YOUTH PERFORMANCE AND FITNESS—STRENGTH AND CONDITIONING INFORMATION FOR PARENTS

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The incorporation of resistance training to help youth athletes improve athletic performance has steadily become more popular over the past decade. After working with children for the past 12 years, several questions and concerns have been raised by parents regarding their child's participation in a strength and conditioning program. Common questions include "how safe is a resistance training program?" "Will resistance training stunt their growth?" "What age should they start?" "Will lifting weights help them get bigger, faster, and stronger?" and "Will strength training keep them from getting hurt while playing their sport?" These are just a few of the questions or type of questions that have been asked over the years.

The National Strength and Conditioning Association (NSCA) has provided a guideline called "Youth Resistance Training: Updated Position Statement Paper from the National Strength and Conditioning Association," (2). This position statement contains expert dialogue in a roundtable discussion on youth resistance training, several articles published about the Long-Term Athletic Development (LTAD) model, and the proper utilization of resistance training and fitness modalities for youth. It was authored by several leading experts, practitioners, and researchers in the field of strength and conditioning.

This article will provide insight on the current research and expert opinions of the leading sport coaches, strength coaches, and researchers involved in providing sound, well-developed strength and conditioning programs for youth.

The Youth Position Statement, published in 2009, is a 13-page document that includes 258 references and seven expert authors who provide seven recommendations on youth resistance training (2). These recommendations are that a properly designed and supervised resistance training program:

1. Is relatively safe for youth
2. Can increase the muscular strength and power of youth
3. Can improve the cardiovascular risk profile of youth
4. Can improve motor skill performance and may contribute to enhanced sports performance of youth
5. Can increase a young athlete's resistance to sports-related injuries
6. Can help improve psychosocial well-being of youth
7. Can help and promote exercise habits during childhood and adolescence

LONG-TERM ATHLETIC DEVELOPMENT MODEL

Strength and conditioning professionals that incorporate a properly designed and supervised training program can help their young athletes train, compete, and reduce the likelihood of injury. Most importantly, they can provide the young athlete with the tools necessary to maintain a healthy and active lifestyle into their adult years. The LTAD model is an excellent representation of developing and training youth from early childhood into adulthood. It is a seven-stage model that can help keep physical activity fun and prevent overtraining and burnout. It also provides useful information on how to design programs that have proper progressions for their age and skill level, as well as realistic progressions to maximize their performance level as they get older and more competitive (1,4).

Stage 1: Active Start (Males and Females 0 – 6 Years of Age)

- Keep active for 60 min a day, including physical activity with other youth
- Teach the proper movement skills; run, jump, and explore

Stage 2: Fundamentals (Males 6 – 9 and Females 6 – 8)

- Participate in less-structured activity with a focus on physical literacy
- Encourage physical activity classes in school

- Focus on multiple sports that include running, jumping, kicking, and other activities that challenge balance, coordination, and speed (gymnastics and swimming can be incorporated at this stage)

Stage 3: Learn to Train (Males 9 – 12 and Females 8 – 11)

- Low to moderate structure and focus on technical competency
- Maintain multiple sports (three or more) plus unstructured play
- Learn proper bodyweight training: push-ups, bodyweight squats, pull-ups, crunches, and external resistance with medicine balls and stability balls
- Balance practice time and actual game time: 2 – 3 practices per game

Stage 4: Train to Train (Males 12 – 16 and Females 11 – 15)

- Moderate structure with the main focus on technical skills and the secondary focus on performance outcomes
- Aerobic training becomes a little more important, but the focus is still on skill, speed, and strength
- Periodization can be incorporated slowly with multiple phases and foci
- Focus may shift to only two sports
- Competition time will increase compared to practice time and practice time will start to incorporate more real-life and game-like scenarios and situations

Stage 5: Train to Compete (Males 16 – 23 and Females 15 – 21)

- Participate in highly structured activities with the focus shifting to performance
- Start specializing in one sport
- Begin training year-round and at a high level of intensity with proper progressions and adequate rest
- Develop strengths and decrease weaknesses
- Develop high level competition by modeling high level practices
- Could be competing at the national and/or international level

Stage 6: Train to Win (Males 19 and Over and Females 18 and Over)

- Could be competing at the highest level of competition, professional, and/or international level
- Very skilled athletes and very high dedication
- These athletes are working with highly qualified coaches
- Training is highly specialized with periodization making sure the athlete is getting proper training, recovery, tapering, and peaking at perfect time

Stage 7: Active for Life (All Ages)

- Maintain lifelong physical activity participation
- Participate in familiar sports or activities
- Avoid going from an active childhood to a sedentary adult lifestyle
- Participate in less-intense recreational activities
- Pursue a career or volunteer coaching in fitness or sport-related activities

AGE TO BEGIN RESISTANCE TRAINING

In terms of what age a child should start a resistance training program, there is no specific age; however, it is generally recommended that they must be mature enough to accept and follow directions and possess an understanding of the risks and benefits associated with resistance training. It is common belief that if a child is participating in an organized sport then they are ready to begin lifting weights. Typically, this would occur approximately at the age of 6 – 8.

CONCERNS OF RESISTANCE TRAINING FOR YOUTH

A roundtable discussion including coaches, medical professionals, and researchers addressed several questions pertaining to training youth, including injury rates, efficacy, and safety (3). Related to the safety of a strength and conditioning program for youth, there is a common theme among the experts. When a program is well supervised, form and technique are properly instructed, and the program is administered by someone who holds an appropriate certification (e.g., Certified Strength and Conditioning Specialist® [CSCS®]) there should not be a concern for the child's safety. A large number of the reported injuries took place in a home or involved youth who were unsupervised. These injuries were generally mild and ranged from smashed fingers, dropping a weight on the foot, and minor muscle strains. In regards to minimizing risks in the weight room, many of the experts agreed that there should be an appropriate coach-to-athlete ratio of one coach per 10 youth athletes, proper education on resistance training, and proper progressions for their training age.

BENEFITS OF RESISTANCE TRAINING FOR YOUTH

Several studies have been published on the benefits of resistance training on muscular strength, overall fitness, injury reduction, sports performance, and confidence (2). Increased neural drive, increased synchronization of motor units, and hypertrophy are other factors that may be improved by incorporating resistance training (2). The experts also agree that there are many other health benefits associated with resistance training. Research suggests that resistance training in youth can result in increased bone density, healthier body composition, and enhanced performance with motor skills, which can lead to increased sprint speed and vertical jump performance. In several other studies, health risk factors improved including oxygen consumption, flexibility, and blood lipid profile (2). Finally, benefits from

participating in a resistance training program also include reduced chance of injury while playing their sport and increased self-esteem and confidence (2).

CONCLUSION

There are numerous benefits for youth to begin a strength and conditioning program. The program should be led by a qualified strength and conditioning professional and tailored to meet the needs of the specific ages, gender, and sport(s). The child should be willing and ready to take instruction to ensure safety, quality training, and to meet performance goals. By following the above recommendations, these individuals will be provided with strength and conditioning tools to last them a lifetime.

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