



### **Is it safe for children/adolescents to participate in resistance training?**

**Answer: Yes, however it needs to be appropriately supervised and under the guidance of a fully-qualified instructor. The guidelines discussed below must be followed to ensure participant safety.**

Resistance training in the young person has been controversial in the past, due to concerns about potential damage to growth plates and the consequent interference with normal skeletal growth. However, today most experts agree that the risk of growth plate fractures can be lessened by keeping exercise intensity below 80% of 1 Repetition Maximum.<sup>1</sup> Resistance training which incorporates appropriate technical instruction is currently accepted as a safe and effective mode of exercise for preadolescent and adolescent children by most major medical communities.<sup>2</sup> However, the following are important and should be considered when introducing a child or adolescent into a resistance training programme:

1. Maturation level of the child: If children are unable to follow supervision and direction then participation in resistance training should be limited.<sup>2</sup>
2. Instruction and supervision should be provided by a fully qualified professional . Benson et. al, (1995) have suggested that when participants have established correct form it is safe to decrease the instructor participant ratio to 1:5 or 1:6 depending on the behavioural needs of the group.<sup>3</sup> It is accepted that supervision not only decreases the risk of injury in the weights room, but also increases the efficacy of resistance training. Supervision is needed to give continuous and immediate feedback to the young person in order to improve exercise techniques and reduce risk of injury.

The following recommendations for resistance training among children and adolescents have been made by the ACSM (2006).<sup>4</sup>

- Resistance training should be supervised by a competent instructor.
- Overly intense or maximal resistance training should be avoided.
- The child should perform 8 to 15 repetitions per exercise. A repetition range below 8 should be reserved for adolescents of sufficient maturity.
- If a prepubescent child cannot perform a minimum of eight repetitions in good form, the resistance is too heavy and should be reduced.

- Training equipment should be varied and appropriate to the size, strength and degree of maturity of the child.

To conclude, muscular strength is an essential component of physical fitness and is included in the Chief Medical Officer's (CMO's) physical activity guidelines for children. Children and young people should achieve a total of at least 60 minutes of at least moderate intensity physical activity per day. This should include activities to improve bone health, muscular strength and flexibility at least twice a week.<sup>5</sup> Resistance training is advocated by many national organisations, as long as the guidelines outlined above are followed.

## References

- <sup>1</sup> Heyward, V.H. (2006) *Advanced Fitness Assessment and Exercise Prescription*. Human Kinetics.
- <sup>2</sup> Myer, G.D. and Wall, E.J. (2006) Resistance Training in the Young Athlete. *Operative Techniques in Sports Medicine* 14 (3): 218-230
- <sup>3</sup> Benson A.C., Torode, M.E., & Fiatarone Singh, M.A. (2006) A rationale and method for high-intensity progressive resistance training with children and adolescents. *Contemporary Clinical Trials* (2006), doi: 10.1016/j.cct.2006.11.004
- <sup>4</sup> American College of Sports Medicine (2006). ACSM's Guidelines for Exercise Testing and Prescription, Seventh Edition. USA: Lippincott Williams & Wilkins.
- <sup>5</sup> Department of Health (2004) CMO's report: At least five a week: Evidence on the impact of physical activity and its relationship to health. London: HMSO

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