WOMEN IN SPORT AND EXERCISE: CURRENT TRENDS

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• The participation of woman in sport has grown dramatically in the past 20 years
• Greater risk of injury
• Competition intensity - increased
• Demand for improved physical fitness
• Crossroad point- resistance (strength) training

Resistance training nowadays has become integral part of overall conditioning program of female athletes and is considered to be of great importance in optimal physical development.

Strength training for Woman athletes

• There are some specificity in comparison to man:
  – Fewer muscle fiber
  – 10 to 20 times lower testosterone concentration- diminished hypertrophy effect
  – ratio of muscle fiber sizes (slow-twitch fibers larger than the fast-twitch ones in most of untrained women)- detraining effect

Resistance training responses- more rapid in woman
• greater potential than man for upper-body strength
• However… basically, female athletes should have the same strength training regimen as man!!
• What does this mean??

Strength training programs

• Free weights and dumbbells - same relative intensity
• Multijoint, multiplanar exercises- that results in strength gains with concomitant intermuscular coordination- transfer to sports activities.
• Strength development- heavily related to resistance-loading schemes (heavier the load- greater strength gain!!)
Consequently

- Woman athlete should regularly include heavy resistance sets (3-5 RM or ≥90% of 1RM).
- Upper-body muscles should be taxed with strength training programs.

Strength training for woman – health related aspects

- Traditionally, strength training has been seen as a means of improving muscular strength and endurance (muscle mass) and power, but not as a means for improving health.
- However, in the last 15 years there is increasing evidence that strength training plays a significant role in many health-related factors.

- Resistance training program has been shown to have positive relationship with maintaining bone mineral density-osteoporosis.
  - that resistance training increase bone mass in women of all ages
    - young women- resistance training helps attain peak bone mass
    - postmenopausal women, resistance training may help delay bone loss and the risk of fracture.
    - elderly women, training with weights can help increase bone density

- It has been stated that resistance exercise training and subsequent increases in muscle mass may reduce multiple cardiovascular disease risk factors in women.
- strength training develops and maintain muscle mass and metabolic rate, and thus have beneficial effects for weight loss and controlling weight with age.

- strength training has been shown to be a safe and effective intervention to improve functional performance in older adults, both man and women
  - Vast majority of problems associated with aging are mostly connected to muscle weakness
  - strongest predictors of functional dependency in the elderly are muscle power and habitual physical activity level in older women.
Health related strength-exercise prescription

• Recommendation
  – 1 set of 8–12 repetitions to fatigue of 8–10 exercises 2–3 times per week for persons under 50 years
  – The same regimen using 10–15 repetitions for persons over 50 years of age

Conclusion

• Women athletes nowadays regularly implement heavier loadings in order to stimulate overall physical development. Upper body strength with concomitant power development are dominant strength component in up to date strength training programs for woman athletes.

• Strength training has been shown to be beneficial in improving health in women. It appears that most of the benefits can be attained with single set program method using 8–15 repetitions to fatigue.

SO...

• Do not hesitate, encourage woman in your community to do strength training, irrespective of age and physical fitness status!!!
• Strength training is even more important than aerobic training in elderly woman!

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