



Developing Work Capacity to Enhance Speed Development

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What Is Work Capacity?

- » Work Capacity is Often Used Synonymously with...
 - General Endurance Capacity / Aerobic Fitness
- » Work Capacity is not Just the Ability to Withstand Large Training Loads.



What Is Work Capacity?

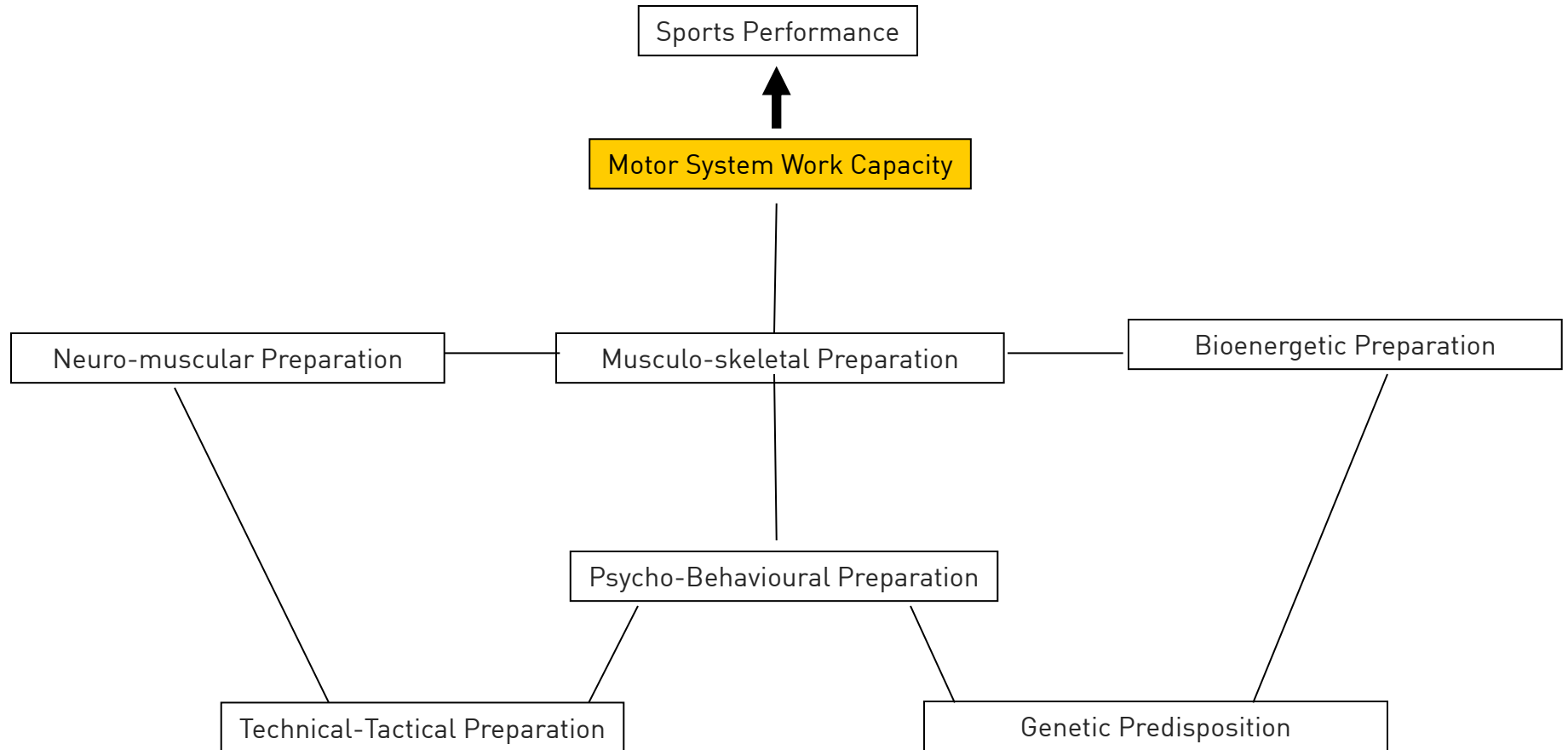
- » Work Capacity is the Ability Maintain the Quality and Intensity of an Activity
 - under Ever Increasing Volumetric Loads
 - and Be Able to Return to Homeostasis in Both Short Term and Long Term

- » Increases in Work Capacity is Realized by Increasing the Capacity in All the Bio-motor Abilities.



Preparing for Sports Performance

Adapted from Verkhoshansky (2006)



Work Capacity: An Important Focus of Long Term Athletic Development

- » A Holistic Perspective of Developing Work Capacity
 - Gives the Athlete a Comprehensive Base Upon Which to Train and Recover
- » Linking General Development of Bio-Motor Abilities with Movement Skill Development Enhances the Athleticism of the Individual



Work Capacity: An Important Focus of Long Term Athletic Development

- » If Properly Addressed in Training...
 - Work Capacity is Additive Over the Career of the Athlete

- » Reducing Restrictions, Imbalances and Instability through a Blend of Therapeutic Exercises...
 - Has a Positive Effect on Reducing Injury Likelihood
 - Don't Build Work Capacity on Dysfunction Gray Cook paraphrased



The Bio-Motor Abilities: Building Blocks of Training Goals

- » The Qualities that an Individual Must Possess to Be Successful at Any Physical Endeavor
- » Bio-motor Demands Vary with Nature of the Activity and Event
 - Which Determines the Direction of Training as The Athlete Increases Specialization
- » Early Over-Emphasis on a Bio-motor Quality May Put the Body Out of Balance with Respect to Long Term Development



Major Biomotor Abilities

Biomotor Abilities

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graph TD; A[Biomotor Abilities] --> B[Strength & Power]; A --> C[Neuromuscular Coordination]; A --> D[Speed]; A --> E[Flexibility]; A --> F[Energy System Development];
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Strength &
Power

Neuromuscular
Coordination

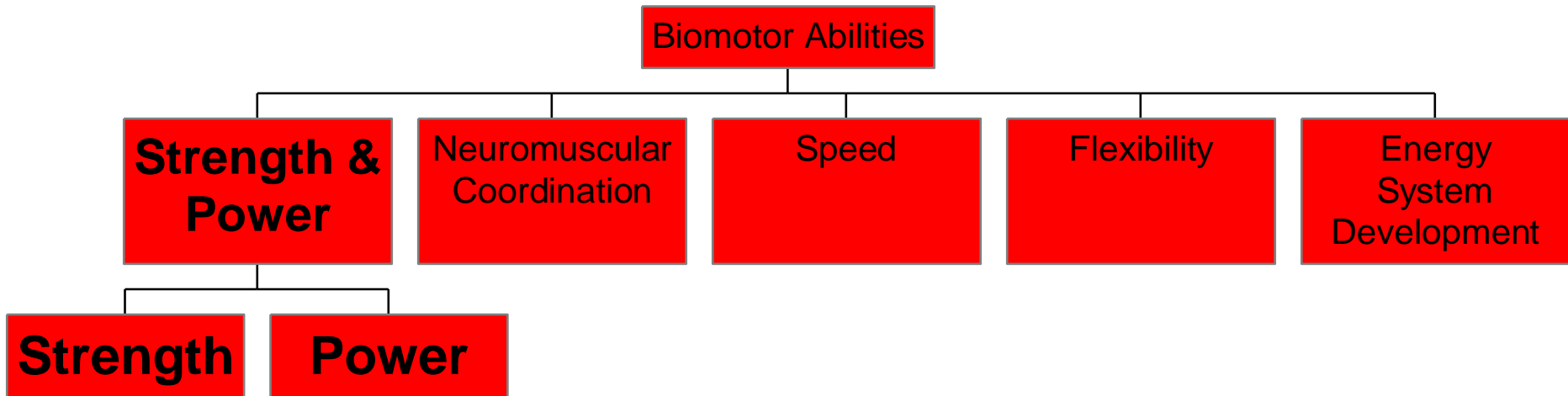
Speed

Flexibility

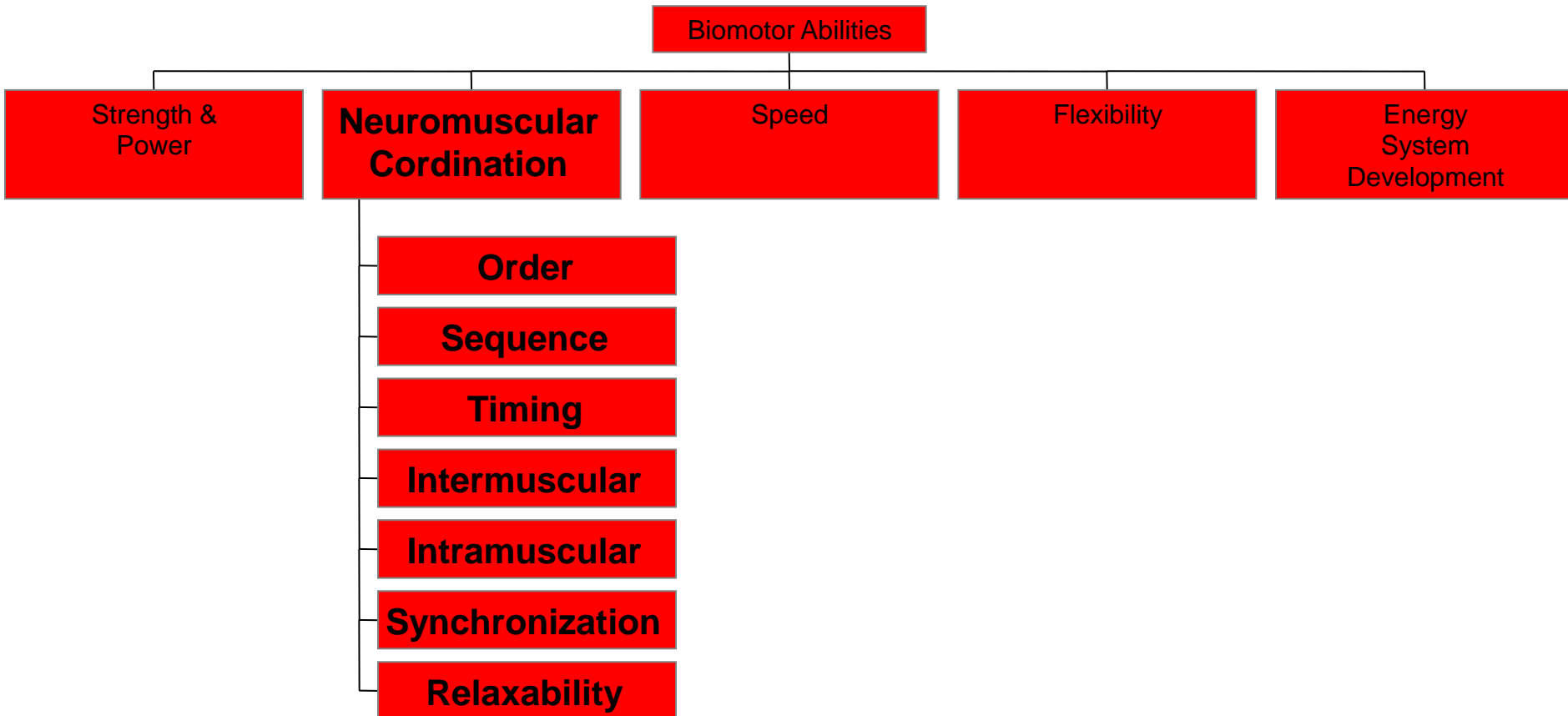
Energy
System
Development



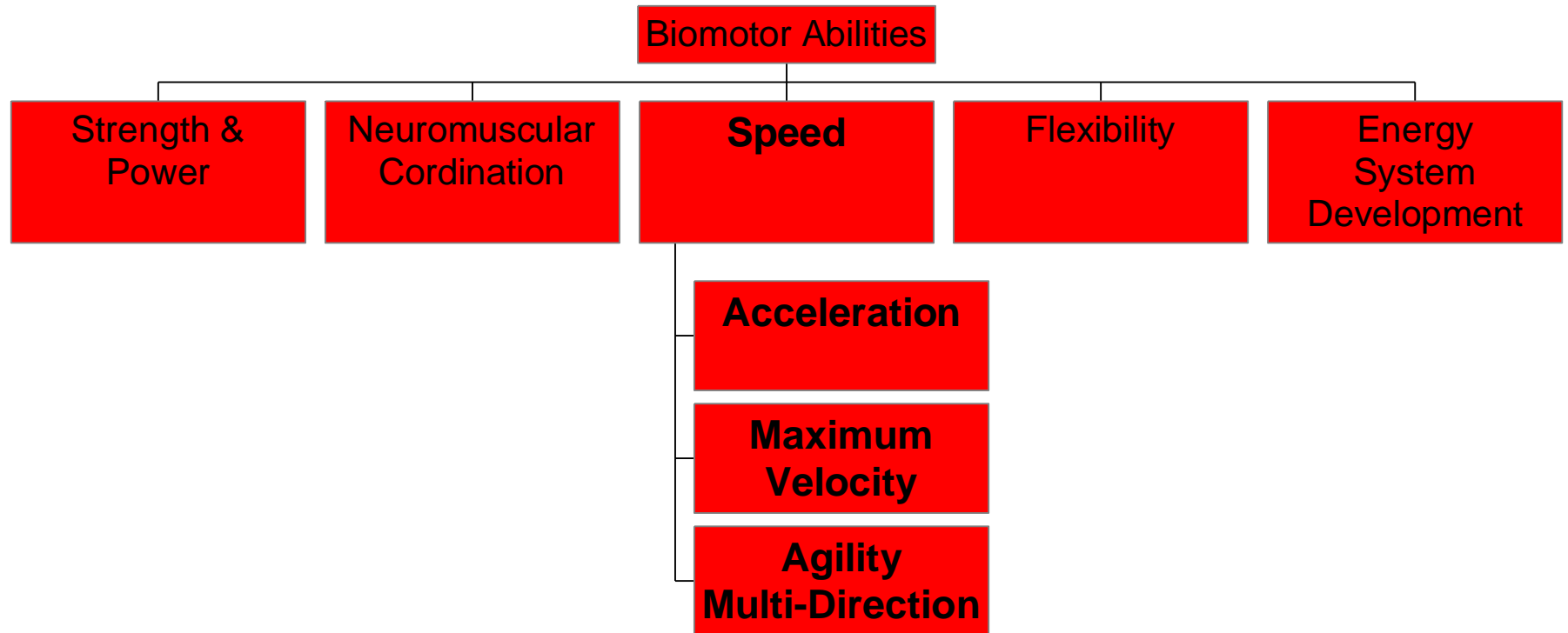
Biomotor Abilities – Strength & Power



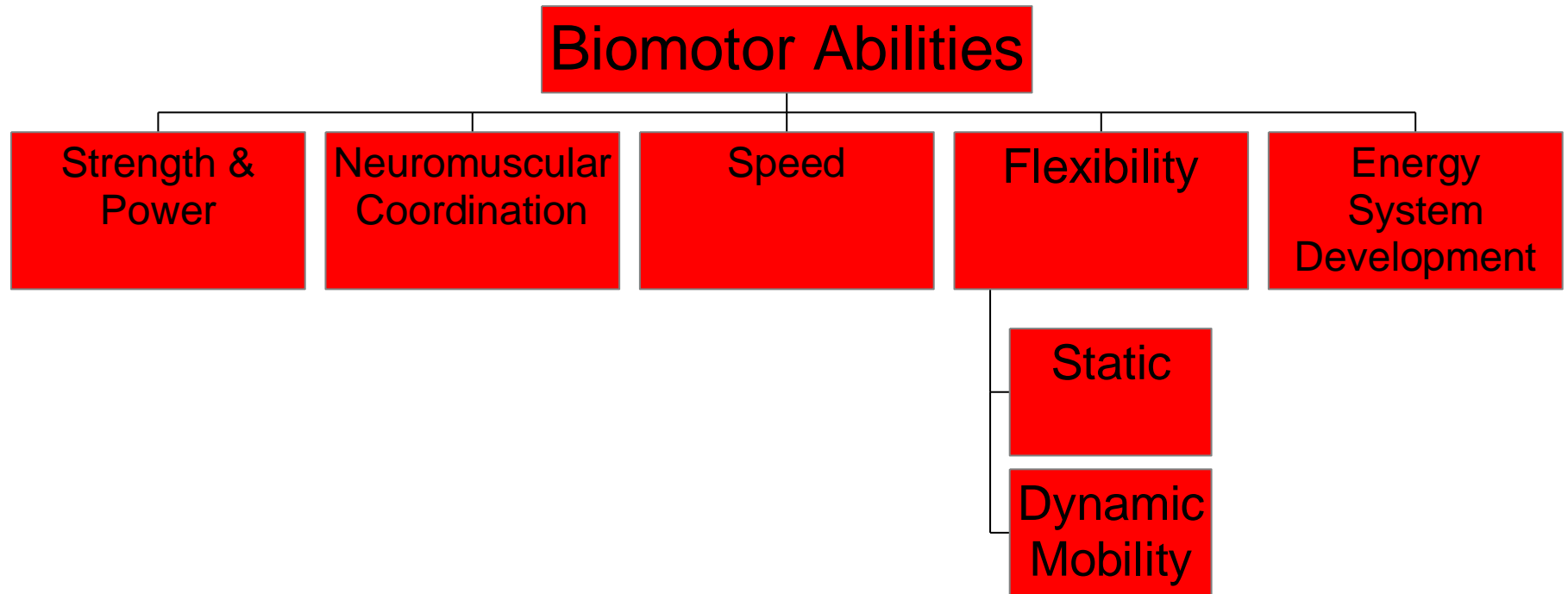
Biomotor Abilities - Coordination



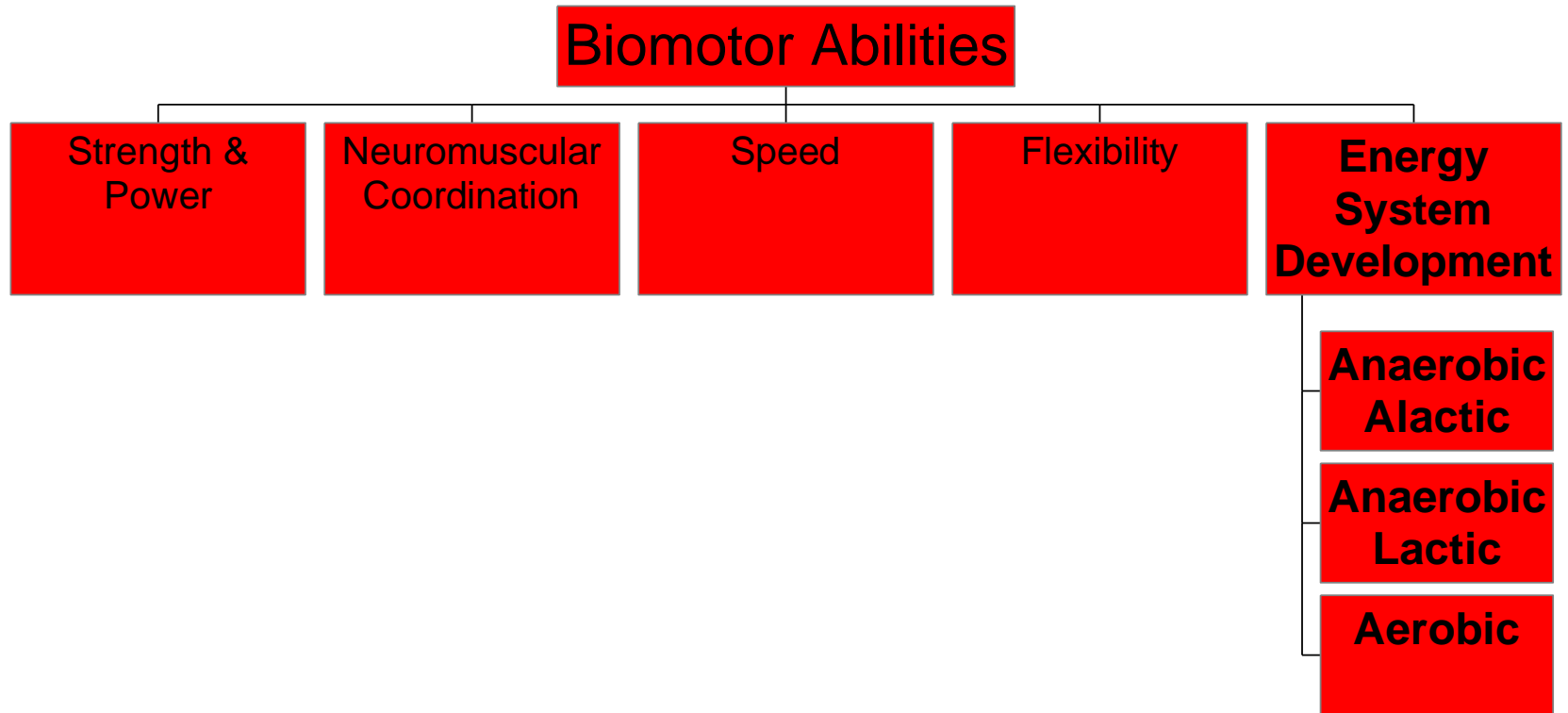
Biomotor Abilities - Speed



Biomotor Abilities - Flexibility



Biomotor Abilities – Energy Systems



- » Takes a Balanced Approach to the Training of the Bio-motor Abilities
 - All the Biomotor Abilities are Important to Attain High Levels of Sport Performance
 - Each Bio-motor Ability is Requisite to the Other and Interdependent
 - While Specialization is Necessary at Appropriate Times
 - Balanced Development of General Qualities Will Lead to Better Long Term Development



General versus Specific Training

» General to Specific Training Continuum

- General Training Seeks to Improve the Bio-Motor Abilities in a Manner Independent of the Sports Task and Works Toward Increased Athleticism



General versus Specific Training

» General to Specific Training Continuum

- Specific Training Emphasizes Development of the Bio-motor Abilities that Predominate Success in an Event
 - ...A Shift of Emphasis on the Proportion of the Training Load to One or More Biomotor Abilities Increases Specialization
 - ...Increasing Special Training Requires a Decrease in Other Bio-motor Qualities to Maintain Training Load
 - ...Specialized Training Increases through the Macrocycle and is More Appropriate as the Athlete and Their Career Matures



The Relationship between General and Specific Training

» Often There is an Inverse Relationship between General & Special Training as a Macrocycle Progresses

- Elite Athletes' Training Progresses to Become either Special or More Special
 - ...Principle of Reversibility Applies such that Over-Emphasis on Special Training Results in Diminished Capacities in Some Bio-motor areas



- » Active-Dynamic Warm Up
- » Circuit-type Training Involving Multi-Lateral Loading
- » Jump-Run
- » Strategies Integrating Strength and Power Training (Weight Room) with Speed and Extensive Repetition Training
- » Integration of New Interval Training Principles into Other Aspects of Bioenergetic Training



Active-Dynamic Warm-up

Monday, November 22, 2010

- » 1 X 30 sec Pillar Bridge Series (Prone, Right, Left, Supine), 5 X Pillar Opposites, 5 X Shoulder Rotations, 1 X Circle Hand-Walk (Clockwise and Counterclockwise), 20m Hand Walk
- » 5 X Truck Circle, Hip Circle (each direction)
- » 30m Low Skip (Arm Circles Forward), 30m Long Backward Skip (Arm Circles Backward), 10 X Prisoner Squat (Thigh Parallel) 10 X Front to Back Lunge, 10 X Leg Raise Series (Supine, Inside, Outside, Prone Opposites, Tin Soldier)
- » 30m Low Skip (Arm Windmill Forward), 30m Long Backward Skip (Arm Windmill Backward), 10 X Wind Outs, 10 X Alternate Thrusts
- » 30m Side Slide Turn-In, Side Slide Turn-Out, 10 X Hip Pops, 5 X Russian Hamstrings, Single Leg Prone Hip Lifts
- » 30m Gallop Alternate, 30m Gallop Alternate, 10 X Jumping Jacks (Long Arms), Split Jacks, Highland Fling, Long Striders



Active-Dynamic Warm-up

Monday, November 22, 2010

- » 2 X 30m Power Gallop, Low Skip and Scoop Back
- » 2 X 30m Power Gallop, Back Skip and Scoop Back
- » 10 X Quadruped Series (Kneeling Knee Circle Forward and Backward, Kneeling Scorpion, Kneeling Lateral Ham Reach)
- » 10 X Supine Leg Swings, Supine Leg Swings Alternate, Prone Scorpion 5 X Mountain Climbers, Groiners
- » 5 X Leg Swing Series (Frontal and Sagittal Leg Swings, Trail Leg Windmill Forward & Backward)
- » 10 X Horizontal Scissors (Cut-the-Grass), Long Scissors, Rockers, Hurdle Seat Change



Movement Skill & Vmax Development

Monday, November 22, 2010

- » 3 X 10m Ankling with single Leg Thigh Pop (Rt and Lt)
- » 3 X 10m Ankling with Alternate Thigh Pop
- » 3 X 30m Long Backward Strides
- » 3 X 10m Butt Kicks with Alternate Thigh Pop
- » 3 X Butt Kick into Step-Over Run
- » 3 X 30m Alt Fast Leg
- » 3 X 30m Shake ups
- » 3 X 30m Long Backward Strides
- » 3 X 30m Straight Leg Bound
- » 3 X 30m Straight Leg Bound - Fast Leg (Rt & Lt)



Movement Skill & Vmax Development

Monday, November 22, 2010

- » Vmax Session
 - Joice and Alie: 4-6 X Ins and Outs (20m In – 15m Out – 20m In) In Spikes
- » Speed Tech Session
 - Angelo: 6 X (90m Fast-Float-Fast) in Flats
- » Two Laps Jog Cool Down with 5 X 50m Build-Ups
- » Weight Training
- » Full Static Stretch: (Supine Knee Hugs, Supine Hamstrings, Side Lying Stork Stretch, Butterfly, Inverted Butterfly, Chair Stretch, Pretzel Stretch (No Twist), Sit on Your Heels, Prone Butterfly, Cradle the Baby, Plough Stretch)



Jump-Run: Friday, November 26, 2010

- » Weight Lifting Session
- » Active-Dynamics Warm Up with Circuit Warm-up
- » Jump Run X 6
 - 30 sec/ 30 sec Jump (Rocket, Split Squat, Drop Squats, Djerabakis, Drop Lunge Alternate, Tuck Jumps)
 - [30 sec]
 - 6 X 15 sec-[15 sec] (Butt Kickers, Speed Skate Cross-Overs, SLB, Speed Skater Shift Foot, Step-Over Run, Exploding Harvards)
 - 2 min Recovery Run then [1 min Rest]
- » 5 X 50-meter Build-Ups with Skip Back
- » Static Stretch after session



**“BUILD UP YOUR WEAKNESSES UNTIL
THEY BECOME YOUR STRONG POINTS.”**

— KNUTE ROCKNE THE PROVERBIAL SPORTS QUOTE.



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