

Neurobics:

The New Science of Brain Exercise

by Erick Bacon

Neurobics is designed to maintain mental fitness, strength and flexibility of the brain. Neurobics involves exercises that present the brain with non-routine experiences using smell, taste, touch, hearing and vision.

The pace, structure, and conveniences of modern life has reduced the intensity of our ordinary day-to-day social interactions and deprived us of mental stimulation. Remember when getting gas meant talking to an attendant instead of self-service? Getting cash meant talking to a teller instead of pushing buttons at an ATM. Purchasing airline tickets meant exchanging words with a travel agent instead of allowing a computer to find your e-ticket. There is evidence today that engaging all the senses is important for a healthy brain. Ironically, instead of honing mental acuity, the use of modern technology is the brain's nemesis by undermining the development and maintenance of all five senses.

Neurobic exercises challenge the brain by limiting the senses we often rely upon, such as sight and hearing, and utilize the senses less frequently used like smell, touch and taste. In so doing, rarely activated pathways in your brain's network are now stimulated which increases mental flexibility. An important part of the neurobic strategy is to help you "see" in other ways to use other senses to increase the number and range of associations you make. The greater your ability to utilize all of your senses the better your chances of solving a challenge.

For example, think of a baby encountering a rattle. The baby will look at it closely, pick it up, wrap fingers around it, shake it, listen to it's sound, and then stick it in it's mouth, taste it, and feel it with the tongue and lips. The baby's brain uses all of its five senses to develop the network of association that will give definition and memory of a rattle. Now, imagine yourself finding that rattle on the floor. Most likely, you'll just look at and instantly catalog it as a rattle. The point is that a child is constantly tapping into the brain's ability to strengthen and increase connections between its many regions (smelling, touching, hearing, tasting and seeing) to produce a tapestry of neural activity. Adults miss out on this multi-sensory experience because they tend to rely only on one or two senses. This severely limits the opportunity for making new associations at a level that is less than ideal for brain fitness.

Here is how neurobics works: Actions create new and different patterns of neuron activity in the brain. The use of our five senses during these activities stimulates connections within the brain to many areas and causes nerve cells to produce brain nutrients. Like the body, the brain needs a balance of activities to derive the nutrients it requires.

For example, a fun activity I use with my students involves "scent canisters". First, cut a regular sponge into small cubes. Then, find some liquids with pungent smells such as vinegar, hot sauce, and pepper sauce or other aromas. Put a few drops on each of the sponges and place the cubes in a 35mm film canister. Also prepare pleasant smelling liquids such as canisters filled with vanilla, lavender, and mint, for example. Select a task that is easy to yield a correct or incorrect response, such as true or false questions, performing movement that is either technically right or wrong, etc. When a student makes a mistake, open the lid for the student to smell the

unpleasant odor. This scent becomes married with the mistake, therefore, creating an olfactory "route map" in the brain that links the cortical regions that enhance memory. Now, try the same thing but highlight a positive connection by using a pleasant smell. Every time a skill or section of choreography has been done correctly allow the student to experience an enjoyable fragrance. Some scents have even been linked to eliciting positive brain behavior. For example, in Japan nutmeg or cinnamon odors are added to air-conditioning of office buildings to enhance productivity.

Another exercise I try to frequently employ is the "blind change". This is done when the performers have the time to change in and out of their regular practice or dance attire several times. A blindfold is given to each performer and they are asked to go through their usual steps of getting ready. This exercise disengages the subject from sight and requires a hypersensitivity to touch. This change in usage of the senses challenges the brain to perform an easy task in a non-routine manner. This experience activates pathways in the brain's network to increase mental flexibility. As a fun activity form several small groups, spread them out on the gym floor to avoid injuries, and blindfold a few of the performers in each group. Now, let them attempt a run-through of their routine while blindfolded. This teaches the performer to use his or her other senses to create spatial awareness. It's a fun environment to teach spatial awareness.... and the rest of the team gets a kick out it!

Another brain altering exercise heightening the sense of smell involves lighting incense around your gym floor during rehearsal. This method has proven useful and effective in Eastern studies. Using caution and care, you can create a change in the sight and mood of a rehearsal by lighting candles around the gym floor. Be sure to use a plate under your candles to catch the falling wax. Sometimes saving this exercise for the end of your rehearsal can produce a well-relaxed conclusion for your performers.

Involve your students in some intellectual fun by putting together a jigsaw puzzle over the course of an entire season. We purchase puzzles that have over 1,000 pieces (500 maybe suitable for your team) that symbolizes an important theme for your team's season. Each day one performer must spend some time to match a single piece of the puzzle. After everyone has taken a turn the rotation of team members begins again. When the puzzle is completed, you should have it framed as a permanent memory of that year.

Remember that these are exercises and suggestions can be incorporated within your team's curriculum. How you use them and how often you attempt these exercises is your decision, but I have found them very beneficial. This past season I have done a small study with another competitive. Our team attempted these exercises quite frequently both on and off the court. They say to be successful you must eat and breathe your art. So we did. Our competitor expressed they had more important things to worry about and only practiced their show. The results were shocking and very revealing. Incorporating these activities aided my team to focus, learn, and perform at a higher level. We scored an average of 6 points greater than the other team. In our competitive circuit, a 6-point spread is the difference between 1st place and 6th place.

Think about It!!

