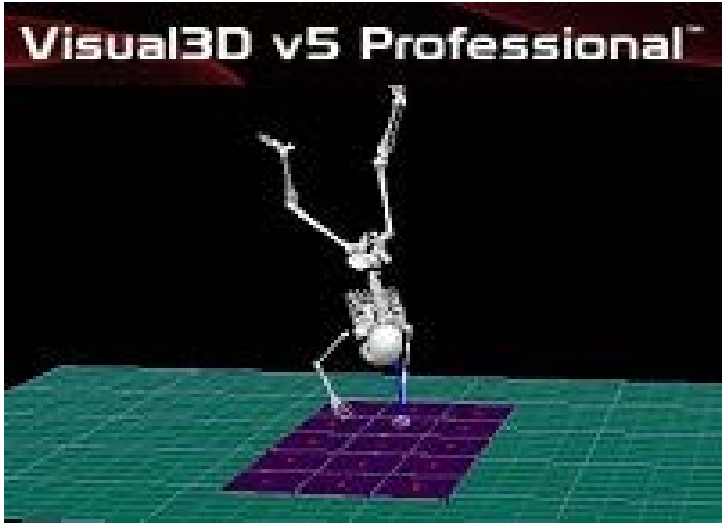




STRENGTH AND
CONDITIONING FOR
THE FEMALE ATHLETE



WE ARE ESSENTIAL TO ALBERTA



OVERVIEW

- Address importance of strength and conditioning for female athletes
- Explore current best practices in strength and conditioning and sport science research as it relates to female athletes
- Discuss methods to best meet the needs of female athletes across various sports and development levels
- Highlight strategies to challenge the culture of girls and women engaging in strength exercises
- Explore barriers or challenges faced by female athletes in accessing effective strength and conditioning programs



WE ARE ESSENTIAL TO ALBERTA



WHY IS THIS TOPIC IMPORTANT?

- History of strength training for women
- S&C in Canada
- Effective physical preparation is an essential to improving performance and reducing injuries



WHAT DO WE KNOW?

- Fat free mass and muscle cross sectional area
- Upper/Lower body strength
- Absolute and relative power
- Hormone profile



FOCUS FOR STRENGTH AND CONDITIONING PROGRAMS

- Need to focus on improving maximal strength and power
 - Muscular mechanisms
 - Muscle cross sectional area
 - Neural mechanisms
 - Motor unit recruitment
 - Rate coding



WHY STRENGTH AND POWER DEVELOPMENT IS IMPORTANT

- Muscular work performed to produce movement
 - Generate propulsion
 - Attenuate impact forces
- Rate of force development



HOW TO ELICIT ADAPTATIONS

- Long term training plan
 - Must be specific to the sport, season and individualized
 - Emphasis during different phases (off season versus in season versus competition)
 - Program effectiveness
 - Fitness testing, movement screens, general observations
 - Adherence is important



HOW TO ELICIT ADAPTATIONS

- Acute programming variables
 - Multi-joint movements
 - Ballistic movements
 - Ex. Weightlifting
 - Volume and intensity
 - Need to train at higher intensity



TRANSLATING KNOWLEDGE TO PRACTICE

- Competitive athletes must have a base level of training before reaching higher level sport
- Development of sport skills concurrently with development of physical qualities
- Develop good habits early on



BEGINNER

Goals	Primary: Mobility and Technique Secondary: Muscular fitness and Strength Build a “base”
Exercise choice	Basic exercises - Plate Squats, Overhead Squats, Push/Pull Exercises, Accessory exercises
Focus	Range of motion through controlled movement and body awareness
Volume and Intensity	Moderate volume and low-moderate intensity to start
Training Response	Initial rapid response and adaptations to training

INTERMEDIATE/ADVANCED

Goals	Primary: Explosiveness and maximal strength, transfer of training to sport Concentrated training focus (one quality at a time)
Exercise choice	Complex exercises - Weightlifting movements, Squat and Deadlift variations, Push/Pull Exercises, Accessory exercises
Focus	Intensity and execution of exercises
Volume and Intensity	Moderate-high volume and Moderate-high intensity
Training response	Need greater intensities and/or volume to see adaptation

WHAT MORE CAN BE DONE?

- Development of strength targets and standards
- Need to work on introducing S&C at optimal age/development level
- Majority of resources/programs at post-secondary and elite levels
- Musculoskeletal injury rates still high



WHAT MORE CAN BE DONE?

- Build a training culture that encourages female athletes:
 - Coaches
 - Parents
 - Athletes
 - Administrators
 - Sport Organizations/Schools



FINAL THOUGHTS

- Implications of inferior physical development to performance and injury risk
- Training with effective methodologies and exercise selection to improve strength and power development
- Access to S&C programs at all levels of development
- Build a positive training culture by eliminating stigmas and misconceptions around S&C for female athletes