2019 NSCA TACTICAL ANNUAL TRAINING

Conflict of Interest Statement

I currently have, or I have had in the past 2 years an affiliation or financial interest with [company name(s)] around this presentation, including:

- Consulting
- Employment
- Stock holder or stock options
- Royalties or licensing fees
- Honoraria
- Promotional fees
- Research funding
- Corporate laboratory funding
- Scholarship
- Other(s)

Advanced Programming Methods in the Transfer of Training for the Tactical Athlete

Cal Dietz

Process for Creating New or Modified Methods/Formulas

Triphasic Problem Solving Method

Step 1

Question methods

Step 2

Creates a new problem(s)

Step 3

Find solution

QUESTION My athletes move differently on court than in weight room? (2008)

PROBLEM I'm not training them correctly

SOLUTION Do jumping on toes!!!

Since 2008, my athletes jump and Squat (2012) on their toes

Lifts that are completed on toes	
Most Squats	Pit Sharks
Step Ups	Lunges
All Plyometric jumps are on toes!	

Which Position is More Athletic?


BARRY
SANDERS

Body Functions That Improve by Squatting on Toes

If arch collapses in foot

- Brain down regulates to protect
- Glutes down regulates force – Bosu work for power
- Hips lock down for stability
- Lower back tightens for stability
- Lateral Sling for balance, change of direction, and hip levels in sport is high

Safety Bar Split Squat – Most Effective Athlete Lift Part 1 & Part 2

- Hormonal Response
- Vascular Response
- Structural Adaption – Bone – Joints Hips

QUESTION Are the periodization models complete and optimal?

PROBLEM Gaps and inefficiencies exist in the program

SOLUTION A series of tests are created to predict and control the training process

Performance Made Simple.com

- A series of formulas that help predict your periodized model progress

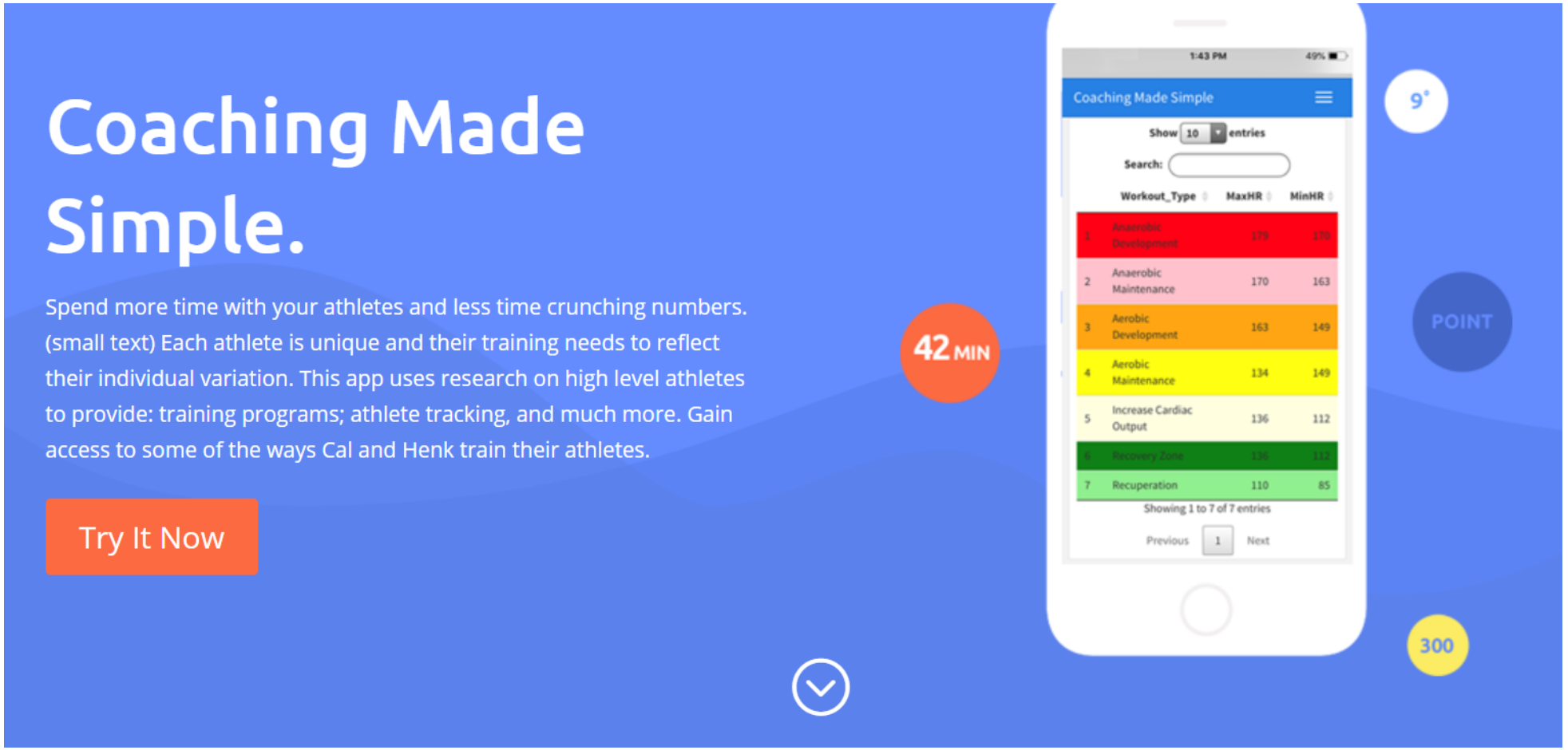
Metrics
20-yard Dash
10-yard Split
Body Weight
Height

- Enter the athletes results and get their current strengths and weaknesses

Athlete 1 – Wide Receiver	
20 Yard Dash	2.7 seconds
10-Yard Split	1.67 seconds
Bodyweight	185 lbs.
Height	5’11”

Athlete 2 – Linebacker	
20 Yard Dash	2.7 seconds
10-Yard Split	1.57 seconds
Bodyweight	210 lbs.
Height	6’1”

Performance Made Simple.com



5 Options/ Zones of Focus

1. Strength
2. Strength / Power
3. Power
4. Power / Speed
5. Speed

Training Progression Example

- Athlete 1 – Wide Receiver - Progression
  Strength → Power → Speed → Power

- Athlete 2 – Linebacker – Progression
  Speed → Power → Strength → Speed

Training Progression Example

- Athlete 3 – Lineman Year 1- Progression
  Strength → Strength → Strength → Power

- Athlete 4 – Wide Receive Year 4 – Progression
  Speed → Power → Speed → Speed

Zone 10: *Strength*

Day 1 *(Days 1 & 2)* Loading Model:

- Load: 85% to 93%
- Bar Speed Velocity of .45 to .375 m/s

Day 2 *(Day 3 & 4)* Loading Model:

- Load: 93% to 100%
- Bar Speed Velocity of .3 to .375 m/s

Day 3 *(Day 5 or 5 & 6)* Loading Model:

- Load: 80 - 82.5%
- Bar Speed Velocity of .5 to .6 m/s

Zone 13: *Supra Maximal*

Day 1 *(Days 1 & 2)* Loading Model:

- Load: 110% to 120%

Day 2 *(Day 3 & 4)* Loading Model:

- Load: 85% to 93%
- Bar Speed Velocity of .45 to .375 m/s

Day 3 *(Day 5 or 5 & 6)* Loading Model:

- Load: 105% - 110%

Special Considerations:

- Upper Body – Strength Loading Zone 10
- Not for in Season Loading

Zone 7: *Power*

Day 1 *(Days 1 & 2)* Loading Model:

- Load: 65% - 70%
- Bar Speed Velocity of .675 to.75 m/s

Day 2 *(Day 3 & 4)* Loading Model:

- Load: 72.5% - 77.5%
- Bar Speed Velocity of .525 to .625 m/s

Day 3 *(Day 5 or 5 & 6)* Loading Model:

- Load: 55% - 65%
- Bar Speed Velocity of .75 to.83 m/s

Zone 4: *Peaking Speed*

Day 1 *(Days 1 & 2)* Loading Model:

- Load: 32.5% - 37.5%
- Bar Speed Velocity of 1.15 to 1.2 m/s

Day 2 *(Day 3 & 4)* Loading Model:

- Load: 45% to 50%
- Bar Speed Velocity of .925 to 1.0 m/s

Day 3 *(Day 5 or 5 & 6)* Loading Model:

- Load: 25% - 30%
- Bar Speed Velocity of 1.2 to 1.3 m/s

Results from Training Organizational Control

1. Faster progression to get results
2. Truly individual
3. Highly efficient use of training time
4. Better decisions on athlete
5. 20 -30% fall into Traditional Periodization

Performance made simple.com

Force Plates – Limited Movement Assessment

Return To Play – Out of Strength

First Responder or Tactical – Test with Gear

QUESTION

Why are people adapting differently?
- biomechanics and tissue response

PROBLEM

Foot functions aren’t optimal

SOLUTION

Find best exercises to fix foot issues as fast as possible

Spring Ankle Exercises
From
Triphasic Training Speed Manual

Three Functions of the Foot

1. A Lever - Propels the body forward
   - Big toe and Posterior Chain

2. A link in a major chain in body - the Lateral Sling
   - Proper stabilization of the hips

3. The catalyst for transference of training
   - A highly functioning arch in the foot is imperative for withstanding force during high velocity movements

Summary of Spring Ankle Positions

10 Total Exercises
5 Isometric Position - With Toe/Foot
3 Position for Thigh- With 2 Foot
2 Foot Position
2 Toe Position

3 Thigh Positions

Deep/2 Ankle

Mid/2 Ankle

High/1 Ankle

Foot Positions for the 3 Range Thigh Positions

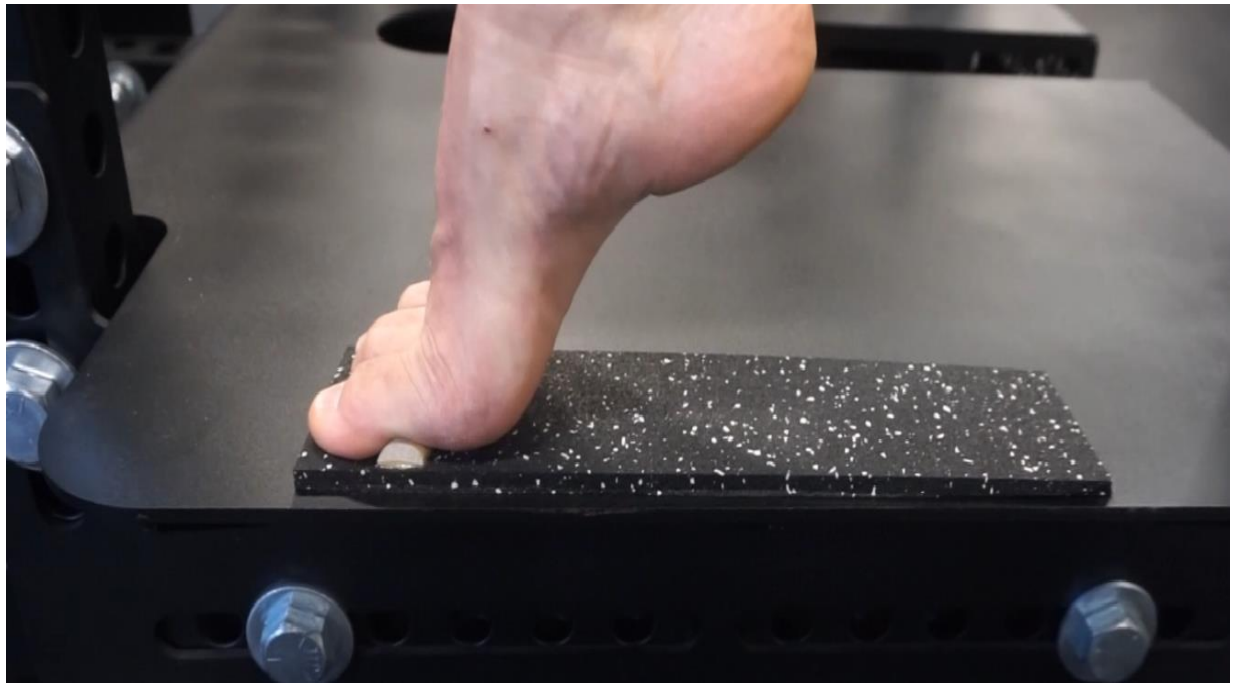
Ankle Position for Spring Ankle 1 & 3

Ankle Position for Spring Ankle 2, 4 & 5

Toe Positions

Toe Position 1 - Straight Toe

Toe Position 2 - Training Aid, ½ Wood Dowel



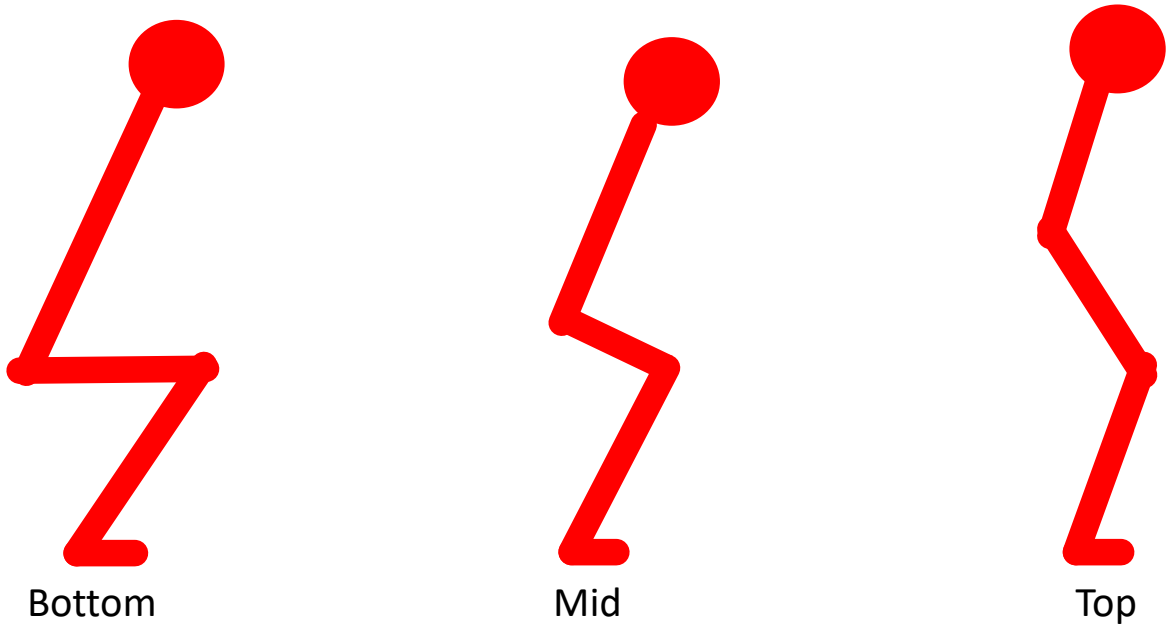
QUESTION Can I make plyometrics individualized?

PROBLEM We currently use general plyometrics to train people

SOLUTION Make test and plyometrics that are specific to the needs of the athlete

Triphasic Ranged Plyometrics

- 3 Ranged Method: <u>Thrust Method – Accelerated</u>



- ASFM-Pause – Banded – Metabolic - Potentiation

5 Options/ Zones of Focused Plyometrics

1. Strength
2. Strength / Power
3. Power
4. Power / Speed
5. Speed

QUESTION

Are any movements in the weight room that sport specific?

PROBLEM

We aren't transferring the results in the weight room to field or sport specific movements

SOLUTION

High speed exercises that simulate speed of which we compete.

Hyper Speed Method Peaking Manual

Athletes of Highest Level Can Relax Faster

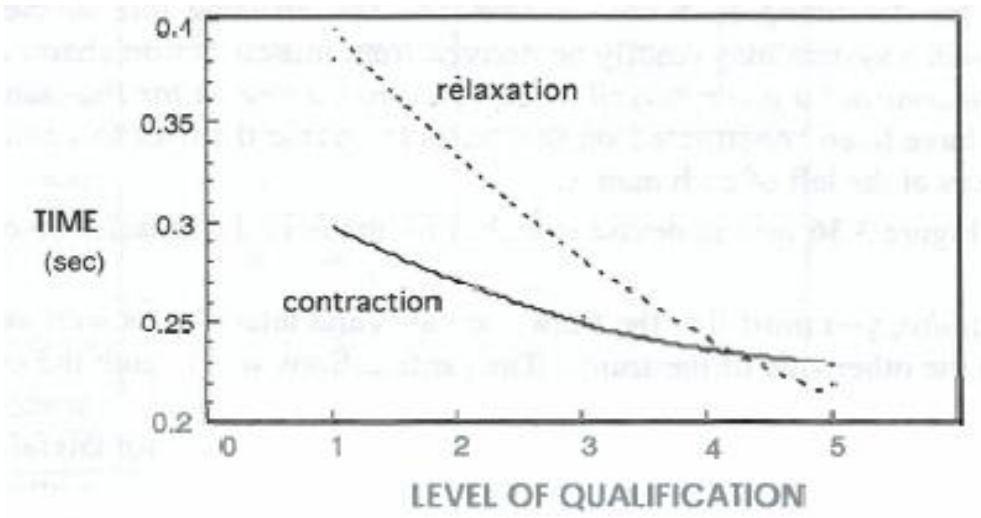
Based on Sherrington's Law

- Matveyev → 200% faster!

How do we train this?

- High velocity strength & shock & plyo methods
  - Enhance Transfer

Mel Siff Camp



Graph showing the relationship between agonist contraction and antagonist relaxation

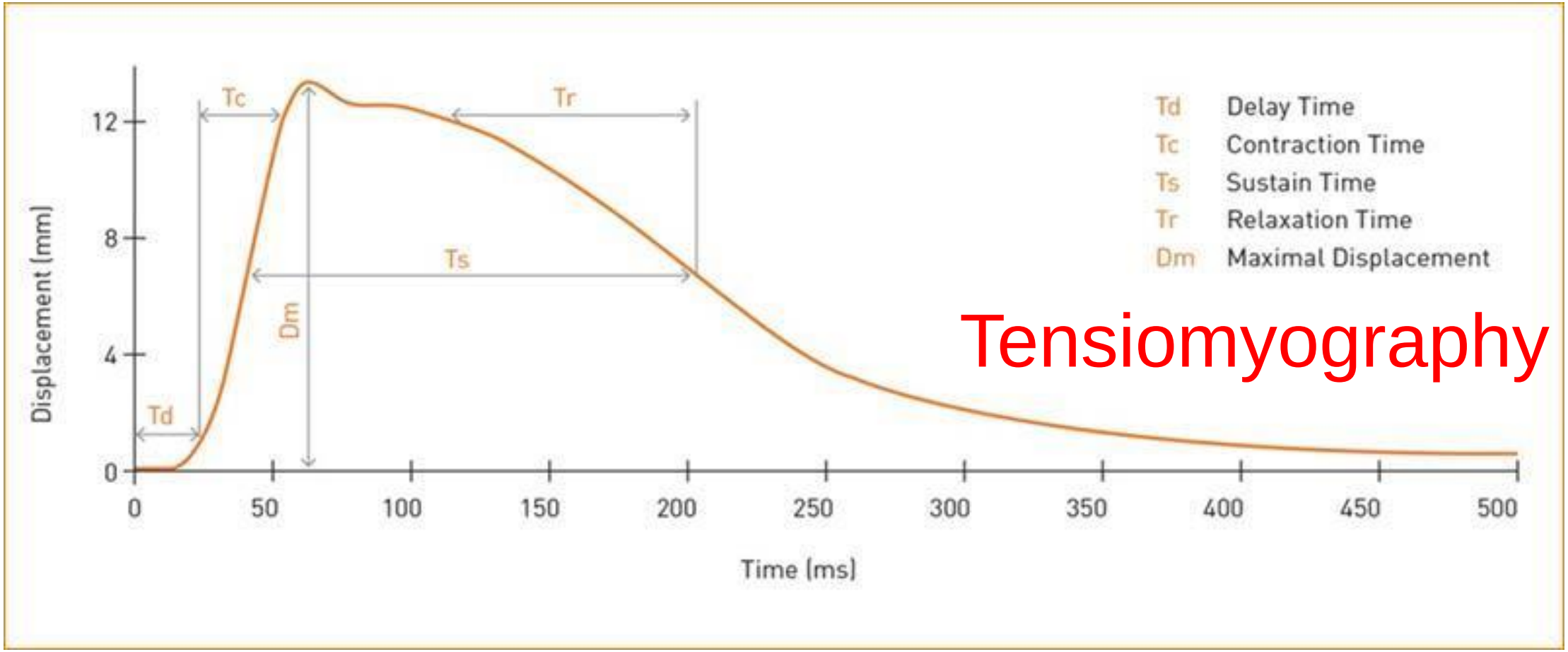
Triphasic Training Peaking Method Manual

The 3 most specific methods to train muscle for high performance:

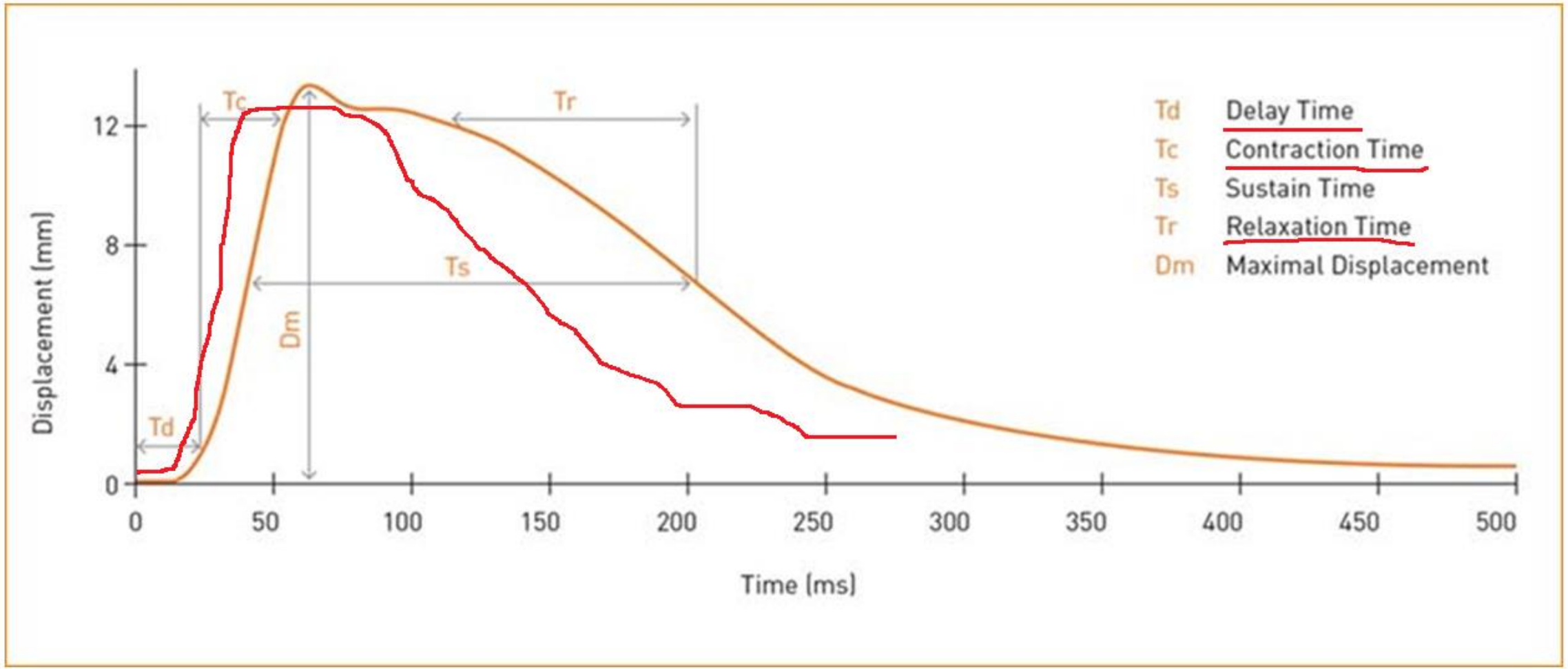
Method 1 - Co Contraction - Neural Adaptation for Sport

- Limb is in between bands for max speed and velocity
- High neural adaption for speed of muscle contraction and relaxation

Tensiomyography Qualities of Muscle



Qualities That Improve In Muscle – TMG



Triphasic Training Peaking Method Manual

The 3 most specific methods to train muscle for high performance:

Method 2 - Rebound Shock Method - Tissue Adaptation for Sport

- Limb is on Top of Bands with light weight
- Great Tissue Response 2 Spring System

YouTube -Triphasic Training Spring Model Tissue Concepts

Triphasic Training Peaking Method Manual

The 3 most specific methods to train muscle for high performance:

Method 3 - Oscillatory Isometrics (OCI) – Metabolic Adaptation for Sport

- Limb is under constant tension
- High Velocity Contraction under Fatigue
- BFR Training –BSTRONG - bstrong.training

Peaking Method -Weekly Model

- Monday – Co-contraction – Method 1

  Nervous system

- Wednesday – Rebound – Method 2

  Tissue Remodeling

- Friday – IOC Oscillatory Isometrics – Method 3

  Metabolic Effect

Peaking Method -Weekly Model

- 1 & 2 Week Block – IOC Oscillatory Isometrics – Method 3

  Metabolic Effect

- 3 & 4 Week Block – Rebound – Method 2

  Tissue Remodeling

- 5 & 6 Block Model – Co-contraction – Method 1

  Nervous system

Thank you

Advanced Spring Ankle Exercises

It is very important that the athlete is able to maintain all 5 spring ankle positions with level 1 loading for 60 seconds before moving onto level 2 loading.

- Level 1 = Bodyweight only
- Level 2 = External Resistance - DB (Demo next slide)
- Level 3 = External Resistance - Pitshark , Partner Pushdown

More Spring Ankle Resources:

Spring Ankle Concepts for Elite Performance Part 1 Injury and Forces

Spring Ankle Concepts for Elite Performance Part 2 Injury and Forces

Spring Ankle Concepts for Elite Performance Part 1 Warm up and Rehab Flaws

Spring Ankle Concepts for Elite Performance Part 2 Warm up and Rehab Flaws

Importance of Cocontractions

- A simultaneous activation of antagonist muscles around a joint
- The ability to create explosive movements and reduce injury
- Plyo-siodal training - raising the ground - foot contact with ground occurs sooner than the body is used to - forces body to adapt

More Info about Cocontractions