Strength and Power Development for Elite High Jump Programming

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The Interactive World of Biomotor Abilities

- Non-isolation Policies: No entity is unaffected by change in one category of work.
  - Speed
  - Strength
  - Skill
  - Stamina or work capacity
  - Suppleness
- Over Development Problems
- Block Scheme Periodization Issues

Strength Development Factors

- Skill Factors
  - General skill efficiencies are a window to event specific idiosyncrasies
  - Specific skill efficiencies are a window to specific physiological qualities
- Injury Factors
  - Prevention or Prehab
  - Rehabilitation
    - Proximal-distal reactions
    - Chains of recruitment
    - Guarding and subs-recruitment patterns
    - Proprioceptors and motor re-education
    - Joint integrity

Strength Development Factors - Continued

- Absolute
- Inertial/isometric moment
- Striking
- Amortization
- Elastic
- Stabilization
- Power
- Muscle balance
  - Contralateral
  - Ipsilateral

Absolute Strength Development

Thoughts and Concepts

Squatting
Depth
Phase of training
Type of athlete
Sport specifics
Periodization
Stages
Phase
Squat
High Bar
High Box
High

Set and Rep Parameters
- Reps of all type: Development, rehab, prehab, maintenance, etc.
- Method training:
- Fixed volume or floating auxiliary

Deadlifts
Classic
SLRDL's
Hex bar
Eccentric emphasis

Pressing Movements
- Bench
- Squat
- Snatch

Special Strength Exercises
- Static contralesional, static, dynamic
- Lunges jump and lunge Russian twists
- Jump Squats
- Lateral Squats
- Lateral Squat Jumps
- Bio-condition jumps
- Twisting Exercises
- Depth Jumps
SDF-2
A Return to Theory

- Balance
  - Static
  - Dynamic
  - General
  - Specific
- Rotational specific issues
  - T-10/T12
  - Hip and shoulder axis undulation and oscillation
- Neuromuscular Factors
  - Rate coding
  - Frequency of firing
  - Synchronization
  - Pre-firing/ firing phasics, the role of the collagen matrix
  - switching

SDF-3

- Central nervous system
  - Biophysics
  - Alternative communicative pathways
- Biochemistry
  - Hormonal panels
  - Pituitary, Thyroid and Hypothalamus axis
- Work capacity
  - Volitional qualities
- Cardio-pulmonary influences

Methodologies

- Overload Theory
  - Compensation factors
    - Stimulus
    - Adaptation
    - Stabilization
    - Actualization
- Environmental methods
  - Wind
  - Temperatures
  - Sociological
  - Physiological states
  - Psychological
- Specific methods
  - Sport specific activities
  - Weight apparatus
  - Projectile apparatus
  - Specific apparatus

Ancillary Schemes

- Plyometrics
  - Horizontal
  - Vertical
  - Loaded
  - Reduced wavelength and amplitude jumps
- Running
  - Normal
  - Stressed
  - Recovered
  - Exaggerated
- Sprint isolation exercises
- Adaptive muscle exercises
- General strength exercises
- Medicine ball series
- Range of motion and symmetry
- Plyometrics

Training Theory Factors

- Volume
  - Systematic progressions
  - Competition readiness drops
- Intensity
  - Correct values for given tasks and durations
  - Greatest indicator of injury or chemical depletion factors
- Density
  - Overlooked factor for the aging athlete
  - Must be factored in all tapering
- Compatible/complimentary issues
  - Daily
  - Weekly
  - Phases
  - Yearly