Postural Education with T-BOW®

The T-BOW® is a multifunctional bow for education, training and movement therapy. Ideal for group sessions and personalized training. Sandra Bonacina is the creator of the T-BOW®, a training tool that she has developed together with Víctor Denoth, both university professors of physiotherapy, fitness and training at the Institute of Movement and Sports Sciences at the University of Zurich (Switzerland). The T-BOW® is made of wood or synthetic fiber HDP, covered with a mat on the convex part and with a slightly grainy layer on the concave part.

It is easy to transport, light, very manageable, non-slip, stable and stackable in a very small space. Openings on the edges allow easy attachment of T-Bands or elastic bands. It can be used from both sides, it allows training in a very small space and its multifunctionality favors the comprehensive training of coordination, conditional and cognitive abilities.

The concepts of postural education described here, as well as their implementation with the T-BOW®, are based on the philosophy and practical methodologies of the teacher of teachers in human movement skills, Francisco Seirulo Vargas (www.entrenamientodeportivo.org).

Concepts about Postural Education

Posture is a consequence and a manifestation of each person's body scheme. The body scheme is the knowledge, which is progressively completed, of our body at rest and in movement, perceiving its parts and the whole, as an instrument of our relationship with the environment. This knowledge is structured or manifested at 3 levels:

- Somatognosia: knowledge of sizes, shapes, dimensions, etc. of my own body (perceptual level).
- Mechanognosia: knowledge of how my body works in movement (behavioral level).
- Iconognosia: knowledge of my body image and meaning of my body (significant level).

We globally live the knowledge of the 3 components of the body scheme. These components balance each other and form a functional unit that constantly interacts. Our body scheme, and posture as its manifestation, have more or less value in our lives at different times. It is always influenced and depends on the cognitive, affective and emotional aspects of each person.

The knowledge of our body by parts in an analytical way (laterality) or integrating all the parts into a whole (attitude) will be facilitated and favored by good relaxation and breathing, at all levels of the body scheme (somatognosia, mechanognosia and iconognosia).

Attitude is the body posture that is established and modified throughout life as a result of the action of external and internal agents on the structure of our body.

External factors:

- **Continuous action of gravity** (constant changes and force the balance).
- Use of utensils (transient modifications and deterioration of osteo-articular mechanics with possible incorrect development of muscle tone).
- Customs and social habits (transient modifications and possible deterioration of correct hygienic-postural habits).

Internal factors:

- Hereditary (permanent and little modifiable).
- Emotional situations (permanent or transitory that modify posture).
- **Muscle tone** (constant relationship between the muscular and nervous systems).

Movement education tries to improve and solve the problems caused by **muscle tone** and the **action of gravity** on our body. Each postural situation requires a different tonic state. The rest tone, attitude tone (pre-action posture) and action tone are distinguished. Postural tone is the sum of resting and attitude tone. The result of our action on gravity is static or postural balance and dynamic balance or rebalancing.

We distinguish some trends or perspectives in relation to postural education:

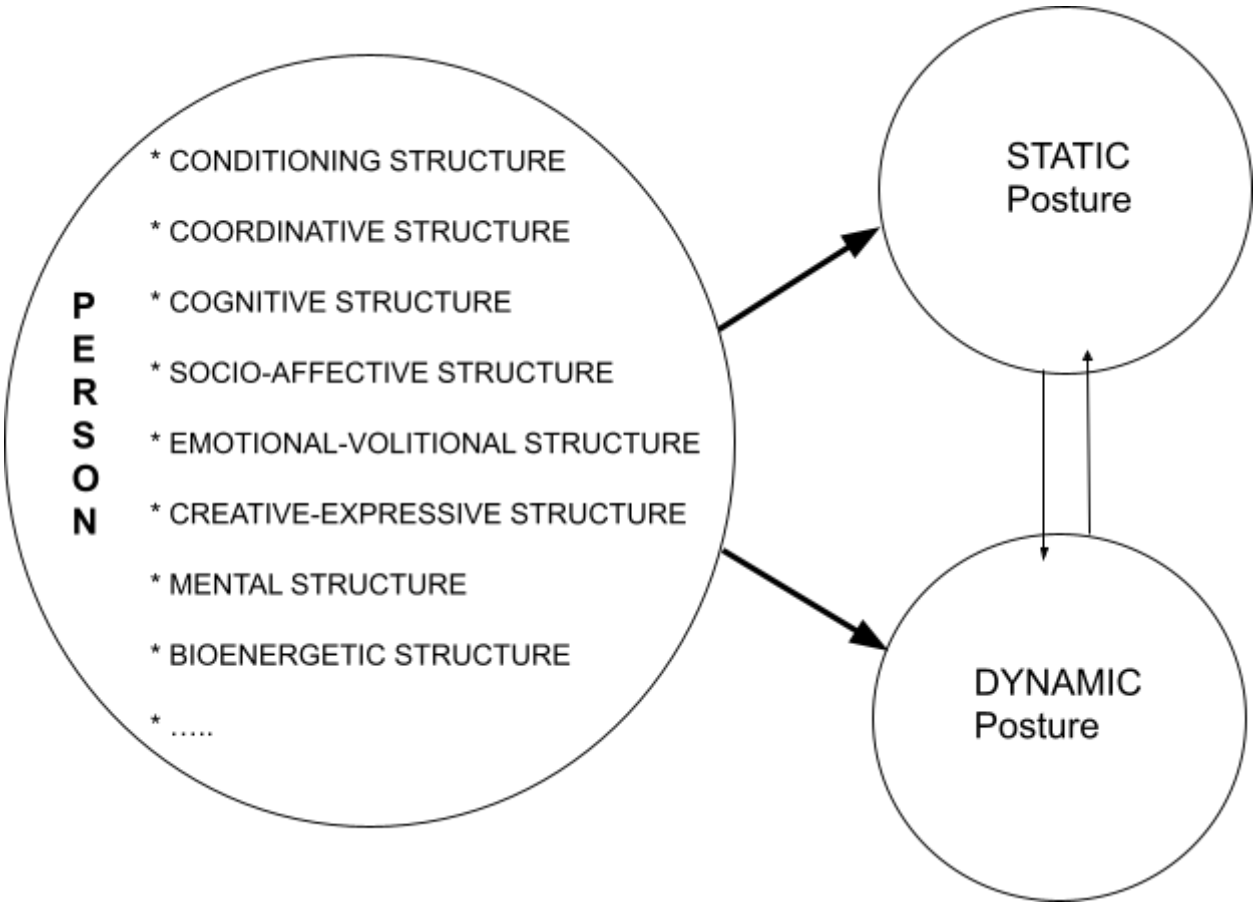
- Hygienic-reeducational (postural health in daily life and work, and reeducation of postural problems).
- Expressive-creative (the posture in aesthetics, shows and sports).
- Educational (postural education in school and life, and adjuvant suppressive training in sports).

Integrating the three trends, we select the specific resources of movement education-training for the development of postural education:

Body schema education (laterality and attitude) and its facilitating factors (relaxation and breathing). At the level of postural attitude, we highlight the means to act on the muscular tone and action of gravity: balanced muscle development (antigravity muscles and the rest), maintenance of joint mobility (flexibility and elasticity), knowledge and practice of the relationships between the center of gravity and the base of support (balance at a segmental and global level), education of breathing and relaxation.

We emphasize the relaxation that we improve through the improvement of the perception capacities and the improvement of the tonic control. Both from a static perspective through attitude and from a dynamic perspective through dynamic coordination, at a segmental and global level.

Suppressive adjuvant training: improvement of the basic coordination capacities of the body areas that preferentially intervene in the specific techniques, equilibration of the muscular balance in the most important protagonist-antagonist groups of the preferred techniques, tendinous-articular unloading, joint mobility, muscle elasticity and mechanical understanding of specific techniques.



Continuing with the application of master Seirul·lo's concepts, in order to achieve holistic postural optimization, preferential interactions must be developed among all the structures that constitute the person, both in static situations and in dynamic situations and the linkages between both.

Postural Education with the T-BOW®

From the specific resources of movement education-training, we have selected some practical and special examples of postural education that can be developed in a differential way with the T-BOW®. Its orientation is focused on obtaining good postural health in the field of fitness and wellness, to collaborate effectively with the overall health of the person.

We will focus on the alternatives that make the T-BOW® extraordinarily exceptional: its training possibilities for static and dynamic balance situations when used on its concave surface (unstable rocking position). Another level is to place one T-BOW® on top of the other (convex surfaces in contact or concave surfaces in contact) to achieve more swing amplitude and inertia.

The differential actions with their infinity of options are the swings (longitudinal and transverse) seated and with individual support of feet or hands, and the swings in simultaneous support of feet and hands.

Examples of postural education exercises with the T-BOW® in unstable rocking position (static and dynamic balance in rocking situation):

- Activity of the arms during rocking on feet, sitting or on all fours. Activity of the legs during the balance in support of hands or arms. E.g. during swing: simultaneous, asymmetrical and alternate movements of arms/legs; segmental accelerations and decelerations; segmental ballistic actions followed by pendulum; complete the movement of one arm/leg with the counterpart; undulating segmental movements.
- Differentiation activity of the hip, trunk, shoulder girdle or head during a swing on feet, hands, sitting or on all fours. E.g.: fix all the parts except one that we mobilize (lateral and frontal inclinations of the trunk, rotations of the trunk and shoulder girdle, mobilizations of the hip and head).
- Rocking dynamic sequence on foot support and adopt a static posture. E.g.: from the swing, static balance on the T-BOW® in semiflexion of the legs with arms extended upwards.

- Rocking sequence in support of hands with the body extended and adopting a static posture. E.g.: from the swing, static balance on the T-BOW® with extended arms and with the support of only one foot.
- Passing from one balance posture to another, varying the forms of support. E.g.: from longitudinal swing on feet, to a transverse swing posture.
- Sequences of changing posture by varying the number of supports. E.g.: from longitudinal quadruped rocking, to triple support rocking (without one foot), to double support rocking (foot-hand), to one support rocking (one foot) changing feet in front and behind.
- Adoption of a postural static balance prior to a swinging action. E.g.: balance in push-up on the transverse T-BOW® and transition to a swing of the arms with the body extended, alternating lateral movements of the legs. Competition games to achieve a certain number of swings are interesting options.
- Interiorization of balance postures through work in front of a mirror and musical stimulation.
- Adoption of different static postures during different swing sequences. E.g.: seated rocking and stopping with arms up, more rocking in support of hands in facial bridge position and stop in dorsal bridge position.
- Progressive passage from a global movement to a local one. E.g.: successive steps from rocking on feet to maintaining balance while one arm rotates.
- From a balance on the feet (on hands, mixed or seated), create unbalanced situations (e.f: sudden turning action, receiving a weighted ball, fighting with an opponent with/without a stick or ball, jump...) and then getting a static equilibrium situation.
- Distinguish amplitudes of the swing in support of feet/hands with the amplitude of the movement of arms/legs. E.g.: short foot swing and wide arm swing.
- Discriminate swing speeds in support of feet/hands with the speed of movement of arms/legs. E.g.: slow foot swing and fast arm swing (example: 2/6).
- Maintain the same rate of respiratory function for a swing at slow, medium or fast speed; or vice versa.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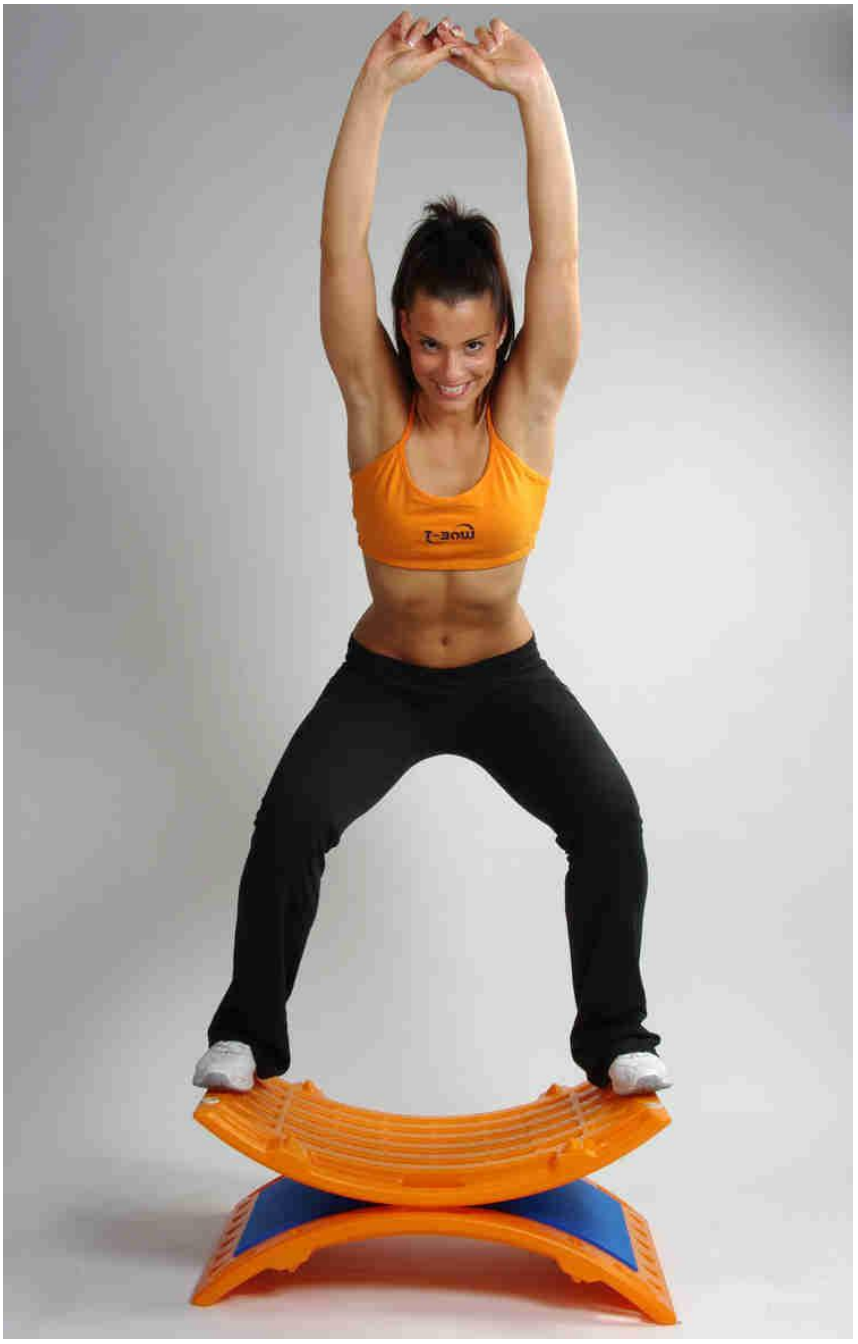
All the previous examples can also be applied to some of the most differential and unique situations that can be achieved with the T-BOW®: combination of the swing with the T-BOW® with the actions of the arms (and to a lesser extent also of the legs) with the T-Band (elastic bands). In these circumstances, the richness of postural education increases significantly when we combine and alternate the following parameters:

- Legs in static balance or dynamic balance.
- Arms in static balance or dynamic balance.
- Arm actions with the T-Bands in static or dynamic conditions.
- Leg actions with the T-Bands in static or dynamic conditions.

E.g.: transverse rocking on the feet and lateral dynamic actions of the arms with the T-Band, to move to a static posture with relaxation of one arm and keeping the other in static tension above, and then continue with the dynamic rocking of the feet while relaxing the last arm and a dynamic action of the other starts. These concepts are equally significant and differential, when during the swing with the T-BOW®, instead of the T-Bands we use other mobile tools such as dumbbells, bars and balls.

From a therapeutic point of view, the T-BOW® is used to stabilize the foot and knee joints. Prophylactically performed swings reduce the hyper-extension of the foot joints and prevent inflammation of the periosteum (periostitis) in the legs or inflammation of the Achilles tendon.

Likewise, the outward pressure and the external rotation of the knees favor a functional screwing of the longitudinal axis of the leg. Stabilization work promotes a straight longitudinal axis of the leg and optimal loading of the leg joints. It is especially suitable for O or X-shaped legs (genu varum and varus) and for knee problems. Through regular training, pain in the foot and knee joints can disappear.



Maintaining balance, using the T-BOW® as a rocker, requires work to stabilize the legs, trunk and shoulder girdle, and also strongly activates the back and buttocks.

The asymmetric exercises, which acquire a special richness and precision during swings, also allow the activation of deeper muscle groups and the smaller intervertebral muscles. Using the convex surface of the T-BOW® (step position) there are also very practical and interesting options for postural education; especially when working with T-Bands on both sides or moving tools is associated with it.

On the other hand, the arch shape allows for anatomically correct core training. The trunk can be strengthened at different levels, selectively mobilizing different segments of the spine.

New alternatives to apply the exercises aimed at postural education are possible by placing a T-BOW® on top of another by its concave sides so that we achieve a dynamic arched surface, or by combining the balances and rebalancing between a T-BOW® in step position and another in rocker position.

Finally, these exercises with the T-BOW® must be carried out simultaneously including the optimization of cognitive, affective-social, emotional-volitional and expressive-creative capacities, if we really want to achieve a qualitative improvement in the meaning of our body and thus contribute to new structuring of the body scheme that manifests itself in better postural health, so that our general state of health improves.

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