



JIM KIELBASO

Total Sports Performance

“Teaching & Developing Explosive
Acceleration”

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HOW TO DEVELOP DYNAMIC SPEED & ACCELERATION

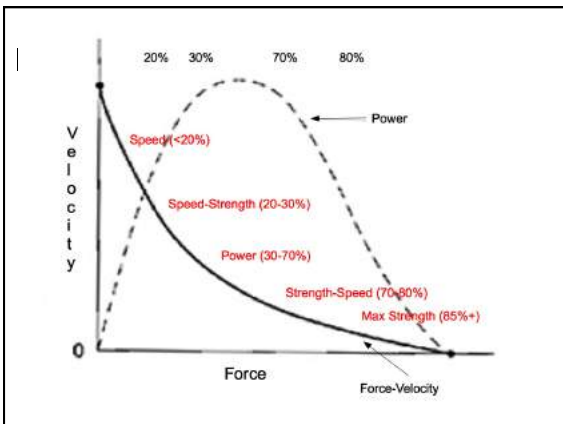


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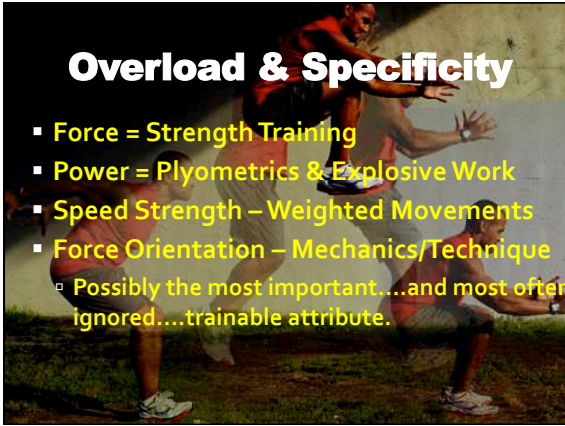
Big Force
+
Minimal Time
+
Right Direction
Run Faster

- * Body Comp
- * Sport-Specific Conditioning
- * Sport-Specific Movements
- * Stiffness
- * Flexibility/Mobility




Overload & Specificity

- Force = Strength Training
- Power = Plyometrics & Explosive Work
- Speed Strength – Weighted Movements
- Force Orientation – Mechanics/Technique
 - Possibly the most important....and most often ignored....trainable attribute.



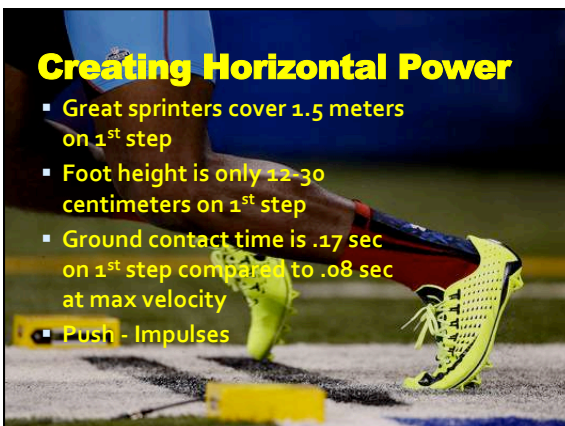
Speed Science

- JB Morin, et al (2011) – Definitely showed that force application technique and the orientation of the force were more important than the total amount of force applied. Horizontal force application was found to be correlated to sprinting speed, but vertical force and total force were NOT.
- Weyand, et al (2014) – Elite sprinters run differently and have a different force orientation than other runners. Ground contact time, leg speed and GRF are only about 30% greater for elite sprinters compared to normal people, but their speed is 80% greater.



Creating Horizontal Power

- Great sprinters cover 1.5 meters on 1st step
- Foot height is only 12-30 centimeters on 1st step
- Ground contact time is .17 sec on 1st step compared to .08 sec at max velocity
- Push - Impulses











Improve Neural Efficiency

- Train acceleration early in the workout
- Focus on quality
- Short distances
- Long rest periods
- Lots of feedback
- Start young
- Include football movements



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