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A Comprehensive Approach to Developing Lower Body Power in the Weightroom

- I. How many of you currently prioritize power within your weight room session and how do you do this?
- II. Presentation Objectives
 - A. Qualities of Athletic Preparation/S&C
 - B. Strength Qualities
 - C. Physics of Strength, Power, Rate of Force Development, Explosive Strength
 - D. Explosive Strength/Power/RFD Based on Literature and Research
 - E. Exercise Selection/Exercise Categories
 - F. Progressions to Teaching
 - G. Hands on Practice and Coaching
 - H. Programming and Assessing
- III. Qualities Athletic Preparation
 - A. Al Vermeil's Hierarchy of Athletic Development
 - B. SAID Principle
 - C. Strength Qualities in the Weight Room (Absolute Strength, Maximal Strength, Explosive Strength/Power/RFD, Hypertrophy, Muscular Endurance)
- IV. Physics
 - A. What is strength?
 1. $F=ma$
 2. Expression of force
 - B. What is power?
 1. $P=W/t \rightarrow P=Fv$
 2. Power=Strength (Force Expression) x Velocity (Speed)
 - C. Rate of Force Development
- V. Literature and Research
 - A. Rate of Force Development (Developing Powerful Athletes Part 2: Practical Applications)
 - B. Explosive Strength (Science and Practice of Strength Training)
 - C. Explosive Training (Husker Power S&C Principles)
 - D. Time available for force development, less than .3 seconds (Science and Practice of Strength Training)
 - E. RFD vs Force and Ballistic actions (Strength and Power in Sport)
 - F. Power is largely dependent on ability to exert high forces (Developing Powerful Athletes Part 2: Practical Applications)
 - G. Muscle power is a product of muscle force and action velocity (Strength and Power in Sport)
 - H. Ballistic Movements (Developing Powerful Athletes Part 2: Practical Applications)
- VI. Practical Application & Implementation
 - A. Force-Velocity Curve
 - B. Sets/Reps/Rest
 - C. Qualities of Athletic Preparation Trained
 1. Strength

2. Power/RFD/Explosive Strength
 3. Hypertrophy
 4. Muscular Endurance
 5. Speed & Agility
 6. Plyometrics/Jumping
 7. Work Capacity
 8. Sport Demand Injury Resiliency
- D. Power/RFD/Explosive Strength
1. Lift
 2. Jump
 3. Throw
- E. Power/RFD/Explosive Strength (Lift)
1. Clean
 2. Snatch
 3. Jerk
 4. Jump
 5. Complexes
 6. Traditional Strength Training Exercises utilized for Power/RFD/Explosive Strength
- VII. Teaching and Instruction
- A. Hand Placement
 - B. Foot Placement (Jump vs. Land)
 - C. Starting Position
 - D. Power Position
 - E. RDL
 - F. Scoop/Double Knee Bend
 - G. Triple Extension
 - H. Transition
 - I. Catch
- VIII. Exercise Progressions
- IX. Programming
- X. Assessing Explosive Strength
- XI. Call to Action