Objectives

- Potential benefits of games based on current research
- Game Selection (when/why)
- Adapting the games
- Safety Guidelines and Recommendations
- Incorporating games into a comprehensive training program

Potential Benefits of Strength and Conditioning Games

- Improvements in both the health and skill-related components of fitness
- Creation of a competitive environment
- Mental/cognitive Strategy development
- Fight staleness
- Relieve stress
- Foster cohesion
- Promote leadership
- Make Training FUN!!!!!!!

Programming Considerations

* Games should be selected based on the physiological attributes that you wish to develop.
  * Strength Games
    - Lifting, pulling, pushing, jumping, squatting, lunging, dragging, carrying, and heaving activities executed at a slower tempo than when performed for power
  * Speed Games
    - Activities performed at maximal speeds, i.e., sprint work.
  * Work Capacity
    - Involve activities that are executed for extended periods of time in order to create a training effect on the various work capacity systems.
Training with Purpose!

- **Power Games**
  - Lifting, pulling, pushing, jumping, squatting, lunging, dragging, carrying, and heaving activities executed at a faster, more explosive tempo than when performed for strength
- **Mixed Games**
  - Employing more than one method of stimulus in order to create a desired training effect.
- **Non-fatiguing Games**
  - Focus on active recovery and non-fatiguing skill-related fitness activities.

Programming: Safety

- **Safety First!**
  - **ALWAYS** stress good mechanics and form!
  - Pair athletes based on size, strength and/or ability whenever possible
  - Adequate training base relative to the demands of the games that will be played...
  - Non-slip surface
  - Free of sharp objects and clutter
  - Keep first aid kit readily available!
- **Safety Plan**
  - Games must be appropriate for the clients physiological age

Programming: Creating Competition and Fun

- People respond differently to competition
- Main goal is always providing a positive experience
- **PR vs. Opponent**
  - Time to completion
  - Number of reps in a given amount of time, etc.

Programming: Metabolic Considerations

- Interval based conditioning may not only increase physiological parameters, but may also reduce risk of injury via repetitive endurance training.
- HIIT has been shown to improve fat loss to a greater extent than LSD training (Schoenfeld & Dawes, 2009).
- Mixed games are a great alternative to traditional interval training programs

Do Skill-Based Conditioning Games Offer a Specific Training Stimulus for Junior Elite Volleyball Players


- Although the improvements in physical fitness after training were greater with skill-based conditioning games, instructional training resulted in greater improvements in technical skill in these athletes. These findings suggest that a combination of instructional training and skill-based conditioning games is likely to confer the greatest improvements in fitness and skill in junior elite volleyball players.

Skill-Based Conditioning Games as an Alternative to Traditional Conditioning for Rugby League Players


- The results of this study demonstrate that skill-based conditioning games offer an effective method of in-season conditioning for rugby league players. In addition, given that skills learned from skill-based conditioning games are more likely to be applied in the competitive environment, their use may provide a practical alternative to traditional conditioning for improving the physiological capacities and playing performance of rugby league players.
Training Injuries in Rugby League: An Evaluation of Skill-Based Conditioning Games.


The majority of injuries (90.9 per 1000 training hours, 37.5%) were sustained in traditional conditioning activities that involved no skill component (i.e., running without the ball). In contrast, the incidence of injuries sustained while participating in skill-based conditioning games (26.0 per 1000 training hours, 10.7%) was low. These results suggest that skill-based conditioning games offer a safe, effective method of conditioning for rugby league players.

SUITABILITY OF SOCCER TRAINING DRILLS FOR ENDURANCE TRAINING.


Soccer drills such as those used in the present study appear to be an adequate substitute for physical training without the ball and thus provide simultaneous skill and fitness training. The increase in training time spent developing technical ability and/or a reduction in total training time required may be useful for soccer teams.

In a nutshell

* Increase Cardiorespiratory endurance
* Additional skills training
* May reduce the risk of chronic overtraining injuries experienced via LSD training

Heart Rate Training Zones

* Training at a percentage of your max heart rate
  * Method 1:
    \[ \text{THR}\% = \frac{220 - \text{age}}{2} \times 100 \]
  * Method 2:
    \[ \text{THR}\% = \frac{220 - \text{age} + \text{RHR}}{208 - 0.7 \times \text{age}} \times \text{intensity} \]
* Method 4:
  * Training Heart Rate = Determine Heart Rate at LT or VT

Work to Rest Ratios

* Work:
  * Short, intense bouts of activity.
* Rest:
  * True recovery probably occurs around 70% of LT or VT HR.
  * (research is still needed in this area)
  * Dependent on Energy System T
    * ATP-PCr (3-15 sec)
    * Glycolytic (>15 sec, but less than 2 minutes)
    * Aerobic (>2 minutes-Steady State activities)

Conconi’s Deflection Point

* A deflection from linearity in heart rate that coincides with lactate threshold.

\[ \text{Lactate threshold} = \text{HR at} \text{LT or VT} \]

* Great “Field” test for performance coaches and trainers

Heart Rate

0 20 40 60 80 100 120 140 160
Time (min.)

6 8 10 12 14 16 18

Work to Rest Ratios

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Series 1

Heart Rate (bpm)

Time (min.)

Heart Rate (bpm)
Work to Rest Ratios

- **Strength/Speed/Power Games**
  - Activities performed at maximal speeds, i.e., sprint work.
  - Higher intensity/shorter duration
  - ATP-PCr (2-3 sec)
  - 1:5-1:20 W/R

- **Work Capacity/Mixed Games**
  - Low-intensity/long duration
  - Glycolytic (>15 sec but less than 2 minutes)
  - Aerobic (>2 minutes, steady-state activities)
  - 1:1-1:3 W/R

Other Recommendations: Integration

- Use after general or specific warm-up
- Use between training sessions and/or competitions as an active recovery
- Introduce games during active rest phases in a periodization cycle
- Use games/drills that require fewer athletes and lower intensities between exercises in a circuit
- Use in group training sessions to motivate and challenge

Additional References


Additional References


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