



Strength Training

The Sports Medicine Program at Children's Healthcare of Atlanta is one of only a few programs in the country dedicated to the well-being of young athletes. Our team of medical experts is available to diagnose and treat sports-related medical and orthopaedic conditions. Our comprehensive services range from the management of minor injuries to providing specialized care for the seriously injured youth athlete.

With the rise in the number of youth participating in competitive sports at younger ages, the issue of weight training and safety often comes up. Here are the answers to common questions regarding weight training and youth.

How old should my child be before he/she starts lifting weights?

- Children can safely participate in weight training (resistance training with weights) as early as seven or eight. This is the age where most kids have developed the balance and coordination to train safely.

Will children get stronger if the lift weights before puberty?

- Yes. Even though you may not notice an increase in muscle size before puberty, studies have shown that children can achieve 30 to 40 percent gains in strength from weight training. They do not have the pubertal hormones circulating before puberty, so the gains in strength occur from improvements in neuromuscular recruitment and muscle memory. Tasks usually get easier to perform if they are repeated. In other words, the muscles get smarter, not necessarily larger.

Can they injure their growth plates with weightlifting?

- Only if certain rules are not followed. Because the growth plates at the ends of the long bones are made of growing cartilage, they are not as strong as bone. The growth plates are susceptible to compressive forces and shear forces that may occur during very heavy lifts or "maxing out." Therefore, it is recommended that while the child is still growing (usually ages 16 to 17 in girls and 17 to 18 in boys), they should avoid single rep maximum lifts.

How often should they lift?

- They should lift 2 to 3 times per week, not on consecutive days. Workouts should consist of 2 to 3 sets of exercise focusing on the large muscle groups. Each set should contain 10 to 15 repetitions. When the child can perform 3 sets of 15 reps with relative ease, they can increase the weight 5 to 10 percent.
- They should incorporate 20 to 30 minutes of aerobic or endurance training into the workout and on off days.
- Remember to stretch between sets.



Is it safe for girls to lift weights? If so, will they develop large muscles?

- It is safe for boys and girls to train with weights. Before puberty, the strength gains in boys and girls are equal, but after puberty, the gains seen in boys are greater due to the higher levels of circulating testosterone.
- Because of the lower levels of testosterone, girls will not develop the muscle enlargement or hypertrophy seen in boys.

Is powerlifting or Olympic style lifting safe?

- Because these types of lifting involve lifting maximum amounts of weight, powerlifting and Olympic style lifting are not recommended until the growth plates close at the end of pubertal development.

Additional weightlifting tips:

- Never lift alone.
- Keep a workout log to monitor progress. Don't compete with your partner.
- Include a 10 to 15 minute warm-up and cool-down.
- Stretch, stretch, stretch.
- No gum chewing.
- Wear non-slip soled shoes.
- No jewelry.
- Exhale during reps. Do not hold your breath and NEVER hyperventilate before a lift.
- Stay hydrated before, during and after workouts.
- Proper form is more important than the amount of weight lifted.
- Remember that strength training should be one part of a general fitness program. Lifting weights alone will not make you a better athlete. Proper nutrition, hydration, rest, practice and technique are just as important for performance enhancement as building strength.

For more information, call Children's Sports Medicine Program at 404-785-6880 or visit www.choa.org/ourservices/sportsmedicine.