



The Safe Way to Get America's Youth in Shape

Strong solutions to a growing fitness crisis

Physical education departments in middle schools are facing a twofold problem: Fighting widespread childhood obesity while dealing with a staggering increase in injuries in PE programs. BFS has the answer: the BFS Readiness Program and BFS Hydraulic Line.

First let's talk about physical education, looking at a research study published in the journal *Pediatrics*. From 1977 to 2007, injuries in physical education classes increased by 150

percent; the majority of these injuries were to middle school children. When children are injured or have a history of injuries, one administrative response is to remove these children from physical education classes or place them in especially low-risk activities, such as walking. Unfortunately, a Band-Aid reaction like this may make the problem worse.

One goal in physical education classes is to prepare children for more complex skills and sports competition. If the children are not prepared, they

quickly become frustrated and quit – some even sustain serious injuries that could have been prevented with proper conditioning. Although it's difficult to obtain accurate statistics, one study sponsored by the Women's Sports Foundation estimates that 27 percent of girls and 29 percent of boys quit playing sports due to a health problem or injury! This is unacceptable – let's see what can be done.

The first step is the BFS Readiness Program. At BFS we believe that the

best time to start teaching proper techniques in weight training and spotting is in middle school. That way, when these young athletes enter high school and a coach determines on an individual basis that they are physically mature enough to lift heavy weights, heavy lifting can be performed safely. In addition to learning techniques of basic weight training exercises, such as squats and power cleans, kids should be involved in conditioning programs that include running, jumping, stretching and agility exercises. BFS has established guidelines for this type of foundation training – they are the core of the BFS Readiness Program.

While participating in the readiness program, students also can engage in circuit training exercises with machines. Machines enable them to work all major muscles safely, and work around injured areas. You might say that machines ensure that in physical education “no child will be left behind.”

The Circuit Training Solution

The concept of circuit training was introduced to the sports science community in 1953 by physiologists at the University of Leeds in England as a way to integrate several components of fitness.

Rather than performing all sets of an exercise before moving to another, with circuit training the trainee performs only one set of an exercise before moving on to the next exercise in the series, or “circuit.” For example, one circuit could consist of performing 10 repetitions of bench presses, 10 repetitions of leg presses, then 10 repetitions of chin-ups. Some years after circuit training came on the scene, it became even more efficient with the development of weight stacks that enable trainees to change resistance by moving a pin rather than changing weight plates. The BFS Selector Circuit is an example of such an arrangement of exercises.

In the 1960s, circuit training hit it big as high schools and colleges purchased the revolutionary jungle gyms that consisted of several workout stations. PE instructors could hold a class and, usually with the help of a whistle to signal

when to change stations, have the entire class of students exercising at once. As for circuit training’s effectiveness, in a study published in the September 2011 *Journal of Strength and Conditioning Research* that compared circuit training to conventional strength training, researchers reported that the circuit training program was more effective in decreasing body fat even though circuit participants completed their workouts nearly twice as fast as the conventional group.

Although machines with selectorized weight stacks can be used safely with young athletes who are properly supervised, the absolute safest

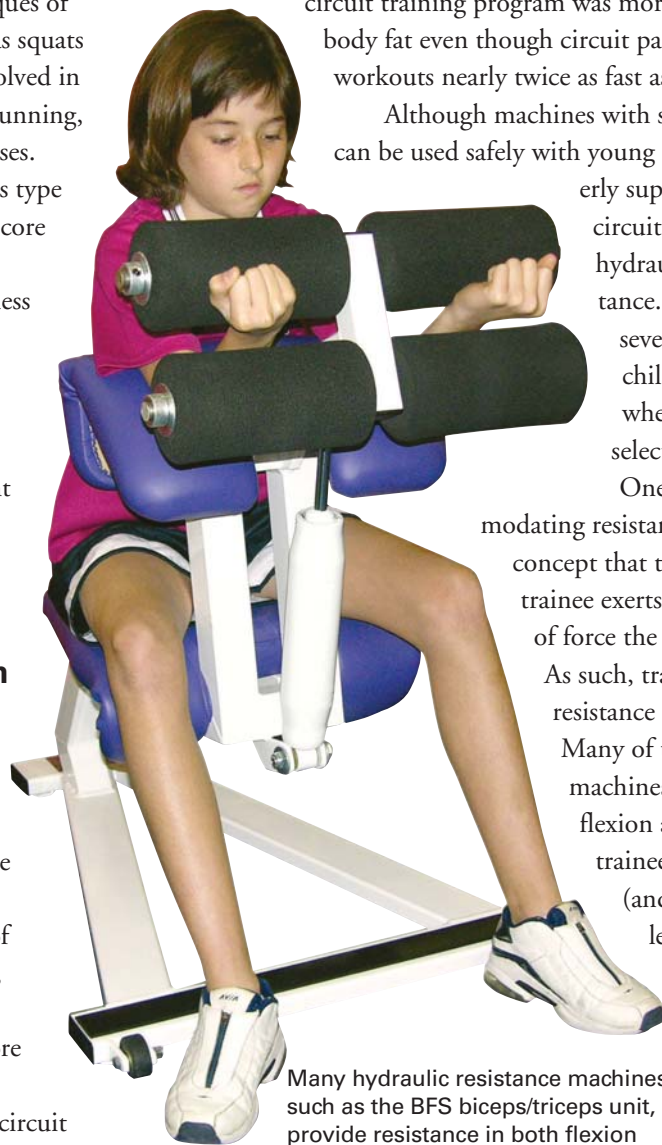
circuit training machines use hydraulic fluid to create resistance. Hydraulic resistance offers several important benefits for children that are not available when using free weights or selectorized equipment.

One benefit is self-accommodating resistance (SAR), which is the concept that the amount of force that a trainee exerts on the lever is the amount of force the trainee receives in return. As such, trainees will not encounter a resistance beyond their strength level. Many of the BFS hydraulic resistance machines provide resistance in both flexion and extension, enabling trainees to perform more exercises (and thus more total work) in less time. For example, when using the BFS biceps/triceps unit, the trainee bends their arms and their biceps encounter resistance; when they straighten their arms to return to the start, their triceps will get work.

Many hydraulic resistance machines, such as the BFS biceps/triceps unit, provide resistance in both flexion and extension, allowing more work to be performed in less time.

The advantage to instructors is that they do not have to ensure that the appropriate amount of weight is used for each student in each exercise, as would be necessary with selectorized equipment. The instructor simply sets a goal number of repetitions for each machine or a time limit, such as 30 seconds per exercise.

One popular circuit design has the trainee begin with the hardest exercises/largest muscle groups, working down to the easier exercises and smaller muscle groups. Using our



complete line, here is how such a circuit could be arranged:

1. Squat Press
2. Leg Extension/Curl
3. Ab/Ad Hip
4. Abdominal/Low Back
5. Chest Press/Row
6. Vertical Row/Chest
7. Shoulder Press/Lat Pull
8. Upright Row/Triceps
9. Biceps/Triceps

This arrangement is good, but with a class this means that only the first student would be using the exercises in the optimal order. Rather than having students wait in line, using the same nine machines an instructor could develop three “mini-circuits,” each starting with a lower body exercise followed by upper body exercises, as follows:

| Circuit #1 | Circuit #2 | Circuit #3 |
|--------------------------------|----------------------------|-------------------|
| 1. Squat Press | 1. Leg Extension/Curl | 1. Ab/Ad Hip |
| 2. Chest Press/Row | 2. Vertical Row/Chest | 2. Ab/Lower Back |
| 3. Shoulder Press/ Lat Pull | 3. Upright Row/ Triceps | 3. Biceps/Triepps |

If your budget is tight, just start with a few machines and add additional machines as your budget permits. For example:

1st Purchase

- Squat Press
- Chest Press/Row
- Ab/Lower Back

2nd Purchase

- Leg Extension/Leg Curl
- Shoulder Press/Lat Pull
- Upright Row/Triceps

3rd Purchase

- Vertical Row/Chest
- Ab/Ad
- Biceps/Triceps

Rather than stand by as the physical fitness of America’s youth continues to decline, we need effective, proven alternatives in place to build strength and improve body composition. BFS can help. We can help you teach young students proper lifting techniques so that when they are physically and emotionally mature enough to pump iron, they can do so safely. **BFS**



Hydraulic machines offer a safe form of training because users will not encounter a resistance beyond their strength level.



Chest Press/Row
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Vertical Row/Chest
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**Shoulder Press
Lat Pull**
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Bicep/Tricep
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**Abdominal
Low Back**
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Leg Extension-Curl
\$1295
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Ab/Ad Hip
\$1295
l-54" w-48" h-48"

Upright Row-Tricep
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TRAIN SAFELY WITH THE MIDDLE SCHOOL CIRCUIT

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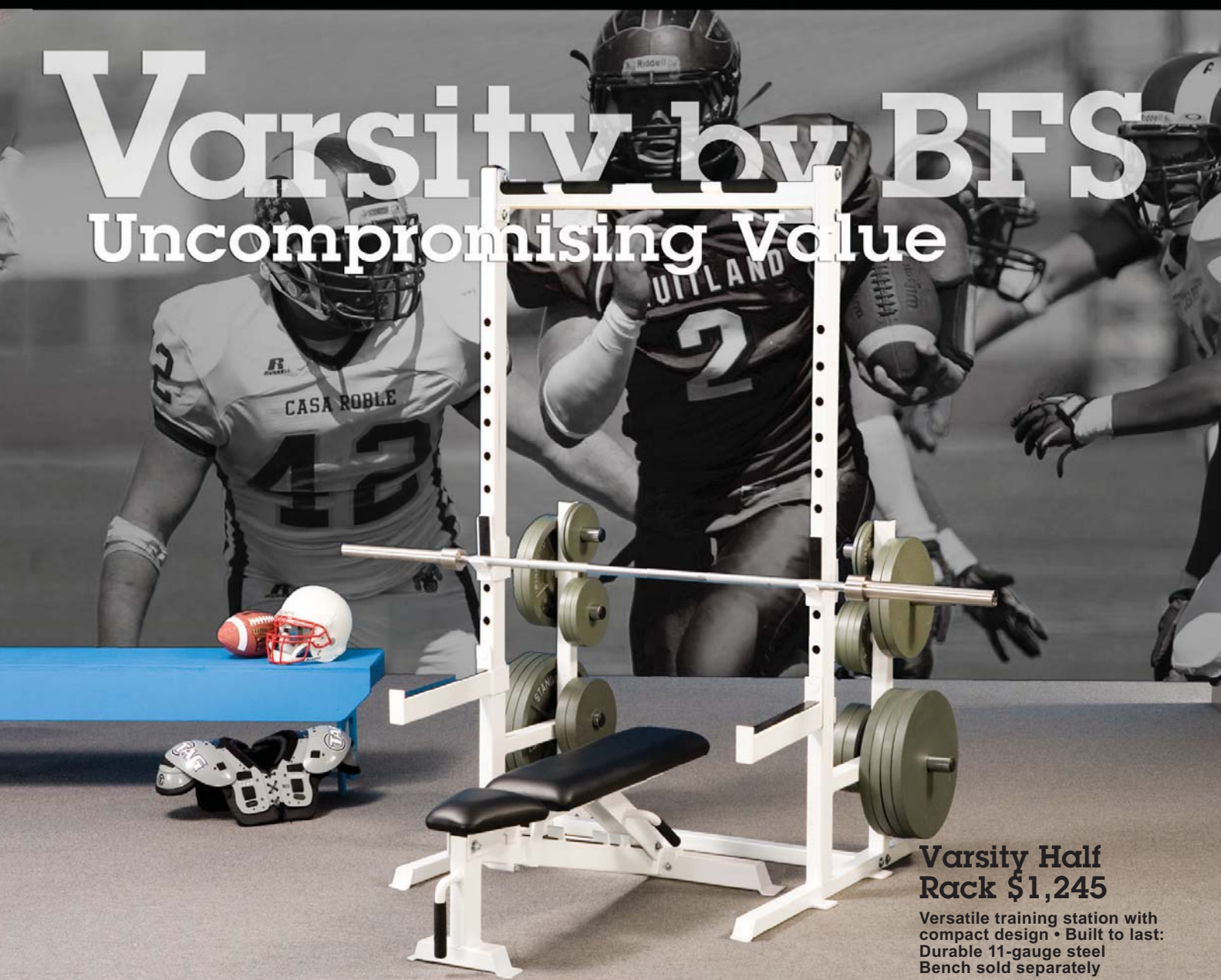
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Varsity Olympic Bench
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l-49" w-48" h-47"



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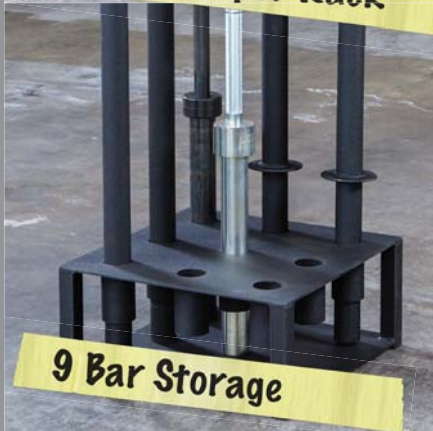
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| | |
|-------------------------|-------|
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GET STARTED

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Call a BFS coach at 800-628-9737 with any questions and we can get your weight room started today!

BIGGER FASTER STRONGER



DEDICATED TO HELPING ATHLETES SUCCEED SINCE 1976

BXI Series is 3" x 3" steel proudly designed and manufactured in the USA

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