

CHILDREN HAVE A STRONG FUTURE

By Boyd Epley

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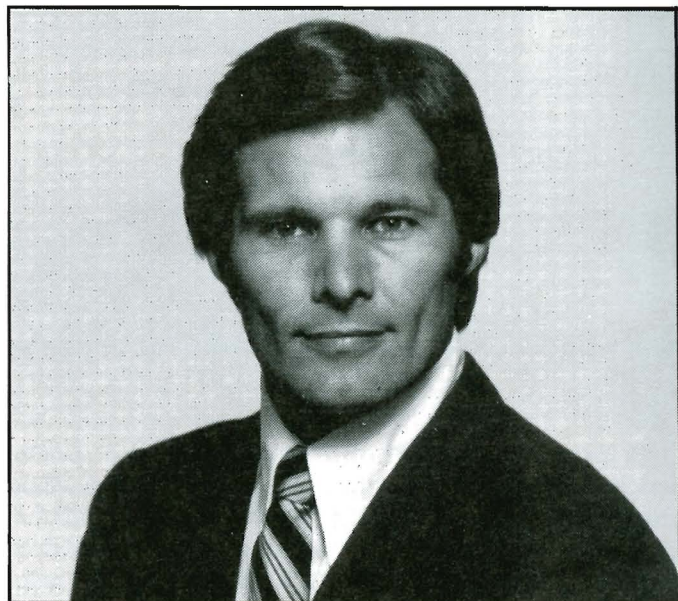
Coaches have learned that a good strength training program will increase performance in athletic competition more than any other factor. Strength training increases not only strength for athletes, but also their power, flexibility, and muscular endurance. These increases show in athletes who jump higher, run faster, and run for longer periods of time. The major questions are: At what age can young athletes begin strength training? What precautions should they take? and What benefits would the young athlete be able to gain?

Before we look at guidelines for the young athlete, we first need to clarify some terms. The term weight training is similar to strength training, however, the goal of a weight training program is improvement of fitness rather than improvement of athletic performance. You might think of a physical education class doing a weight training program for fitness while a football team would want a strength training program for strength. A strength training program is a much more advanced approach than weight training and includes such things as split routines and cycling to help athletes reach full potential. For the most part, the terms weight training and strength training have been used interchangeably without causing too much concern. Weightlifting, however, is much different from strength training or weight training and the difference needs to be pointed out particularly to young athletes. Weightlifting is a competitive sport in which the lifter is trying to see how much weight he or she can lift on a certain exercise rather than lifting to improve athletic performance in a particular sport. Powerlifting is another competitive sport in which the individual is trying to see how much weight can be lifted for one repetition and not necessarily trying to improve athletic performance.

CHILDREN NEED TO LIFT

The need to improve the strength and fitness of our American youth was further indicated in a 1985 school fitness survey conducted by the President's Council on Physical Fitness and Sports. The study which consisted of a nationwide survey of more than 18,800 boys and girls revealed that the physical fitness among American children has shown virtually no improvement in the last ten years and in some cases has greatly deteriorated.

- 40% of boys 6 to 12 cannot do more than one pull-up, one out of four cannot do any.
- 70% of girls tested cannot do more than one pull-up and 55% cannot do any.
- In a simple flexibility sit test, 40% of boys age 6 to 15 cannot reach beyond their toes.
- Approximately 50% of girls ages 7 to 17, and 30% of boys ages 6 to 12 cannot run a mile in less than ten minutes.



Boyd Epley is the Head Strength and Conditioning Coach at the University of Nebraska. With the help of his program, Nebraska football teams have finished with a national ranking in the top ten 17 years in a row. Epley is also a conditioning consultant for Reebok.

The President's Council on Physical Fitness and Sports also points out that only 36% of our American children are engaged in daily physical education in their school programs. To help remedy this problem, the President's Physical Fitness Award program has been given new dimensions. For the first time, in the twenty year history of the program, youngsters ages 6 through 9 will be eligible for the program. Previously, the program was limited to youngsters 10 through 17 years of age. "We've got to get youngsters involved and interested in fitness at an early age," said George Allen, Chairman of President's Council. "Those youngsters who start young are more likely to continue on an exercise program that will benefit them for life."

Coaches in our school systems throughout the country should take note that a good strength training or weight training program for children can help combat these problems and lead to a healthier generation for America.

INJURY vs PREVENTION

Most physicians in the United States have not recommended any lifting for prepubescents for fear of injury. The doctors have been especially concerned with damage to the epiphyseal disks, the growth plates on the ends of the long bones. The greatest fear has been the prepubescent participating in competitive weightlifting or power lifting.

Recent studies have shown that one of the major advantages of a strength training program is the preven-

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tion of injuries. It has been well documented that by strengthening the muscles, tendons, and ligaments, the athlete is less susceptible to the injuries most commonly encountered in their sport.

Until recently, it was thought that any lifting, even strength training, by a prepubescent would be ineffective because the hormones necessary to activate muscle growth are not present yet. A study done by Vrijens² in 1978, concluded that lifting weights had little effect on prepubescents. More recent studies have contradicted Vrijens. Studies done by Pfieffer and Francis³ and Sewall and Micheli⁴ have all shown that a prepubescent strength training program can and will improve the strength level significantly. The National Strength and Conditioning Association⁵ has released a position paper advocating strength training for the prepubescent starting at any age but guarding against competition or lifting for maximum attempts. An unpublished study done by American Athletics, Inc.⁶ in July of 1986 has also shown that strength training can be effective for the prepubescent. This study showed an average gain of 40 lbs. on one exercise in a six-week period for children ages 6-13 years.

Aside from the athletic benefits, there are some very important assets a strength training or weight training program offers a prepubescent that are not related to sports. The psychological advantage of improved self-esteem, improved body image, and increased strength cannot be overlooked. These factors can help improve self-confidence which is one of the major conflicts of an individual of this age.

GUIDELINES FOR PREPUBESCENT STRENGTH TRAINING

It was reported in the February issue of Physician's Sportsmedicine Journal that in August of 1985, eight major sport medicine groups participated in a strength training workshop in Indianapolis, Indiana.⁷ The workshop group agreed that strength training or weight training for prepubescent boys and girls is safe with proper program design instruction and supervision. They claimed the benefits of strength training or weight training outweigh the risks and also recommended that competition in weightlifting or powerlifting should be prohibited for prepubescents. The group included representatives from the American Orthopaedic Society for Sports Medicine, the American Academy of Pediatrics, the American College of Sports Medicine, the National Athletic Trainers Association, the National Strength and Conditioning Association, the President's Council on Physical Fitness and Sports, the U.S. Olympic Committee, and the Society of Pediatric Orthopaedics.

PRESCRIBED PROGRAM

1. Training is recommended two or three times a week for 20 - 30 minute periods.
2. No resistance should be applied until proper form is demonstrated. Six to fifteen repetitions equal one set, one to three sets per exercise should be done.

3. Weight or resistance is increased in one to three pound increments after the prepubescent does fifteen repetitions in good form.

The result of establishing these guidelines for prepubescent strength training will be far reaching.

FREE WEIGHTS vs MACHINES

Free weights (iron) are still the most effective means to gain strength and a safe program can be designed for children in a free weight facility. Proper form is critical to a free-weight program for both safety and effectiveness of the program. This is doubly important for prepubescents who are at a greater risk and usually don't have the motor coordination of someone older. The main advantage strength training machines have over free-weights is that they are safer. The movements are in a fixed plane which makes the job of the supervisor a great deal easier because form is not as critical and spotting is not as essential. The only machines that are sized for children at the present time are the FUTURE FORCE units made by American Athletic, Incorporated. Many more companies will soon be making equipment sized for children as the word spreads that children can begin weight training at any age.

SUPERVISION IS THE KEY

Supervision is especially important when working with young students because the motor patterns and habits they develop now will more than likely stay with them throughout their lifetimes. It is the job of the coach to make sure that each student has proper form on each exercise and that no "horse play" is carried on while in the strength training facility. If the facility is a free-weight facility, it is also necessary for the coach to teach the students proper spotting techniques so they can work with each other and have a spotter at all times. This places a great deal of responsibility on the coach whose importance cannot be overemphasized.

CONCLUSION

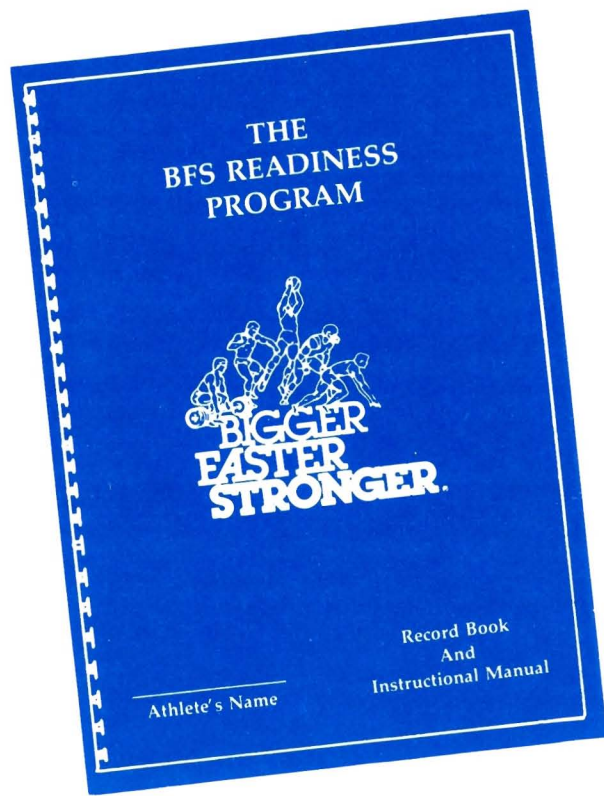
The fitness craze in this country that has millions of adults going to health clubs is now reaching our children. Coaches in our school systems throughout the country hold the key in providing guidance for these children. Proper instruction can provide a lifestyle with many benefits for our youth. Even though the experts are saying that children can begin weight training at any age, be sure they are emotionally mature enough to accept the discipline involved. Be sure they have the attention span to complete the series of exercises and to train on a regular basis.

Weight training for children can lead to a healthier generation for America but let's remember to keep it fun for the kids.

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Dr. Greg Shepard, BFS President

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