



Developing Athleticism the Foundation of Long Term Sport Success

By Peter Twist

Petro Canada Sport Leadership sportif Conference 2009

Objectives

- What is Athleticism?
- Understand the value of Athleticism for long term sport success
- Identify the best training opportunities based on known growth and development milestones (Child – Youth – Young Adult)
- Implement an athletic training style based in science and validated by tangible results to build a better athlete with physical gains that translate directly to sport demands
- Identify training that integrates Movement + Strength + Balance strategically implemented to develop Smart Muscle®
- Build Champion Athletes and Winners in Life

What is Athleticism?

- Development of the physical skills that support Sport Skill execution
- Improve body control, coordination, proprioception, body awareness
- Improve speed, agility, quickness and reaction time
- Improve full spectrum energy availability from aerobic cardiovascular endurance to high intensity anaerobic power production
- Improve a continuum of strength from muscular endurance, to strength to explosive power

Why is Athleticism Valuable?

- Athletes gain fundamental abilities that become the foundation for complex, powerful sport specific skill development
- Athletes gain the critical skills to execute sport specific strategic and tactical situational responses (read – react – response if fast, efficient and accurate)
- Minimize the chance of injury during times of physiological stress due to growth and development
- Maximize the long term potential for performance gains with sport experience (playground to podium)
- Train like an athlete with a performance focus - Build a better athlete

Demands of Sport

- Dynamic, explosive, high intensity
- Unpredictable state of organized chaos
- Read – React – Response critical for success
- Unstable, constantly changing, frequent risk of injury
- Success requires the execution of complex skills blended with accurate strategic choices in the heat of competition

Be Ready!

www.twistconditioning.com

Growth + Development Trends

- Identify the milestones that are characterize average growth patterns to provide the best conditioning during the windows of trainability to build a better athlete
 1. Nervous System – initial growth velocity provides increased potential to develop foundational motor patterns and experience gains in body control, body awareness and physical literacy (before age 10)
 2. Skeletal System – noticeable growth spurt creates long levers and an opportunity for greater force production combined with minimal muscle mass to control limbs along with loss of mind to muscle connections for coordination = injury risk is great (age 12+)
 3. Muscular System – circulating hormones activate muscle mass that facilitates muscular endurance, strength and power gains and creates a more durable and explosive athlete (age 16+)

Canadian Sport for Life (CS4L) Playground to Podium – Long Term Athlete Development Plan

- Fundamentals (age 6-9) focus on physical literacy, gross motor skills
- Learn to Train (age 8-12) learn overall sport skills
- Train to Train (age 11-16) consolidate sport skills + tactics with physical abilities
- Train to Compete (age 15 – 23) sport specialization, increase training intensity
- Train to Win (18+) focused, dedicated, competitive

Twist Paradigm

- Movement + Strength + Balance = we build Smart Muscle®
- Stimulate athlete progression using exercises, skills and drills that integrate movement fundamentals with complex balance challenges and the execution of whole body standing strength
- Exercises are selected based on athlete age, ability, sport demands, positional variations
- Workouts are designed to challenge all aspects of athlete development (speed, agility, quickness, strength, power, balance, reaction time, energetics)
- Training plans are periodized to push the boundaries of development in all aspects of athleticism based on sport and the phase of the competitive season

Sport Movement – Strategic Development

Train Fast to Be Fast

1. Motor Patterning – young athletes practice fundamental motor skills with precision to move them along the skill acquisition continuum from cognitive to associative to automatic skill execution
2. Fire Neuromuscular Feedback mechanisms – teach, repeat and refine motor patterns to accelerate the communication systems between the mind and the muscle leading to faster muscle activation
3. Deceleration Focus – teach safe landings using triple flexion in conditioning situations so that athletes are well prepared to control power in competition and have the foundation for fast direction change

Be Ready!

www.twistconditioning.com

4. Multi Direction + Complexity – challenge the athlete with patterns linked together (agility) that flood the neuromuscular system with sensory and motor information and demand faster skill execution
5. Overspeed – use training tools to stimulate a faster than ever before experience that teaches the Neuromuscular system to fire at a faster rate
6. Power – use triple extension and summation of force concepts with low amplitude plyometrics to harness muscle elasticity and teach quick coupling time for fast direction change with maximal efficiency
7. Reaction Skills – layer in read and react skills with movement complexity and speed requirements to challenge athletes to read – react and respond using automatic motor patterns and situational decision making
8. Energetics – focus skills and drills to game required speed and work to rest ratios for best transferability to sport

Sport Balance - Strategic Development

To Train Balance You Must Be Out of Balance

1. Body Control / Body Awareness – expose athletes to basic static balance challenges that flood the body with sensory information, force the mind to filter details to develop an appropriate motor command to regain or retain body control developing foundational neuromuscular communication pathways
2. Complexity – introduce more challenging balance exercises using dynamic movement and balance training tools forcing the mind to muscle connections to fire faster and require the mind to filter more sensory information to drive a motor response requiring the athlete to solve a balance puzzle (read – react) and learn force control in an unstable environment
3. Overload – introduce resistance training tools with balance challenges to teach the athlete force production and body control simultaneously in unstable situations activating stabilizers, synergists and prime movers to work cohesively
4. Transitional Balance – dynamic movement is integrated with strength demands and a balance challenge to teach athletes to instantly develop a stable foundation to produce maximum force developing exceptional internal reactivity (the ability for the body to instantly adjust to an unstable situation by producing the accurate amount of force production for performance)
5. Power – athletes are challenged to produce maximal explosive force in an unstable situation with greatest transferability to sport requirements
6. Energetics – athletes train at game speed and work to rest ratios with integrated strength + movement + balance challenges to maximize muscle activation levels, force production and sport reactivity requirements (an excellent option for in season competitive athletes to retain off season strength gains)

Sport Strength Strategic Development

Train Movement Not Muscle

1. Foundational Movements – athletes perform fundamental lifts that activate the neuromuscular communication pathways, fire sport-like muscle recruitment patterns and activate multiple layers of muscle fibres (synergists, stabilizers, prime movers) to achieve early strength gains with minimal load
2. Multi Joint Lifts – lift complexity is increased challenging athletes to fire muscles in sequence using summation of force while maintaining body control. Athletes are cued to initiate force with the lower body, transfer it through the core and express the force through the upper body similar to sport skill execution

Be Ready!

www.twistconditioning.com

3. Olympic Lifts + Overload – muscles are overloaded to achieve strength → hypertrophy → power gains using required mechanical principles combined with adequate load while continuing to focus on body control and transfer of force from floor to fingertip
4. Complexity – Lifts are layered with dynamic movement and balance challenges to overload the Neuromuscular communication pathways (both sensory information processing and motor responses time is challenged) to activate more muscle fibres and build durability in joints and supporting structures
5. Power Production – using precise lifting mechanics (triple extension / summation of force), athletes are challenged to produce maximal power under load with efficiency and body control requiring the Neuromuscular feedback system to activate maximal muscle fibres at explosive rates
6. Energetics – lifts are repeated (reps, sets, loads) using game and sport specific movement demands and loading requirements to develop explosive strength required for sport performance

Outcomes

- Age appropriate – exercises, skills and drills are chosen based on a combination of athlete chronological age, developmental age and training age (yrs of sport conditioning experience)
- Progression – using a well designed progression plan, athletes are continually challenged to improve all aspects of athleticism in a fun, exciting and competitive environment
- Complexity – with experience and precise coaching cues, athletes are challenged to execute more complex skills, drills and exercises where balance + movement + strength demands are layered in the conditioning environment. Failure in the training centre leads to success in sport as athletes safely learn from their mistakes.
- Maximum Impact – all aspects of the training are founded in science with a focus on developing the speed, efficiency, activation patterns and accuracy of the Neuromuscular communication systems giving every athlete the performance competitive edge and the development of Smart Muscle®
- Physical Confidence – athletes who are challenged in the training environment and push their physical limits in friendly competition gain the confidence to take more risk in their sport, try new skills and are more focused in high demand sport situations

Building Champion Athletes + Winners in Life

- Strategic development of athleticism during the short term gives athletes immediate sport success that fuels future goals and aspirations
- Over the long term, athleticism gives athletes the gift of life long sport enjoyment motivating them to care for their physical machines and dedicate time and energy toward successful sport for others as a parent, teacher or coach

DELIVER RESULTS™

Be Ready!

www.twistconditioning.com