A NEW ISOTONIC EXERCISE PROGRAM
FOR CHILDREN AND ADOLESCENTS

After the success of Switching®, launched in 2001, at TECA we have unveiled a new isotonic exercise program specifically for children and adolescents. Our experience and ongoing research have now merged to produce Gymboy®, a circuit training system tailor made to the needs of preadolescents and adolescents.
Gymboy consists of ten isotonnic machines providing a standing workout and simulating the natural push and pull movements of everyday life, play and sport.

Performing the exercises standing up, the unique feature of Gymboy, enhances muscle synergy and develops the sense of balance. The standing workout temporarily puts you in a position of disequilibrium which is countered by the action of the agonist, antagonist, synergist and stabilizer muscles, calling on the large kinetic chains.
Gymboy also requires increased focus and strength to adapt and maintain the position of the body during the exercise: scientific research has shown that in just a few weeks, this kind of training produces **beneficial neuromuscular effects for an adolescent's perception of his or her own body**, and hence also for **posture**, which is a particularly delicate issue during development. Enhancing body image and posture means preventing incorrect carriage and body positions (paramorphisms) which could lead to subsequent bone growth pathologies (dysmorphism) the likes of scoliosis, kyphosis or hyperlordosis. Standing up, the strain on bones and joints is less than when sitting down.
Gymboy can be used with a variety of different circuit training programs which can in turn be varied and customised to fit the individual needs of educators, trainers and rehabilitation therapists.

With Gymboy, strength, muscle resistance and cardio-respiratory performance can all be improved at the same time. The full range of motion in each exercise guarantees the flexibility of joints. Performing the exercises to music also boosts the sense of rhythm.
In addition to our physical development studies, at TECA we have also looked closely at educational and formative issues. Educators and child development experts recognize the indisputable role of play in educational methodology.

With Gymboy, preadolescents (age 8 - 14) can now get their first fun taste of gym equipment, custom built to their specific requirements. Young people are immediately drawn to machines, wanting to try them out and imitate what they see adults doing. Gymboy builds the strength and ability they are interested in developing and naturally try to enhance through play in order to "grow big and strong". Getting their attention won't be difficult with Gymboy.
The group is also a key element in this context thanks to the social relations and interactions that are encouraged as the children move together from one machine to the next to the beat of a good piece of music, making it as fun and enjoyable as a game of ring-a-ring-o'roses.

Gymboy helps young people to grow up healthy and strong through simple, fun exercises that most importantly, are also very safe and very effective.
Gym Boy for an overall workout

Up to age 12, preadolescents need to be **physically fit in general, both aerobically and in terms of resistance**, and any specialist sports training would not be recommended. Any form of training, which should always be presented as a form of play, should focus especially on developing **coordination skills** (balance, combination of movements, orientation in space, control and adaptation, rhythm, fine dexterity, and so forth), as well as **conditional abilities** (strength, speed and resistance). Many experts claim that the foundations can be laid for later strength training as early as age 10-12. This is especially true for young people entering puberty earlier, as they are ready to give multilateral strength training with weights machines a try.

**Gymboy can be considered an excellent resistance-strength training tool that reflects the needs of adolescents during puberty.**
Fitness programs

It’s during the preadolescence years that a child's motor skills and joint motion improve the most.

The more motor skills acquired, the easier it will be for them to later acquire specific forms of movement and the higher the performance they will subsequently achieve.

Fitness programs for children and pre-adolescents must cover a broad-spectrum of exercises: whilst the focus may be on a specific form of movement, they should provide a more general kind of training.
Gymboy is both an isotonic circuit and an interesting new concept in preparing young people for sports typically practiced in adolescence. Its various different training programs can be customised to the particular sport and posture of each individual athlete, making it possible to improve specific conditional abilities and regularize or compensate for any imbalances caused by asymmetrical sports (such as tennis or volleyball), or by the excessive repetition of individual athletic movements that could alter the balanced development of the young athlete.

Gymboy provides all the positive benefits of the kind of training most suitable to young athletes, improving **aerobic conditioning**, **strength** (using low weights and a large number of repetitions) and **static/dynamic body control**: static by maintaining the correct position during the exercise, and dynamic during the isotonic part of the workout.

Gymboy is used both to perfect the skills required in a particular sport and also to provide a general strengthening program for young athletes; and given that the circuit is performed with
team-mates or friends, it is also a social activity with an element of fun as well. It encourages children to mix in a form of play that is essential to the preparation of young athletes.
Gymboy for physical sports training

Circuit training produces significant results in terms of both **muscle strength** and **resistance** at the same time, with notable improvements in cardio respiratory strength and resistance.

When Gymboy is used as a means of preparing physically for a particular sport, the exercises can be adapted to develop the specific skills needed for that sport, depending on the importance of strength, muscle or cardio respiratory resistance. Gymboy reproduces the natural push and pull movements used in the athletic gesture, working the same muscles as those used in the sporting activity. Its workouts can be customized to fit the specific requirements of the child or adolescent.
Gymboy for rehabilitation

Gymboy provides an ideal workout for children and adolescents, especially when personal characteristics, safety problems or physical rehabilitation needs rule out the performance of intense exercises using heavy weights. Experts even include strength training in rehabilitation programs for young children.

A paper published recently in the Physical Therapy Journal (April 2007) describes a case report featuring a 5-year-old child with poor body awareness and developmental coordination disorder. On completion of the 12-week strength training program, improvements in muscle strength, motor function and proprioceptive skills were seen. Research has shown that muscles provide information on the position of our limbs, making them essential to proper posture. Improvements in muscle strength witnessed in children are the result of neuromuscular adaptations, hence a strength training program can contribute to changes in one's sense of body position.
Another article (Physical Therapy, November 2005) describes a 14-week fitness program sustained by a group of nine disabled children aged 5-9. By the end, various improvements were seen and there were no adverse effects or injuries. This kind of therapeutic experience, claim the authors, proves that a strength and endurance training program is both safe and effective for disabled children as it can improve their quality of life. In other cases, fitness programs were used to rehabilitate children with nervous system disorders, autism, coordination or other developmental disorders. Experts claim that strength and endurance training are key parts of a fitness program for disabled children. Such exercises can also help to boost the self-respect and self-confidence of children and adolescents.
One circuit, lots of sports

SWIMMING

Circuit training not only develops global skills such as balance, posture, strength and resistance (essential for any sport), the particular exercises practiced simulate the push and pull movements (see chest press, rowing, tractions, legs) that are important for swimmers, thereby helping them to strengthen the muscles in their shoulders, arms, abs, glutes and overall upper body.

Gymboy develops good technique in a short time.
ATHLETICS AND RUNNING

Circuit training generates significant results in terms of both muscle strength and resistance, with notable improvements in cardiovascular strength and resistance at the same time. Depending on the running distance to be covered, Gymboy provides specific training programs that focus more on muscle strength or cardiovascular resistance. For example, a young sprinter training for 80m or 100m events would benefit from squat type lower-body thrusting exercises or lunges. This is possible with Gymboy when the equipment is used in the full range of motion, focusing on legs or lunges in low-weight exercises carried out in total safety.

For distance running or cross-country, less sets can be done with quicker changeovers from one station to the next and more free-weight exercises in between.
FOOTBALL

Speed, strength, power and resistance are the specific skills needed, all of which can be improved through gradual training, i.e. just what Gymboy provides. What's more, working on circuits, the team can work together tactically and synergically.

VOLLEYBALL

In addition to the basic skills required for any sport, volleyball also requires jumping ability. Jumping ability means the force generated by the lower body to perform a movement in which the whole body leaves the ground; as well as strengthening the feet, legs and thigh muscles (increasing force), volleyball training also features drills to improve flexibility and the range of joint motion; all of this is possible on the Gymboy circuit.
SKIING OR PRE-SKI TRAINING

In cross-country training, the most aerobic of exercises par excellence, the predominant physical skill is resistance of both the upper and lower body. The Gymboy circuit is an excellent way to prepare for this sport as it provides: aerobic conditioning as the athlete moves from one station to the next in quick succession, specific strength training as the athlete pushes and pulls from the standing position, i.e. the same position used when skiing, and static/dynamic training of the trunk stabilizer muscles. An interesting feature is that exercises can also be done on one foot or on one side at a time to improve any imbalance in general technique, such as the force of the arms in each stride in cross-country skiing.
Gymboy in Fitness Clubs

Gymboy gives club managers a new service to offer a huge and still untapped target audience: preadolescents and adolescents. As well as attracting more users in this age group, Gymboy is also a useful service for parents too. Instead of just taking their children to the gym, they can join them and workout at the same time, making better use of their time in the process.
With the expert help of a number of professionals, a wide range of additional services and initiatives can be organised and advertised, such as:

- Regular evaluation of physical development (height, weight, agility) and posture, with specialist medical advice where required.
- Prevention and rectifying of typical postural problems often emerging during adolescence (kyphosis, scoliosis, lordosis).
- Exercise groups split into different age groups.
- Private/group interviews with psychologist.
- Educational talks on issues concerning adolescents (eating disorders, bullying, drug and alcohol abuse, nutrition and weight problems, etc.).
- Fairs and games, tournaments, entertainment.
- Cultural and artistic events.
- Events featuring special guests (professional athletes, trainers, artists or local celebrities).
The club's focus on young people will be noticed and appreciated by the adult population. Aiming to meet the needs of adolescents represents a means of enhancing the club's image with activities of notable social, educational, and you could also say cultural value too.
Just 15 minutes of physical activity a day is all it takes to reduce the risk of obesity in children by half

This claim was recently made by researchers at the University of Bristol, led by Andy Ness, in a study published in the online journal PloS Medicine. Ness and his team's research was based on growing concern over the increase in child obesity. (...) The research project involved 5500 12-year-old children who were asked to spend 25 minutes a day in moderate or vigorous physical activity, such as football, swimming or cycling. The results showed that this amount of physical activity reduced the risk that the children taking part in the study would end up as some of the fattest in the country.

"We found a strong inverse correlation between physical exercise and obesity, especially in boys" concluded the researchers, adding that the intensity of the exercise was seen to be more important than the total time spent exercising.

Recommendations of the American Academy of Pediatrics

Parents often ask their GPs how safe and effective weight training actually is for their children. The American Academy of Pediatrics (AAP) Committee on Sports Medicine and Fitness issued a report on this subject. After close examination of research published in key international, scientific journals, they laid down a number of guidelines and advised on the potential risks and benefits of strength training for children and adolescents.

The Committee of the AAP sustains that strength training is a common component of sports and physical fitness programs for young people and that some adolescents and preadolescents may use strength training as a means to enhance muscle size and definition or to simply improve appearance. Strength training programs may include the use of body weight or free weights, weight machines and elastic tubing. These methods are undertaken to improve sports performance and to rehabilitate injuries. Studies have shown that strength training, when
properly structured (frequency, mode, intensity, and duration of program), can increase strength in preadolescents and adolescents. In preadolescents, proper resistance training can enhance strength without concomitant muscle hypertrophy. Continuing in their statement of the potential benefits, the American Academy of Pediatrics claims that strength training can also augment the muscle enlargement that normally occurs with pubertal growth in males and females. On the basis of the research the Committee reviewed, it emerges that strength training programs do not interfere with linear growth and do not harm the cardiovascular system.
American Academy of Pediatrics' guidelines

- A **medical evaluation** before commencing a formal strength training program can identify possible risk factors.

- If children or adolescents undertake a strength training program, they should **begin with low-resistance exercises until proper technique is learned**. When 8 to 15 repetitions can be performed, it is reasonable to add weight in small increments.

- Exercises should include **all muscle groups** and be performed through the **full range of motion** at each joint.

- To achieve gains in strength, workouts need to be at least 20 to 30 minutes long, take place a minimum of 2 to 3 times per week, and continue to add weight or repetitions as strength improves. There is no additional benefit to strength training more than 4 times per week.
- Strength training programs should include an initial warm-up and final cool-down component.

- Preadolescents and adolescents should avoid competitive weight lifting, power lifting, body building, and maximal lifts until they reach physical and skeletal maturity.

The American Academy of Pediatrics concludes that strength training programs for preadolescents and adolescents can be safe and effective if **proper technique and suitable safety measures are adopted**.

*Which is exactly what Gymboy aims to do!*
Everyone mad for Gymboy in Germany

April 23rd, 2007. A notable 14% increase in the number of exhibitors, and more professional and international visitors: FIBO 2007 proved itself Europe's number 1 fitness and wellness event. More than 45,000 visitors, a 4% increase in trade professionals (from Eastern Europe and Asia in particular, but also from Spain, Italy and France) and en masse consumer attendance when the show opened its doors to the public. The 438 exhibitors from 35 different countries saw a major reawakening of international demand. Against this backdrop, Teca, in the fitness business for more than 20 years, was a resounding success.
At this year's FIBO, Teca got its message across, loud and clear. In more than 400m² of exhibition space, the company not only re-launched the products that have already won Teca great international acclaim (Cardio, Switching®, the first system of isotonic machines for a standing workout, Prestige for the isotonic area), it also attracted the attention of professionals and fitness enthusiasts thanks to Gymboy, the exclusive new isotonic machine circuit designed specially for children aged 8 to 14. Gymboy equipment provides a simple but fun way to exercise that is both effective and safe.

A lively group of children demonstrated this as they exercised to music on many occasions during the four-day show, all of which were ‘standing room only’ events.