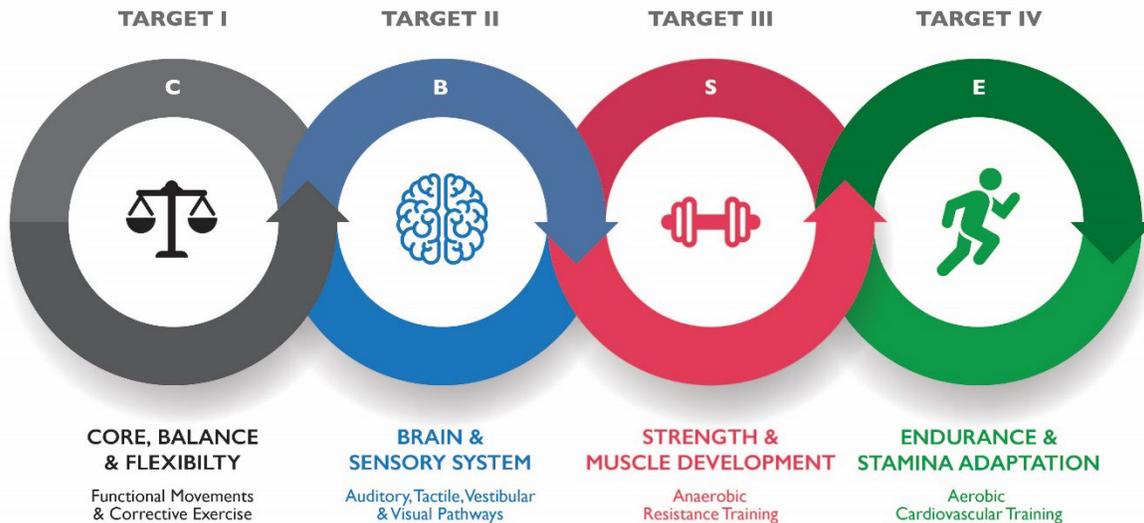




Brain Integration Techniques

Course Preview



When working with the special needs population, developing the brain and sensory system is very important. In our CBSE Training Model™ we teach course takers how to engage the brain while exercising. Below is a sample taken from the [Special Strong Trainer Level 1 Certification Course](#).

Left/Right Brain Connection- Midline

In general, the left side of the brain controls the right side of the body and vice versa. In addition, the right side of the brain, in general, houses emotions, imagination, creativity, and perception whereas the left side of the brain houses logic, reasoning and analytical thinking, numbers, and language. It is important for the left and right hemispheres to communicate with one another. By crossing the midline of the body (the line that divides our body in symmetry or follows the spinal column) both side of the brain must be activated to communicate with one another.

Midline Exercises

- **Cross-Crawl or Criss-Cross March-** Cross right hand or elbow to left knee while maintaining balance and upright posture
- **Tick-Tock-** Right arm goes straight out to the side while left arm folds across chest, maintaining posture and balance with no lower body movement or twisting

Bottom/Top Brain Connection- Transverse Line

The “bottom brain” is where the brainstem is located as well as the limbic system which houses reactive emotions in a tiny gray matter area called the amygdala. The amygdala remains alert, watching for times when we might be threatened and quickly processes and expresses emotions, especially fear and anger. When we feel threatened, the amygdala can completely hijack the brain and cause us to act before we think. The top brain” is where the cortex is located and is responsible for higher cognitive thinking such as logic before action. Exercises that test the vestibular system and move the body, specifically the head, through multiple planes create an environment for bottom/top brain connections. These movements generally take place across the transverse line of the body (the line that divides our upper body from our lower body- waist line) Training the vestibular system also creates stimulus to improve under-developed senses.

Transverse Line Exercises

- **Windmill-** Touch right hand to left foot and left hand to right foot. Ideally the hand should start straight above head, and head should start straight tracking down along the midline of the body. While this is primarily a vestibular exercise you can add a visual element by eye- tracking an object in the hand through the diagonal plane. If balance is difficult with this movement, you can start seated on the floor first.
- **Ball Slams-** Hold ball straight above head; arms and legs straight; slam ball straight down and look at knees (top of head pointed to floor); maintain balance and straight legs
- **Down/up (aka Burpee)-** Hands are placed on floor; feet jump back to plank; jump feet back to hands and stand up

Body Separation or Bilateral Coordination

When both sides of the body can work together in an organized and coordinated matter across the midline as well as the transverse line then an environment for physical and cognitive control is being created through muscle memory. The goal behind brain integration movements is to train the individual to have control of themselves physically so that they can ultimately have control mentally to respond to stimulus appropriately.

Body Separation or Bilateral Coordination Exercises

- **Crawling** - Body supported on all fours with head and back aligned; move forward and backward in a cross pattern i.e. right arm/left knee forward and then left arm/right knee forward
- **Bird Dog**- On hand and knees; head in line with spine and back flat; balance while raising arm straight out front and leg straight behind.
- **Jumping Jacks**- As arms go up above head feet jump out at the same time; as arms go down to side feet jump together at the same time

Applied Knowledge

The above is just the basics to brain integration through movement. These basics can be applied creatively to many other movements and activities. Where can you, the trainer, apply movements that cross the midline or the transverse line in your workouts with your clients? Here are a couple of examples:

- Apply a crisscross pattern to an abdominal exercise
- Incorporate boxing movements as an additional source of cardio
- Add movements over a bosu ball or stability ball for larger movements through the transverse line
- Incorporate bear crawls or frog jumps
- Incorporate forward rolls or log rolls to challenge the vestibular system

In addition to brain integration techniques, we also teach course takers behavior strategies and adapted movements for the special needs population. You can learn more by enrolling in our online [certification course](#), which counts towards NASM & ACE CEU's!