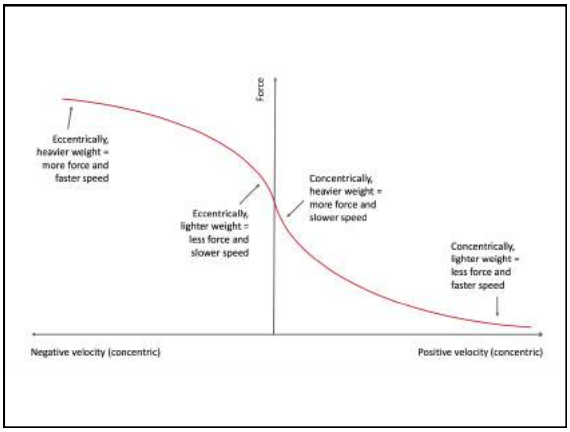
LIMITATION:

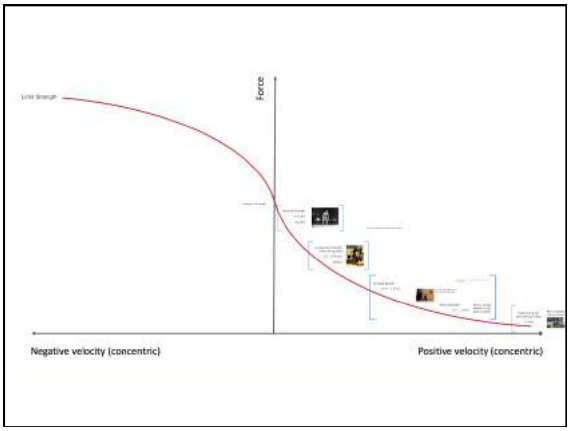
While offering constant concentric and eccentric load in exercises emphasizing vertical actions, they rarely encompass horizontal/lateral actions offering eccentric overload.

A MISSING INGREDIENT:

A large emphasis must be placed upon the breaking or deceleration of this newly acquired strength, power, speed, and explosiveness – this is where training eccentrically comes into play.


A lot of mis-information


Force
Eccentrically, heavier weight = more force and faster speed
Eccentrically, lighter weight = less force and slower speed
Concentrically, heavier weight = more force and slower speed
Concentrically, lighter weight = less force and faster speed
Negative velocity (concentric)
Positive velocity (concentric)


Force
Negative velocity (concentric)
Positive velocity (concentric)

Absolute Strength

< 0.5 m/s

Deadlift

Accelerative Strength (overcoming load)

0.5 – 0.75 m/s

Chains

Strength-Speed*

0.75 – 1.0 m/s

Olympic Strength curve
Mostly speed strength

Speed Strength*

1.0 – 1.3 m/s

Band: Low bar weight w/ high band is speed

Starting Strength
(overcoming inertia)

1.3 m/s

Band-assisted
Squat Jumps

Load & Tempo can change everything!

Limitations
This isn't absolute...it's a representation
Sort of a checklist

What does ECC bring to the table?

Implementing ECC Training


YoYo

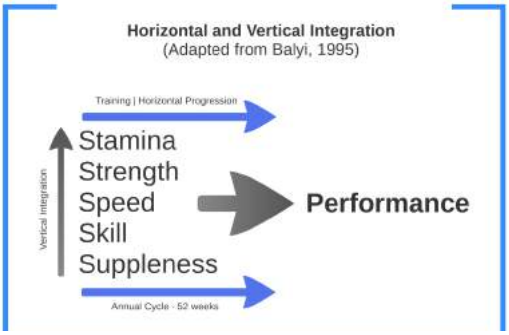

K Box


VersaPulley

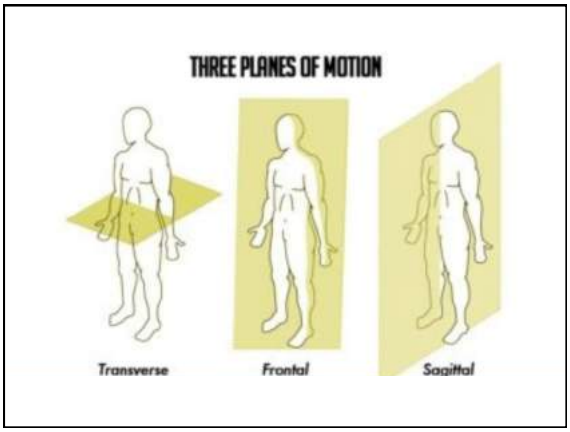

Desmotec

Stimulus & Response

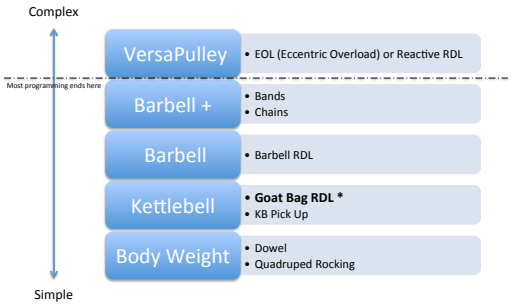
Horizontal and Vertical Integration
(Adapted from Balyi, 1995)



Plan backwards & Execute Forwards



RDL Progression | Regression



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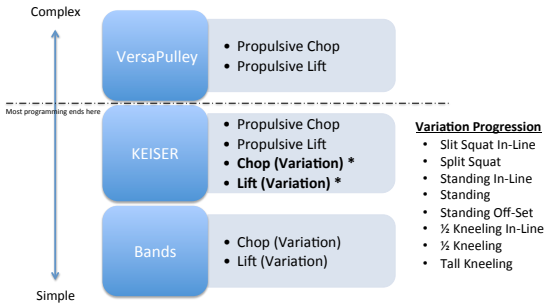
Lower Body Pull (Hip Hinge) Example

Chop & Lift Progression | Regression



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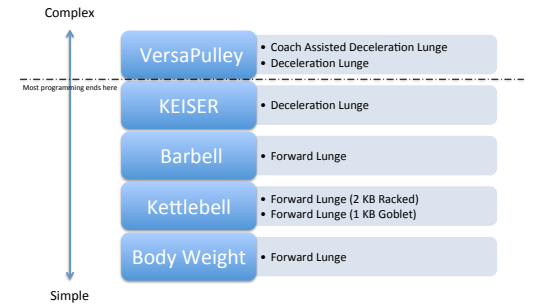
Total Body Rotational Example

Forward Lunge Progression | Regression



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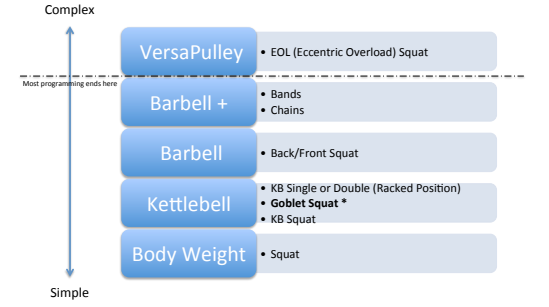
Lower Body Unilateral Example

Squat Progression | Regression



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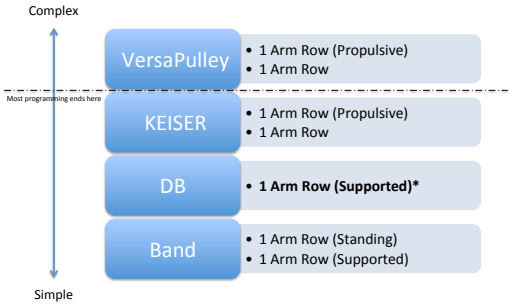
Lower Body Push Example

1 Arm Row Progression | Regression



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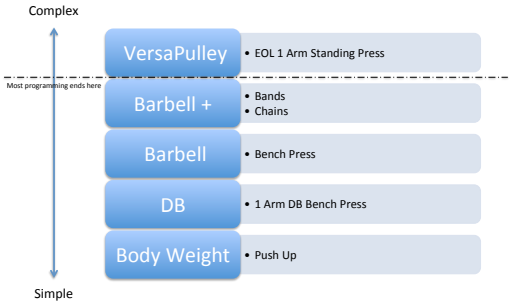
Upper Body Pull Example

Push Progression | Regression



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Upper Body Push Example

ECC training can be used...

- Off-Season
- Pre-Season
- In-Season
- Rehab & Reconditioning

Off-Season (Developmental)

- ECC used to *develop* outer limit ROM control*
- General & specialized application
- Progress (Big 6)

In Season

- ECC used to *maintain* outer limit ROM
- Non out of pattern movements
- RBE (protective)

Pre-Season

- ECC used to *augment* outer limit ROM control
- Higher velocity patterned movements
- Specific* application

Rehab & Reconditioning

- ECC used once baseline strength has been established (rehab)
- RTP (reconditioning)