Roundtable: Prepubescent Strength Training

Strength Training for a Nine-year-old

**Editor’s Note:** Kent Durso of Nashville, Tenn., wrote the NSCA for advice and guidance in strength training for his 9-year-old son, who is active in basketball, baseball and soccer. The following are responses to that letter from members of the NSCA’s Youth and Adolescent Committee, headed by Mike Burgener. The addresses of the participants are listed on page 62.

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**Mike Burgener:** My opinion on prepubescent strength training is based on my experience as the father of a 9-year-old son who shares my enthusiasm for sports and weight training. In fact, I have three sons, all of whom have started strength training: Casey, 9, Beau, 6, and Cody, 3. All started using broom stick handles and were taught terminology and technique. Cody is still working on the broomstick handles, while Casey and Beau have progressed at different rates, due to their age. I purchased nine steel bars 3/4, 1 and 1 1/4 inches in diameter, all at 4, 5, and 6 foot lengths. The weights on these bars are progressive. Each son used the 3/4 inch, 4 foot bar to learn basic lifts; bench, back and front squat, incline bench and upright row. Using body weight, they then do back extensions and situps on the floor. Once they mastered these lifts, using the same weight, they learned the power snatch and the power clean with a jerk from the rack, as well as the power clean and jerk. If they used correct technique as outlined in the NSCA exercise checklist, they progressed to a heavier bar. Their technique was evaluated using a 10 point scale; they had to score an eight in order to progress (See NSCA Journal 14.4).

Casey now holds three national pee wee records from the American Weightlifting Association. As a father, I feel very comfortable with this procedure. If my sons want to train, they may do so under my supervision. If they don’t feel like training, I don’t push it.

**Doug Fairchild:** What type of program is recommended for an active 9-year-old athlete interested in weight training to enhance development and assist in injury prevention? This question is asked quite often by parents who envision their child as a high school, college or professional sports star.

As a professional educator, a strength and conditioning specialist and a coach of prepubescent and adolescent children, I have mixed feelings on this topic. From a professional educator and coach’s perspective, I want kids to be kids; let them run, jump and play. However, as a strength and conditioning specialist I try not to moralize. Instead, I try to provide safe, diverse, appropriate information for parents who want their child to get a head start.

During a 1986 trip to Russia with an early NSCA study program, Dr. Michael Yessis said many Eastern Bloc countries start athletes on strength training programs at early ages, utilizing broad-based, all-around activities for general preparation. These multi-sport, multi-year programs attempt to help the athlete get stronger, faster, bigger and quicker prior to specialized training. It sounds as though Mr. Durso’s son is utilizing this type of program. In the same NSCA study tour, Yuri Verkhoshansky said children and teenagers should engage in slow, steady movement, utilizing light weight with high repetitions to enhance the development of ligaments, tendons and joints. A recommended program includes eight to 12 repetitions, two to three sets, with 1:30 to 2 minutes rest between sets, two to three days per week. He stressed that coaches must focus on training effect rather than load when working with young athletes. He said a skilled coach could foresee the result of the training load over a period of time.

The remaining unanswered question is: What do I do? For a 9-year-old child, having fun is very important. Strict discipline, regimentation, excessive hard work and repetition usually aren’t fun. The first thing I suggest is bodyweight exercises — pushups, chin-ups and sit-ups and fol-
low the guidelines recommended by Verkhoshansky. For running, use play-type games such as tag, frisbee, football, capture the flag, etc. Remember, the idea is to have fun. If it's not fun they won't maintain interest.

Any variety of strength and power exercises can be taught using a dowel or wooden rod for a training implement. Many training facilities use modified bars and light weight wooden plates that approximate the height of an iron plate.

It's very important to use a certified strength coach to teach correct technique in the Olympic style lifts. Youngsters should practice technique only when supervised.

The NSCA position paper on prepubescent strength training is a good reference, especially if a parent chooses not to use a certified strength specialist to train their child. Remember, use low intensity, low to moderate volume and frequent rest periods during the workout and allow youngsters to have fun.

**Steven Kenyon:** To begin, I recommend the following equipment:

- Plastic PVC pipe (6 in.)
- 10 kg chrome bar (6 in.)
- 1.25, 2.5 and 5 kg plates
- 1 kg medicine ball
- 2 kg medicine ball
- Segmented mat with firm padding
- 1 Standard bench

This equipment is minimal, simple and relatively inexpensive.

I recommend starting with general conditioning; stretching, jogging and calisthenics should be performed for several weeks, three to four times a week, to prepare the youngster for the program.

Prior to lifting any load, techniques for exercises should be taught with the PVC pipe, demonstrating proper technique, breathing and spotting skills for all exercises. Beginning exercises are the basic lifts recommended by the United States Weightlifting Federation and include bench press, snatch press, upright row, bent row, good mornings, front squat, back squat and sit ups. Perform exercises three times per week, using high volume and low intensity, for up to three months. Load can gradually be added as skill and strength levels permit.

As the youngster develops strength and skill over the first six months, he can be introduced to the more advanced lifts, using only PVC pipe until technique is learned. Basic exercises will be the major emphasis in the early years of development. As the athlete progresses, the focus will shift to the advanced Olympic and associated lifts.

A comprehensive program should also include basic, low impact plyometrics and medicine ball exercises, as well as ATP sprint conditioning (less than 30 seconds in duration) and LA conditioning (30 seconds to 2 minutes). Care should again be taken to ease the young athlete into these drills over the first several months of training.

The program uses free weights exclusively, hopefully progressing to the Olympic style lifts. Most evidence points to free weight, multiple joint training as being the most beneficial to the development of the strength necessary in athletics. This development is not limited to the "power" sports of football, wrestling and track, but to all sports, including volleyball, soccer and baseball. Free weight Olympic style lifting, coupled with a comprehensive program of stretching agility, plyometrics, ATP and LA conditioning will enable young athletes to optimize physical ability.

**C.J. Stockel:** The three sports Mr. Dursos' son is playing are great for building coordination, agility and quickness. Mr. Durso is correct in saying that strength training at this age would only enhance these abilities.

Taking into consideration that time is important, a three days per week program working major muscle groups would be ideal. I recommend the following program and equipment for Mr. Durso's son:

**Exercise  Muscles**

- Bench press  Triceps, pectorals
- Front squats  Gluteals and quadriceps
- Arm curls  Biceps
- Hang cleans  All major muscle groups of the legs, arm, shoulders and upper back
- Pull ups  Latissimus dorsi and trapezius
- Lunges  Gluteals and ham strings

**Equipment:** Straight bar with clamps, free weights, bench press, pull-up bar and jump rope.

The workout should begin with a short warm-up of jump rope for three to five minutes, just enough to break a sweat. Then, spend about 10 minutes stretching to prepare the muscles for the workout. The exercises are in an upper body to lower body progression to rest the muscles used in the previous exercise. The first strength training session should be with a professional instructor and exercises should be performed only with a bar until technique is learned.

The above exercises cover the entire body. The bench press, arm curls and pull ups will work the muscles of the chest, shoulder, arms and upper back.

The first workout with the bar should be done with the bar only, and one set of eight repetitions. During the second workout, add another set of eight repetitions and a third set in the third workout. When he can do three sets of 12 repetitions without help, weight can be added. Repetitions should never be less than eight or more than 12. A 1 RM is not important at his age. When the exercises are completed he should cool down; a five to 10 minute jog and a repeat of the pre-workout stretches would be ade-
quate. The workout will take about one hour. If Mr. Durso cannot get a professional strength training instructor, several videos are available to help teach these exercises. However, Mr. Durso should ensure his son is supervised during the work out.

Remember, goal setting is a great way to motivate athletes of all ages to achieve excellence, but safety is the number one objective in any program.

Jay Duval: Strength training during the formative years of pre-pubescence must follow several important guidelines:

- Each set must include a minimum of 10 repetitions; no more than three sets per exercise; three sessions per week, approximately 20 to 30 minutes per session.

- Supervision by an adult knowledgeable in exercise techniques is important. Emphasis must be on correct execution of exercises and a safety-first attitude. Do not allow the child to perform maximum lifts and avoid exercises that place excessive stress upon the spinal column.

- Do not overwhelm the child with terminology, training equipment, training gear, etc.

- Use a generalized physical development program.

First, the child should become proficient with exercises using body weight only, such as push ups, pull ups, bench dips, knee bends, body weight lunges, sit ups and glute ham raises. Once technique is mastered, a few exercises with bars and weights may be introduced. Large muscle groups should be exercised first, followed by smaller muscle groups. A sample routine, for use after body weight exercises have been mastered, is as follows:

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Reps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push ups</td>
<td>1 x 10</td>
</tr>
<tr>
<td>Bench press</td>
<td>2 x 10</td>
</tr>
<tr>
<td>Pull ups</td>
<td>1 x 10</td>
</tr>
<tr>
<td>Upright rows</td>
<td>1 x 10</td>
</tr>
<tr>
<td>Body weight lunges</td>
<td>1 x 10</td>
</tr>
<tr>
<td>Arm curls</td>
<td>1 x 10</td>
</tr>
</tbody>
</table>

When this routine can be completed with proper technique, additional sets or exercises may be added. Guard against unrealistic expectations; hypertrophy and strength gains will not come rapidly at this age, nor should they. A primary benefit of pre-pubescent strength training is improved confidence and discipline.

John Waters: If this child is motivated and has the time for a comprehensive strength training routine, he should start with bodyweight exercises to reduce the risk of injury. Sets of push ups, chin ups, dips, rope climbs, sit ups, peg boards, jump rope and no-weight lunges (front and side) are good for initial strength development. Increasing repetitions add interest, motivation and strength.

If interest and motivation remain following this routine, introduce him to elastic tubing or bands, basic lifting techniques and sport-specific exercises.

Next, begin a basic lifting program, working with dumbbells and progress to a bar or machine when proficiency is gained. Working with lighter weights and greater repetitions increases strength without building bulk.

As with any program, proper safety, warm up, cool down, stretching and sport skill development is required.

Denis A. Ference: This 9-year-old is already putting a lot of stress on his growing body by participating in three different sports. My first recommendation is a good, full-body static stretching program performed before and after sports participation, to aid injury prevention.

I would restrict resistive training to his own body weight. A short, full-body workout under a watchful eye might consist of sit-up and push-up variations, pull-ups, body resistance squats, calf raises, rubber ball squeezing, etc. Start off slow and gradually increase the repetitions and sets as they become easier. Three workouts a week with a rest day between are sufficient.

Ballistic movements should be avoided when introducing a 9-year-old to strength training. Start slow and work on technique and be attentive to any complaints of injury. If interest wanes, don’t push, burn out may occur before his most productive high school and college years. This is the method I plan on using with my son in a few years.

Michael Breitenbach: Any youth weight training program must focus on the perfection of technique, not the amount of weight lifted.

The program that I use to train my 8-year-old son is based on total body movements, such as the clean and jerk, snatch (olympic lifts) and variations of these movements. The number of days he trains per week depends on his other activities. He uses a six foot length of 3/4 inch pvc pipe and three lb. dumbbells. Flexibility is also very important. Again, technique is more important than the amount of weight lifted.

When we do train, I like the super set method of training all major muscle groups in one set, using limited space and equipment. Below are two examples of super sets that I use to train my son. The following exercises are performed three to four times in a circuit without rest; three-minutes rest between each set. Use a power clean grip for both super sets.

<table>
<thead>
<tr>
<th>Javorek Super Set x 3 set</th>
<th>Burgener Super Set x 3 sets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Upright row x 4</td>
<td>1. Power shrug x 3</td>
</tr>
<tr>
<td>2. Power snatch x 4</td>
<td>2. High pull x 3</td>
</tr>
<tr>
<td>3. Full squat push press x 4</td>
<td>3. Power clean x 3</td>
</tr>
<tr>
<td>4. Good morning x 4</td>
<td>4. 1/4 squat push press x 3</td>
</tr>
<tr>
<td>5. Bent over row x 4</td>
<td>5. Good morning x 3</td>
</tr>
</tbody>
</table>

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**Emil Slovacek:** Nine years of age is young for a child to begin a regular strength and conditioning program. Before deciding on equipment and the program, other issues should be dealt with.

It is the responsibility of strength and conditioning professionals, and parents, to teach children the psychological, physical, nutritional and social aspects of total fitness programs. When the child understands these important issues, equipment and program designs should be discussed.

First, the young athlete must understand the significance of aerobic fitness from a physiological standpoint; the more efficient the heart, the more efficient the other muscles in the body.

Aerobic exercise three times per week is also important to the overall program. Soccer, basketball, jogging, riding a bike, etc., provide very good and aerobic exercise for the young athlete.

When beginning a resistance training program, the best equipment is body weight. It may be hard to convince a young athlete that chair dips, spotted dips, spotted pull ups, pushups, situps, crunches and deep knee bends, are best for him. But he must understand that he must build a strong foundation.

After completing a body-weight program, the young athlete should be ready to begin using resistance training equipment. Direct supervision is needed throughout the young athlete’s early resistance training program.

A good all-around strength program for the young athlete should consist of exercises that stress both flexibility and range of motion. A young athlete should not perform high intensity plyometric exercises, or ballistic movements such as snatches, power cleans, jerks, etc. Three sessions per week is adequate for the initial training, and recovery should be explained to the youngster.

After six to 10 weeks, the coach or parent may change the exercises, but still try to work the same body parts, with no overhead lifting. After this six to 10 week period, increase sets to three, with the amount of reps remaining the same. Don’t change the weight until he can perform at least 15 to 20 reps.

It’s also important to praise young athletes for their enthusiasm on beginning a strength and conditioning program.

**Rick Bojak:** Most Eastern Bloc countries wait until athletes are 12 to 14 years of age before beginning any regimented weight program.

However, Dr. Alvin H. Crawford, an orthopedic surgeon in Cincinnati, Ohio, states in a recent article in the Salt Lake (Utah) Tribune newspaper: “Weight training for pre-teens can be beneficial. It must be supervised to teach kids proper form (technique) and to reduce the risk of injury.”

He also states: “Youngsters must have the emotional and physical maturity to absorb and put into practice the strength-training instructions. Elementary-school children do not have fully developed musculoskeletal systems, and they do not have the attention span nor the desire for strength training.” Therefore, in my opinion as a strength training teacher, I question the validity of beginning a program at 9-years-old.

If a boy or girl is adamant about lifting, I would start on safe machines initially and progress to closely supervised light-weight exercises with olympic bars.

In any case, the youth will develop confidence, lifting knowledge and a psychological advantage over other youngsters who have not been training.

I cannot believe that any child 9 years old or younger has reached puberty. Therefore, it is very difficult to build muscle. However, the mental aspects can be very beneficial.

**Dick Peterson:** A program for a 9-year-old should include both free weights and machines for optimum results. Select machines that accommodate or are designed for youth.

The program should consist of eight to 10 exercises performed three times per week, with at least one day of rest between sessions. Each exercise should be done for one set of 10 to 12 reps (1 x 10-12). After exercise techniques have been mastered and the young athlete can do the required reps with the selected weight, proceed to two sets, then to three sets of 10 to 12 reps. When starting, avoid using too much weight, but gradually increase the weight when appropriate.

When selecting exercises, choose those that work the legs, chest and back muscles, the prime movers for most sports. Second, select exercises that work the abdominals and low back because these are important but often neglected. Finally, as the program advances, choose exercises to work the remaining muscle groups: shoulders, arms and calves. Also remember great exercises like climbing rope, jumping rope, push-ups, etc.

Since Mr. Durso’s son is only 9-years-old, please remember the following two points. First, make sure your son does weight training, not weightlifting. Weight training is the use of less than maximum weight to condition the body. Weight-lifting, on the other hand, is a competitive sport in which the individual attempts to lift a maximum weight for one repetition. Second, keep the workouts as fun as possible. You are dealing with a young body and mind!

Suggested starting program exercises:

- Bench press
- Squat
- Dumbbell incline
- Leg curl
- Lat. pulldowns
- Hyperextensions
- Dumbbell rows
- Crunches
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