





SportMedBC
BEST PRACTICES
... in Sport Health, Sport Safety & Sport Training




**Functional Assessment
of Athletes**

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Presentation Overview



- Evolution of the program
- Protocols and assessment approach
- Exercise prescription
- Ongoing monitoring
- Recommendations for coaches



Evolution of the Program



- Protocol first implemented with Team BC athletes (initially screening over 450 athletes)
- Medical monitoring (with physician), functional assessment (with a therapist), exercise prescription (with a strength & conditioning specialist)
- Ongoing programming is ideal



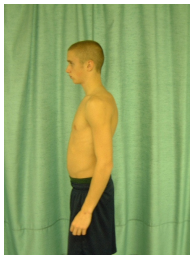
Why Monitor Athletes?

- As athletes mature, they establish movement patterns, adaptations and accommodations (i.e. "physical baggage")
- Injury (acute or repetitive) and/or trauma lead to compensations





Why?





Why Monitor Athletes cont.

- We postulate that.....

If we functionally test and monitor “developing” athletes (presumably adolescents), we will see fewer athletes leaving sport due to injury thereby providing better opportunity for skill development.



Who Monitors Athletes?



- Surprisingly few tools exist
- Few consistent programs – Team BC is one of them
- College/university sport includes medical health screening and physical profiling with joint-specific assessment
- Require consistent staff to administer the protocols
- A few NSO’s have caught on and are now realizing the benefits



The Assessment Team

- Physiotherapists, Athletic Therapists, Chiropractors
- Strength & Conditioning Specialists
- Physicians
- Dietitians
- Sport Psychologists





The Assessment Approach

- A non age-specific screening tool that can be used across sports
- This tool uses various themes including:
 - posture
 - muscle balance
 - joint-specific flexibility
 - core strength
 - body awareness/proprioception



The Assessment Approach cont.

- This tool is intended to draw conclusions and prescribe best practices in order to prevent injury, maximize performance and/or enhance recovery from existing problems.





The Assessment Approach cont.

POSTURE

1. Static
2. Sport-specific





The Assessment Approach cont.

MUSCLE LENGTH & JOINT MOBILITY

1. Lower Extremity
2. Pelvis
3. Spine
4. Shoulder





The Assessment Approach cont.

MUSCLE BALANCE & FUNCTION

1. Strength – lower extremity
2. Abdominal/trunk
3. Shoulder Girdle: glenohumeral and scapular





What We Have Learned So Far

General Observations

- Multi-disciplinary approach reveals valuable information about the “total athlete”, physically and mentally
- Adolescent athletes currently on strengthening and core stabilization programs have lower incidence of injury



What We Have Learned So Far cont.

- Lower extremity inflexibility is a significant indicator for knee pain
- There is a strong correlation between low back pain, lower extremity "itis's", shoulder instabilities and lack of core strength



What We Have Learned So Far cont.

- Statistically significant results have been found with relation to gender and exercise prescription
 - more males were prescribed flexibility
 - more females were prescribed scapular stabilization
- This information is critical for off-season and pre-season exercise prescription/design



Exercise Prescription

- Based specifically on assessment findings
- Designed for each athlete
- Outcome measures clearly identified on the athlete's assessment form
- Teaching session on-site to improve understanding and compliance



Strength & Conditioning Program

Post physio assessments:

- Consult with coaches and establish physical and mental traits necessary for success in the sport, can vary with positional demands
- Combine physio results and coaches' synopsis with three main factors used in client evaluation and program creation





1. Assessment of Activity

- Velocity
- Power outputs
- Intensity





Assessment of Activity cont.

- Frequency of required effort
- Duration of effort
- Recovery periods





Assessment of Activity cont.

- Type of movement pattern
- Metabolic system engaged





2. Assessment of Individual/Team

- Physical maturity
- Mental maturity
- Size of athlete
- Structure of body





Assessment of Individual/Team cont.

- Previous injuries
- Fatigue factors
- Physical disabilities





3. Length of Program

- **Periodization**





Case Study - Sailing

- Athlete and sport-specific findings
- Worked directly with the coaches
- Integrated changes into their existing conditioning programs
- Existing injuries were successfully addressed, sport performance was enhanced





Recommendations for Coaches

- **Access available programs and specialists to help your athletes**
- **Design athlete-specific and sport-specific programs around the assessment findings**
- **As a general rule, core stability and muscle control should be emphasized across all sports**
- **Conditioning programs MUST be specific and clear with supervised practice**
- **Cost?**



Where the Program Is Going

- We will continue to implement the tool across all provincially and federally funded programs
- Capacity Building - training practitioners to conduct assessments
- Evaluate data – utilize to build sport-specific recommendations
- We eventually would like to develop a digital library of common exercise prescriptions



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