

## Strength Training Outside the Weight Room for Elite Throwers

Dan A. Pfaff  
Chula Vista, California

## 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
    - Fulcrum
    - Proximal-distal reactions
    - Chains of recruitment
    - Guarding and sub-recruitment patterns
    - Proprioceptors and motor re-education
    - Joint integrity

## SDF-2

- 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
  - Chemistry
  - 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
  - Psychological
  - Physiological state
- Specific methods
  - Sport specific activities
    - Varied weight implements
    - Throwing tools
  - Weight apparatus
    - Throw lift combinations
    - High box stepups

## Ancillary Schemes

- Plyometrics
  - Horizontal
  - Vertical
  - Loaded
  - Reduced amplitude and wavelength exercises
- Running
  - Normal
    - Stressed
    - Recovered
  - Exaggerated
    - Sprint isolation exercises
    - Adaptive muscle exercises
- General strength exercises
  - Body weight circuits
  - Apparatus circuits
- Medicine ball series
  - Range of motion and symmetry
  - Short arc
- Multiple throw series
  - Classic
  - Plyometric Switching

## 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