IN-OFFICE BRAIN-BALANCING GUIDE

Prepared by Dr. Yannick Pauli
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Principles of Brain-Balancing

There are a few basic principles of brain-balancing that you will need to understand and apply in order to get the best results. Here they are:

Respecting Metabolic Capacity

Neurons are dependent on constant stimulation for their survival and proper function. When a neuron is stimulated, it leads to a cascade of biochemical reactions that result in the production of proteins. Proteins are negatively charged entities that maintain the inside of the neurons at a resting membrane potential of about –70 mV. This membrane potential is far away from threshold and gives stability to the neuron. When a neuron is under stimulated, less proteins are created. This means that the inside of the neurons becomes less negative. The membrane potential gets closer to threshold. That means that the neuron is more easily excited and becomes unstable. This is what is happening at a neuronal level in hemisphericity. A stable neuron would be like someone being asked to run 10 miles. It would start slowly to keep the pace throughout the whole distance. An unstable neuron would start sprinting right off the bat, go by the “stable neuron” runner, and then crash with fatigue on the side of the road. It would then recuperate, start sprinting again, and crash again.

The only way we can re-stabilize a neuronal pool is to stimulate it. But we need to find the right balance between stimulating enough to create plasticity in the system, without overwhelming its capacity. Essentially, it would be like training the “unstable neuron” runner by having him to start running, but slowly. If we go to fast – or, in our case, stimulate too much – we can create more problems. This is what we call “respecting metabolic capacity”.

You know that you have overwhlemed the system with too much stimulation (whether through your adjustments or through brain-balancing exercises) when:

- The child is extremely fatigued or tired after sessions
- The child’s symptoms worsen (not related to a healing crisis)
- The child has an adverse reaction to afferent stimulation
- The child’s functional status is worsening on objective measures
- The child’s develop secondary neurological symptoms (like tics, or worsened balance)

This will probably happen to you in some cases, as it did to me. Don’t worry, all you need to do is back off a bit and give the system (and child) some time to recuperate.

Frequency is the key

Since the system is often unstable, we do not want to bring too much intensity in what we do. In those cases, frequency trumps intensity. When we give brain-balancing exercises, we want to have the child perform few repetitions, but done often. This is why most of the exercise will have to be done daily, or even several time daily. Remember also, that the more a pathway is stimulated, the stronger it gets. So have the child do the exercises frequently with an intensity that is respectful of the metabolic capacity of his nervous system.
Focused attention is crucial

Focused attention is key to what we do. The children that you will see will have a tendency to want to do the exercises fast. This is incorrect. The child must perform all exercises purposefully, slowly and in great control, while paying attention to what he is doing. Always coach the child on that.

On your side, as a practitioner, nothing is more important that the intent that you have for that child. Be there with, in the most caring and empathetic way you can. Remember, you are no longer adjusting joints. You are balancing the most fantastic and complex system ever discovered in the whole universe: the human brain. With your new acquired knowledge and skills come a higher standard of service and responsibility.

Connecting body and mind

Movement and cognition go hand-in-hand. This is why we can use movement-based approaches to help the brain of your child function better. In order for you to tap into this body-mind connection, you can start combining some forms of mental activity with the physical activity. For example, you may ask the child to recite the alphabet while doing the therapeutic ball exercises, or doing some mathematical additions while performing his cross-crawl.

Rodolfo Llinas, a Professor of Neuroscience at New York University School of Medicine, says that “cognition is the internalization of movement”. To know more about that fundamental concept, I recommend you read his book “I of the Vortex”.

Remember that, through your fingertips, you hold the key to balancing the most advanced and highly evolved human brain structures. Take your responsibility seriously, while having fun doing it.
CORE NEUROLOGICAL BRAIN-BALANCING

On every in-office session, the child will be doing four basic types of exercises:

1. Core stability
2. Cross-crawl
3. Interactive Metronome
4. Gravitational Challenge

Every child will get some of those exercises on every session. Core stability and cross-crawl are considered our “warm-up” for the session. Interactive Metronome is a central piece of the program. Gravitational challenge is a principle more so than specific exercises in themselves.

1. CORE STABILITY

On every in-office session with the Brain Coach, the child will start by doing some core stability exercises. We have four basic ones that we use. The child is instructed to do 15 repetitions. Movements have to be purposeful, slow and in control with the child paying attention and focusing on what he is doing. Having the Brain Coach demonstrate or perform the exercises with the child is suggested as this will engage mirror neurons network.

The exercises follow a progression where the stability of the child is sequentially reduced to trigger greater challenge of the postural core musculature. The child is moved one level when he has successfully mastered the previous level 3 times in a row.

The four exercises are performed on a therapeutic ball. The size of the ball has to be appropriate for the child. The child must be able to comfortably lie on the ball with the knees and hands touching the ground. In our office we carry ball sizes of 45cm (18”), 55cm (22”), 65 cm (26”) and 75 cm (30”). We also have a ball that is shaped like a cylinder, with the two sides bigger than the centre. This is for children that have extremely poor stability and need some extra support to start with.

The four exercises are:

1. Arm forward elevation
2. Leg extension
3. Arm and contralateral leg
4. Upper dorsal

Note: TB = Therapeutic Ball
1. Arm forward elevation

Start position  
Finnish position

Sequential progression

TB1A  Normal, feet shoulder-width apart
TB1B  Feet and legs together
TB1C  Feet crossed over each other
TB1D  Feet up off the floor, knee contact only

2. Leg Extension

Start position  
Finnish position

Sequential progression

TB2A  Normal, hands shoulder-width apart
TB2B  Hands and arms together
TB2C  Hands over each other
TB2D  No hands (hands rest on the ball)
3. Arm and contralateral leg

Start position

Finnish position

**Sequential progression**

TB3A  Normal, hands shoulder-width apart
TB3B  Head turns toward the elevated arm
TB3C  Head turns toward elevated arm with ipsilateral eye movements
TB3D  Head turns toward elevated arm with contralateral eye movement

4. Upper dorsal

Start position

Finnish position

**Sequential progression**

TB4A  Normal, feet shoulder-width apart
TB4B  Feet and legs together
TB4C  Feet crossed over each other
TB4D  Feet up off the floor, knee contact only
# THERAPEUTIC BALL (TB)

<table>
<thead>
<tr>
<th>CODE</th>
<th>EXERCISE AND DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Arm forward elevation</strong></td>
<td></td>
</tr>
<tr>
<td>TB1A</td>
<td>Normal, feet shoulder-width apart</td>
</tr>
<tr>
<td>TB1B</td>
<td>Feet and legs together</td>
</tr>
<tr>
<td>TB1C</td>
<td>Feet crossed over each other</td>
</tr>
<tr>
<td>TB1D</td>
<td>Feet up off the floor, knee contact only</td>
</tr>
<tr>
<td><strong>2 Leg extension</strong></td>
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</tr>
<tr>
<td>TB2A</td>
<td>Normal, hands shoulder-width apart</td>
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<tr>
<td>TB2B</td>
<td>Hands and arms together</td>
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<tr>
<td>TB2D</td>
<td>No hands (hands rest on the ball)</td>
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<tr>
<td><strong>3 Arm and contralateral leg</strong></td>
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<tr>
<td>TB3A</td>
<td>Normal, hands shoulder-width apart</td>
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<tr>
<td>TB3B</td>
<td>Head turns toward the elevated arm</td>
</tr>
<tr>
<td>TB3C</td>
<td>Head turns toward elevated arm with ipsilateral eye movements</td>
</tr>
<tr>
<td>TB3D</td>
<td>Head turns toward elevated arm with contralateral eye movement</td>
</tr>
<tr>
<td><strong>4 Upper Dorsal</strong></td>
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</tr>
<tr>
<td>TB4A</td>
<td>Normal, feet shoulder-width apart</td>
</tr>
<tr>
<td>TB4B</td>
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<td>Feet crossed over each other</td>
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<td>TB4D</td>
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A printable version of this summary is available in Addendum 1
Our “Therapeutic Ball and Cross-Crawl Progression Form” is available as Addendum 2.
2. CROSS-CRAWL

On each session, the child will do three types of cross-crawl exercises, taken from the possibilities described below. The child does 15 complete repetitions (15 times right elbow to left knee and 15 times left elbow to right knee).

There are two types of progression you can follow. Use you creativity to make the sequence interesting and fun for the child, while helping him progress.

**Horizontal progression:**
- Elbow to knee
- Elbow to knee with head turning toward elbow
- Elbow to knee with head turning toward elbow with ipsilateral eye movement
- Elbow to knee with head turning toward elbow with contralateral eye movement

**Vertical progression:**
- Lying supine on the floor (on a mat)
- Sitting on a therapeutic ball
- Standing
- Standing on a compliant surface
- Standing on a beam
A printable version of this summary is available in Addendum 1
Our “Therapeutic Ball and Cross-Crawl Progression Form” is available as Addendum 2.

**Advanced strategy – Metronomic Beat**

One of the advanced strategies we use in our office is to start doing the therapeutic ball and cross-crawl exercises timed with a metronome. This means that the child does not only perform the movement as such, but that he has to perform them to the beat of a metronome. When we use this strategy, we use a small portable metronome (see low-cost metronome in the next section).
3. INTERACTIVE METRONOME

The Interactive Metronome is one of the centrepieces of our brain-balancing program. Our experience suggests that the progress on the Interactive Metronome is highly correlated with improvements in attention.

The Interactive Metronome requires a significant financial investment. If this is within your means, I suggest you invest in it. If not, I recommend that you start with the low or no cost version presented below. Once your ADHD Wellness Program is profitable, I suggest you invest some of that profit into the Interactive Metronome.

With the low cost or no cost version, you will not get objective feedback of whether the child is progressing or not. Also, you will not be able to use our progressive sequence since it requires objective feedback. Also, the child will not get the benefits of the audio feedback. Nevertheless, you will be still doing a tremendous service to the child you are caring for.

One of the many advantages of using a metronome training portion to your Brain Balancing – whether through the Interactive Metronome, the low-cost version or the no cost version – is that you can take 2 children at the same time. While one child is on the metronome, your Brain Coach can work with the other child.

Note on Interactive Metronome

The protocol included in the Interactive Metronome package is based on hour-long session. I have find that this is too much and is not respecting the metabolic capacity and many children. This is why I have broken down that protocol into pieces that are more respectful of the child’s neurological state.

Obviously, the application of the protocol that I share with you needs to be taken with a caveat. If the child is well coordinated and progress nicely, we just have him follow the protocol. But if a child has difficulty progressing on the metronome, I suggest that you have him practice the same easy exercises until he is progressing. We usually want a child to be able to perform an exercise with less than 100 msec of being off, before moving him to another exercise.

For example, in session 2 of our protocol, the child needs to perform 400 repetitions with both feet. If he has a hard time doing that, we may break those 400 repetitions into 4 sets of 100 repetitions.
**Interactive Metronome Exercises**

The Interactive Metronome is using 13 different exercises:

1. **Both hands** – Clap two hands together
2. **Right hand** – Tap right hand against lateral thigh
3. **Left hand** – Tap left hand against lateral thigh
4. **Both feet** – Tap one foot after the other on a mark on the ground
5. **Right feet** – Tap right foot on a mark on the ground
6. **Left feet** – Tap left foot on a mark on the ground
7. **Both heels** – Tap one heel after the other on a mark on the ground
8. **Right heel** – Tap the right heel on a mark on the ground
9. **Left heel** – Tap the left heel on a mark on the ground
10. **Right hand / left foot** – Tap right hand against thigh, then left foot on the ground
11. **Left hand / right foot** – Tap left hand against thigh, then right foot on the ground
12. **Right foot balance with left foot tap** – balance on right foot, while tapping with left
13. **Left foot balance with right foot tap** – balance on left foot, while tapping with right

**Brain Potential Interactive Metronome Protocol**

**Session 1**
- Exercise 1 – 300 repetitions
- Exercise 2 – 200 repetitions
- Exercise 3 – 200 repetitions

**Session 2**
- Exercise 4 – 400 repetitions
- Exercise 5 – 200 repetitions
- Exercise 6 – 200 repetitions

**Session 3**
- Exercise 1 – 400 repetitions
- Exercise 2 – 300 repetitions
- Exercise 3 – 300 repetitions

**Session 4**
- Exercise 4 – 400 repetitions
- Exercise 5 – 300 repetitions
- Exercise 6 – 300 repetitions

**Session 5**
- Exercise 1 – 500 repetitions
- Exercise 4 – 400 repetitions
- Exercise 6 – 100 repetitions
- Exercise 2 – 100 repetitions
- Exercise 10 – 200 repetitions
Session 6
  Exercise 1 – 500 repetitions
  Exercise 4 – 400 repetitions
  Exercise 5 – 100 repetitions
  Exercise 3 – 100 repetitions
  Exercise 11 – 200 repetitions

Session 7
  Exercise 4 – 500 repetitions
  Exercise 1 – 800 repetitions

Session 8
  Exercise 8 – 100 repetitions
  Exercise 9 – 100 repetitions
  Exercise 7 – 200 repetitions
  Exercise 1 – 800 repetitions

Session 9
  Exercise 2 – 300 repetitions
  Exercise 10 – 200 repetitions
  Exercise 3 – 300 repetitions
  Exercise 11 – 200 repetitions
  Exercise 7 – 100 repetitions

Session 10
  Exercise 1 – 500 repetitions
  Exercise 4 – 100 repetitions
  Exercise 1 – 500 repetitions

Session 11
  Exercise 1 – 1500 repetitions

Session 12
  Exercise 4 – 400 repetitions
  Exercise 12 – 200 repetitions
  Exercise 13 – 200 repetitions
  Exercise 7 – 200 repetitions

Session 13
  Exercise 1 – 1500 repetitions

Session 14
  Exercise 12 – 200 repetitions
  Exercise 13 – 200 repetitions
  Exercise 10 – 300 repetitions
  Exercise 11 – 300 repetitions
Session 15
   Exercise 1 – 1500 repetitions

Session 16
   Exercise 4 – 400 repetitions
   Exercise 1 – 400 repetitions
   Exercise 4 – 400 repetitions

Session 17
   Exercise 8 – 100 repetitions
   Exercise 9 – 100 repetitions
   Exercise 7 – 300 repetitions
   Exercise 1 – 500 repetitions

Session 18
   Exercise 10 – 200 repetitions
   Exercise 11 – 200 repetitions
   Exercise 4 – 400 repetitions
   Exercise 1 – 400 repetitions

Session 19
   Exercise 1 – 1500 repetitions

Session 20
   Exercise 1 – 1500 repetitions

Session 21
   Exercise 1 – 200 repetitions
   Exercise 2 – 200 repetitions
   Exercise 3 – 200 repetitions
   Exercise 4 – 200 repetitions
   Exercise 5 – 200 repetitions
   Exercise 6 – 200 repetitions

Session 22
   Exercise 1 – 300 repetitions
   Exercise 2 – 200 repetitions
   Exercise 3 – 200 repetitions
   Exercise 10 – 200 repetitions
   Exercise 11 – 200 repetitions

Session 23
   Exercise 1 – 300 repetitions
   Exercise 2 – 200 repetitions
   Exercise 3 – 200 repetitions
   Exercise 10 – 200 repetitions
   Exercise 11 – 200 repetitions
Session 24
Exercise 1 – 1500 repetitions

Low cost version of the Metronome

Example of a digital Metronome

One low cost alternative to the Interactive Metronome is to utilize a digital metronome. They vary in price, but you can find some for as low as 20 USD on www.amazon.com (type “metronome” in the search box on the home page). You can also visit your local music store. I recommend that you find one where you can plug earphones in. This way, only the child working on the metronome can hear the sounds. This prevents the second child from being disturbed. The beat should be set at 54 per minute.

No cost version of the Metronome

If the room you are working has a computer that is connected to Internet, you can even use free online metronomes. Again, use of headphone is suggested. The beat should also be set at 54 per minutes.

www.metronomeonline.com
**4. GRAVITATIONAL CHALLENGE**

Gravitational challenge is a principle rather than specific exercises. During each session, we want to challenge the child’s postural musculature by having him fight gravity while performing balance and coordination type of exercises.

One of the basic principles of gravitational challenge is that the child will be on some form of compliant surface, i.e. a surface that will destabilize him.

If the child has poor balance, we may start by having him stand on a pillow. As the child progresses – or for children that have a better balance to start with, we will have them work on wobble boards.

In our clinic, we use different types of wobble board, each having a different level of difficulty to it.

With the child on the wobble board, we will do exercises such as:

- Maintaining balance on the wobble board, eyes open
- Maintaining balance on the wobble board, eyes closed
- Maintaining balance on the wobble board, while doing cognitive activities (such as reciting alphabet or basic math)
- Catching and throwing various objects (balls of different sizes, bean bags); first with both hands, then with one hand
- Passing one object from one hand to the other
- Juggling

It is up to you and your Brain Coach to become creative with this one.

**Learning Breakthrough Program**

One excellent resource to complement gravitational challenge is the Learning Breakthrough Program.

Check it out at:  [www.learningbreakthrough.com](http://www.learningbreakthrough.com)
CUSTOMIZED NEUROLOGICAL BRAIN-BALANCING

On top of the core neurological brain-balancing strategies that we use, each child will then receive specific exercises according to his needs.

We have created several customized modules that are based on the major areas of neurological dysfunctions that can be seen during the neurological exam.

Those modules include:

1. Cerebellar module
2. Vestibular module
3. Oculomotor module
4. Visual module
5. Auditory module
6. Olfactory module
7. Hemispheric-cognitive module

1. CEREBELLAR MODULE

This module is used when the neurological exam has revealed that the child has significant problems with cerebellar function.

Here are some brain-balancing exercises to stimulate cerebellum:

- Using a revolving chair, spin the child in the direction of the weak cerebellum
- Perform lower and upper limb stretches on the side of weak cerebellum
- Use complex hand, elbow or shoulder movement on the side of the weak cerebellum (for example, ask the child to write various words “in the air” using his hand)
- Have the child do diagonal eye movements, from up on the side of the weak cerebellum to down on the other side.
- Have the child use a dynaball in the hand of the weak cerebellum.

Dynaball

This last one is one of our children’s favourite. They love the challenge provided by needing to “master” the dynaball. We have some in stock and sell it if they want to practice at home. You can find them at your local sport/athletics store for less than 30 USD or on www.amazon.com (type “dynaball” in the home page search box)
2. VESTIBULAR MODULE

This module is specifically designed for the children who had dysfunction on the vestibular portion of the neurological exam. It can be also very helpful for children with important oculomotor dysfunctions.

In our office, we use the following exercises:

1. Gaze stabilization
2. Times viewing
3. Tossing and catching a ball
4. Ankle sways
5. Spinning

Gaze stabilization

You can perform this exercise in the horizontal, vertical and diagonal plane. We use the following progression:

- Sitting
- Standing, feet shoulder-width apart
- Standing, feet together
- Standing, on a compliant surface.

Use a card with text. Hold the card 12-18 inches in front of the eyes of the child. Make sure the child can focus on the letters on the card. Keep the card still and instruct the child to keep his eyes on the card, then slowly move his head back and forth horizontally. Move slowly so that the letters do not become blurred or out of focus. Then do the same vertically and diagonally. Keep increasing the speed of head movement while still maintaining the letters in focus.

You can use more advanced stimulation by placing the card in the centre of a busy background, such as a checkerboard.
**Times One Viewing**

You can perform this exercise in the horizontal, vertical and diagonal plane. We use the following progression:

- Sitting
- Standing, feet shoulder-width apart
- Standing, feet together
- Standing, on a compliant surface.

Have the child hold the card 12-18 inches in front of his eyes and make sure he can focus on the letters. Instruct the child to slowly move the card right and left horizontally, keeping his eyes focused on the letters and moving his entire upper body to go a full 180 degrees. Change hand if necessary to keep the card in view at all times. Move the entire body, not just the head. Move slowly enough so that the letters do not get blurred. Do the same in the vertical and diagonal plane.

![Image of Times One Viewing](image.png)

**Times Two Viewing**

You can perform this exercise in the horizontal, vertical and diagonal plane. We use the following progression:

- Sitting
- Standing, feet shoulder-width apart
- Standing, feet together
- Standing, on a compliant surface.

Have the child hold the card 12-18 inches in front of his eyes. Instruct him to slowly move the card right and left, keeping his eyes focused on the letters. Tell him to move his head in the opposite direction of the card movement. When the card is moved to the left, his should move his head to the right; when the card is moved to the right, he should move his head to the left. Move slowly so that the letters do not become blurred or out of focus.

![Image of Times Two Viewing](image.png)
**Tossing and catching a ball**

This exercise can be done alone or with a partner. We use the following progression:
- Sitting
- Standing, feet shoulder-width apart
- Standing, feet together
- Standing, on a compliant surface.

Use a medium-size ball (soccer, basket, volley ball). Instruct the child to keep his eyes fixed on the ball and move his head and eyes so that he is always looking at the ball. Tell him to toss the ball in the air and then catch it. Have a partner throw the ball. The child’s eyes must remain on the ball at all times.

**Ankle sways**

This exercise can be done in circular motion, back and forth or left and right. We use the following progression:
- Standing, feet shoulder-width apart
- Standing, feet together
- Standing, on a compliant surface.

Instruct the child to focus his eyes on a target on the wall. Tell him to sway his body in a large circle by moving only at his ankles (ensure he does not bend at shoulders, waist, hips or knees). Make sure he keeps both feet flat on the floor and that he does not sway so much as to lose balance. Instruct him to do it clockwise and counter-clockwise. Progress by increasing the speed of the sway.
**Spinning**

You need a revolving chair to do this exercise. Make sure the child can tolerate slow spins before to move to fast spins. For fast spins, spin the child in the direction required for his hemisphericity (see below). Each rotation should take about 2 seconds. Rotate the child ten times. Then let him rest.

Right hemisphere weakness: spin clockwise (to the right)
Left hemisphere weakness: spin counter-clockwise (to the left)

**3. OCULOMOTOR MODULE**

This module is used for children who have abnormal oculomotor function on the neurological exam. This module may be complemented by home use of eye rehabilitation therapy software, such as HTS.

You can either do the exercise non-specifically for the oculomotor or do it specifically by taking hemisphericity into account.

**Pursuits**

This exercise can be done in the horizontal and vertical plane
We use the following progression:

- Sitting
- Standing, feet shoulder-width apart
- Standing, feet together
- Standing, on a compliant surface.

Hold your finger or a pencil 12-18 inches in front of the child’s eyes. Make sure you’re at a distance where he does not see double. Instruct the child to follow your finger or the pencil with his eyes only, and not to move head. Start slowly to avoid catch-up saccades. Do ten times.

If you want to do the exercise with hemispheric specificity:

- For a right hemisphericity: exercise only to the right
- For a left hemisphericity: exercise only to the left.

Example of right hemisphericity: start with the child’s eye to the far left and make him follow your finger to his right side. Then tell him to close his eyes. Go back to the initial position. Tell the child to open his eyes and locate your finger. Then, instruct to follow your finger again.
**Saccades**

This exercise can be done in the horizontal and vertical plane.
We use the following progression:

- Sitting
- Standing, feet shoulder-width apart
- Standing, feet together
- Standing, on a compliant surface.

Position two finger 12-18 inches away of the child, 30 degrees to the side. Instruct the child to look at your nose. Tell him to quickly look at the finger that you wiggle, without moving the head. Once he has looked at your eye, tell him to come back to your nose. Do that ten times. Do the finger wiggling randomly.

If you want to do the exercise with hemispheric specificity:

We need to work with both eyes, but you want to train more on the weak side. So, out of ten repetitions, do three on the good side and seven on the weak side. For example, with a child with right hemisphericity, wiggle your right finger seven times and your left finger three times.

**Eye pathways**

In these exercises, you ask the child to follow specific pathways by using only his eyes. Here are some examples of eye pathways.
Normal size versions of those eye pathways are provided in addendum 1

**Pencil push-ups (convergence)**

Hold a pencil 18 inches in front of the child’s nose. Slowly bring the pencil closer to the child. Instruct the child to let you know when he sees double. Stop and note the distance. Ask the child to focus hard to see if he can see only one pencil. If he cannot, go back to the starting distance and repeat. If he now can see one pencil, move it closer again until he sees both again.

**3D Mystery Images (Stereoscopic Images)**

Those images force the child to engage eye coordination to distinguish the 3D picture
4. VISUAL MODULE

We use this module on children that have demonstrated light hypersensitivity on the neurological exam. Those exercises can also be used as hemispheric-specific stimulation.

The light blocking exercises and Eyelights can be used while doing some other type of exercises (core neurological brain-balancing or others).

We use the following exercises:

1. Accommodation exercises
2. Light blocking exercises
3. Light stimulation
4. Eyelights

Accommodation exercises

Have the child sit straight in front of a wall. The wall should have a target on it on which the child can focus his eyes. Hold your finger or a pencil 12-18 inches in front of the child’s eyes (should be at a distance where the child does not see double). Instruct the child to focus his attention for 3 seconds on your finger (or pencil) and then to focus for 3 seconds on the target on the wall. Repeat back and force.

Light blocking exercises 1

In light blocking exercises we will remove one side of vision. This is a powerful way to stimulate one hemisphere. They are great for children who are hypersensitive to light.

In this first exercise, we simply have the child wear an eye patch. We usually start have him wear it for 10 minutes at a time, and increase time in 5 minutes increments until the child’s is able to wear it for a major part of his session. That exercise can also be prescribed to do at home. To make it fun for children, we call that “Pirate Time”.

Eye patch

For a right hemisphericity, block the right eye.
For a left hemisphericity, block the left eye.

You can buy eye patches in your local costume store or on www.amazon.com for less than 3 USD (type “eye patch” in the home page search box”).

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**Light blocking exercises 2**

In this exercise, we build special glasses for the child to wear, called “hemifield glasses”. Those glasses are designed to block part of the light entering the retina. Buy a pair of safety goggles. You will block half of the fields using some paint, masking tape or White-Out, in the following fashion:

For right hemisphericity: block the right half of both lenses
For left hemisphericity: block the left half of both lenses

Have the child wear the glasses, starting with 10 minutes and building up in 5 minutes increments.

![Hemifield glasses (blocked in black for right hemisphere)](image)

You can buy safety goggles at your local home improvement store or on [www.amazon.com](http://www.amazon.com) (type “safety goggles”) for less than 10 USD.

**Light stimulation**

Using a pen light or flash light, shine some light from a 6-8 inches distance into the child’s eye opposite to the weak hemisphere. Shine in the corner of the eye. Observe for pupil constriction. After a certain amount of time, the pupil will dilate. Only shine for as long as the pupil is constricted and try to stop just before it dilates. For some children, you may need to start with a 1 second shine, and then build up as the system adapts.

You can also do that with the hemifield goggles on.
Eyelights

Eyelights are special glasses that produce flashing lights that can be programmed. You can flash the right or left side, upper or lower. You can also flash the upper and lower, but with one flashing more intensely than the other.

![Eyelights Diagram]

Light is emitted from these positions.

You can also change the colour of the lenses.

In our office, we use the blue lenses. We will flash the eye opposite the hemisphericity, with all four lights on that side flashing, but with the top row flashing brighter.

Making the top row flash brighter will have a greater impact on cognitive function. Making the bottom row flash brighter will have a greater impact on motor function.

We start with the child wearing the glasses for 1-2 minutes; then build in increment of 1-2 minutes until he can wear them for 15-20 minutes. The child wears the glasses while doing other activities.

When I prescribe them at home, I use the same duration protocol, but I ask parents to have the child wear the glasses for that duration 2-3 times per day.

You can order Eyelights at [www.eyelights.com](http://www.eyelights.com)

Public price is 150 USD. Contact the company and ask for Doctor’s price.
5. AUDITORY MODULE

In our clinic the auditory module is essentially done at home. We use the Hemispheric Music CD developed by Dr. Robert Mellilo, a chiropractic neurologist. The CDs are available at www.i-waveonline.com.

There are 4 CDs available:
- Adult right brain ("Woman Breathing")
- Adult left brain ("Peaceful")
- Child right brain ("With Wolves and Whales")
- Child left brain ("The Gargle Guy")

We have bought several CDs of each and we lend them to patients as part of their program package for the duration of the intensive phase.

We tell parents to have the child listen to the CD 3-5 times per day for about 10 minutes. The music can be played in the background while the child is eating, playing or doing homework (some children may need silence to concentrate better). The child does not have to be actively listening to the music. In order to be even more hemisphere specific you may tell the parents to do the following:

For right hemisphericity, the child may:
- listen to the music in the background
- listen to music with earphone, with a plug in the right ear
- listen to music with one earphone in the left ear

For right hemisphericity, the child may:
- listen to the music in the background
- listen to music with earphone, with a plug in the left ear
- listen to music with one earphone in the right ear

For your information, both hemispheres process sounds differently. The right hemisphere is low-frequency sounds and geared toward harmony, interval, quality, timbre and spatial, temporal and long-term patterns. The left hemisphere is high-frequency sounds and geared toward rapid variance in volume, pitch, timing, rhythm, lyrics and familiar sounds.

Here are some music pieces related to hemispheres:
<table>
<thead>
<tr>
<th><strong>Right Hemisphere</strong></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Song</strong></td>
<td><strong>Album</strong></td>
<td><strong>Author</strong></td>
</tr>
<tr>
<td><strong>Classical Music</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March Militaire</td>
<td>Schubert</td>
<td></td>
</tr>
<tr>
<td>Hungarian Dance No 5</td>
<td>Brahms</td>
<td></td>
</tr>
<tr>
<td>Habanera</td>
<td>Carmen</td>
<td>Bizet</td>
</tr>
<tr>
<td>Capriccio Espagnole</td>
<td></td>
<td>Rimsky-Korsakov</td>
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<tr>
<td>Arabeske</td>
<td>Schumann</td>
<td></td>
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<tr>
<td>Fountains of Rome</td>
<td>Respighi</td>
<td></td>
</tr>
<tr>
<td>Piano Concerto No 26</td>
<td>Mozart</td>
<td></td>
</tr>
<tr>
<td>Melody in F</td>
<td>Rubinstein</td>
<td></td>
</tr>
<tr>
<td>Violin Concerto in E Minor</td>
<td>Mendelssohn</td>
<td></td>
</tr>
<tr>
<td>Claire de Lune</td>
<td></td>
<td>Debussy</td>
</tr>
<tr>
<td><strong>New Age</strong></td>
<td><strong>The Planets</strong></td>
<td><strong>Gustav Holst</strong></td>
</tr>
<tr>
<td>Mars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jupiter</td>
<td></td>
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</tr>
<tr>
<td>On the Edge</td>
<td>Mickey Hart</td>
<td></td>
</tr>
<tr>
<td>Diga Rhythm</td>
<td>Mickey Hart</td>
<td></td>
</tr>
<tr>
<td>Winterfall Music</td>
<td>Paul Warner</td>
<td></td>
</tr>
<tr>
<td>Eagle’s Call</td>
<td>Bruce Hurnow</td>
<td></td>
</tr>
<tr>
<td>Lemurian Sunrise</td>
<td>Paul Lloyd Warner</td>
<td></td>
</tr>
<tr>
<td>Dawn</td>
<td></td>
<td>Steven Halpern</td>
</tr>
<tr>
<td>Pan Flute</td>
<td>La Mir</td>
<td></td>
</tr>
<tr>
<td>Ocean</td>
<td></td>
<td>Larkin</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Left Hemisphere</strong></th>
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<tbody>
<tr>
<td><strong>Song</strong></td>
<td><strong>Album</strong></td>
<td><strong>Author</strong></td>
</tr>
<tr>
<td><strong>Classical Music</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air on G String</td>
<td>Bach</td>
<td></td>
</tr>
<tr>
<td>Ave Maria</td>
<td>Schubert</td>
<td></td>
</tr>
<tr>
<td>The Swan</td>
<td>Saint-Saëns</td>
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<tr>
<td>Traumerei</td>
<td>Schumann</td>
<td></td>
</tr>
<tr>
<td>Adagio</td>
<td>Symphony No1 in C Minor</td>
<td>Brahms</td>
</tr>
<tr>
<td>Poeme for Violin &amp; Orchestra</td>
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<td>Chausson</td>
</tr>
<tr>
<td>Piano Concerto in B Minor</td>
<td>Tchaikovsky</td>
<td></td>
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<tr>
<td>Liebestraum</td>
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<td>Litz</td>
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<tr>
<td>Gregorian Chants</td>
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<tr>
<td><strong>New Age</strong></td>
<td><strong>Black Atlantis</strong></td>
<td><strong>Upper Astral</strong></td>
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<tr>
<td>Divine Gypsy</td>
<td></td>
<td>Paramahansa Yogananda</td>
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<tr>
<td>Crystal Cave</td>
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<td></td>
</tr>
<tr>
<td>Be Still</td>
<td>Rosemary Crow</td>
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<tr>
<td>Angel Love</td>
<td></td>
<td>Aelolian</td>
</tr>
<tr>
<td>Inside</td>
<td></td>
<td>Paul Horn</td>
</tr>
<tr>
<td>Venus</td>
<td>The Planets</td>
<td>Gustav Holst</td>
</tr>
<tr>
<td>The Great Pyramid</td>
<td></td>
<td>Paul Horn</td>
</tr>
<tr>
<td>Neptune</td>
<td>The Planets</td>
<td>Gustav Holst</td>
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<tr>
<td>Eventide</td>
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<td>Stephen Halpern</td>
</tr>
</tbody>
</table>
6. Olfactory Module

In olfactory stimulation we will use various scents or essential oil to stimulate your child brain. It is important to remember that olfaction is what is called an ipsilateral circuit. It does not cross the midline like all the other sensory information do. This is why olfactory stimulation will be done on the same side as the weak hemisphere, whereas all other stimulations will be done of the opposite side of the weak hemisphere.

If the child has a right hemisphere weakness, we will stimulate the right nostril only with the following strong scents:

- Black pepper
- Burnt wood
- Coffee
- Eucalyptus
- Fish oil
- Lemon
- Lime
- Mustard
- Onion
- Peppermint

If the child has a left hemisphere weakness, we will stimulate the left nostril only with the following pleasant scents:

- Apple
- Banana
- Cherry
- Chocolate
- Grape
- Lavender
- Orange
- Pineapple
- Rose
- Strawberry
7. HEMISPHERIC-COGNITIVE MODULE

Hemispheric exercises

This module is complementary to what we have already done since the great majority of our adjusting and customized neurological brain-balancing is done in an hemisphericity specific manner.

Here are some activities according to their hemispheric dominance:

Right hemisphericity

- Recalling the form of an object or a letter with or without its meaning
- Wordstem completion exercises, especially when a word stem is presented with many choices for completion
- Meaningless hand activity
- Paying and holding attention
- Big letter made up of small letter: holding the attention on the big letter
- Judging and estimating time
- Tracing mazes, especially initial attempts
- Looking at faces of unknown people
- Nostril breathing with focused attention on the breath

Left hemisphericity

- Recalling new material and words lists
- Remembering visual landmarks
- Meaningful hand activity
- Big letter made up of small letter: holding attention on the small letters
- Listening and counting – such as how many times a word or phrase is repeated
- Looking at tools or pictures of tools and naming them
- Finding a word
- Reading noun aloud
- Remembering words and pseudo-words
- Subtracting 7’s from 100
- Interpretation of incomplete pictures

Ask your Brain Coach to be creative with those functions and develop fun and interesting activities or exercises out of them.
**Cognitive Exercises**

**Stroop Colour**

Instruct the child to look at the diagrams and name the colour, not the word.

Example of Big Letter or Shape made of smaller letters or shapes

You can ask your Brain Coach to create some more Stroops.
Animal Stroop

The child must name the animal in the picture (and not the one written).

![Animal Stroop Diagram]

Stroop Direction

This is the same principle as the colour stroop, except that the child must name where the “direction” is located and not the word of the direction

![Stroop Direction Diagram]

You can time stroops exercises to see if the child is progressing

Full page stroops are available in the addendum 1
Attention exercises

For attention, we use a lot of “find the difference” exercises. We go from simple to more complex.