

*"We are what our thoughts have made us,
so take care about what you think.
Words are secondary. Thoughts live; they travel far."*
~Unknown

Lesson #3: The Brain and Hope.



Topic: **Hope happens in the 'upstairs' brain**⁹. See diagram in attached handouts.

Hope and Our Brain

Like we learned in the last section, people who are hopeful are also more successful. This is partly because tools that keep us hopeful improve brain functioning. We are going to learn more about how the brain works.

We have two different operating parts of our brain. We refer to these as the upstairs brain and the downstairs brain.

*The upstairs brain controls more complicated actions and emotions like good decision making, self-understanding, and empathy. We use our Upstairs brain to learn new things and when we feel hope.

*The downstairs brain controls our survival instincts. In our downstairs brain, we feel strong emotions like anger and fear.

Have you ever heard of **Fight or Flight**?

Fight or flight is our body's reaction to danger or a threat. The reaction of fight or flight is our body's way to protect us from danger and it is controlled by our downstairs brain. It can be a great tool our body has to help us if we are in trouble.

For example, a lion attacks a zebra. The zebra must act quickly to fight the lion, or it may flee as quickly as possible to escape the danger. The zebra cannot spend much time thinking about what to do. It must just react to survive.

Inside the downstairs brain there is something called the **amygdala**. This is an almond shaped part of the brain that is very powerful. The amygdala can take control of our whole body if it senses a dangerous situation. It does this by going upstairs and knocking on the upstairs brain's door, and letting the upstairs brain know that the downstairs brain suspects danger and is about to react. When the almond reacts, we go into fight or flight mode.

When the amygdala almond and downstairs brain take over, our upstairs brain shuts down completely. Our body shifts into instinct mode. After the amygdala almond decides the fear or anger is over, we are often exhausted and it's hard to focus or pay attention.

This means that if we are very angry, upset, scared, or frustrated, it can be difficult to learn and retain information. It's also hard to make good choices and it is challenging to see our hope.

To have hope, we need to **stay in our upstairs brain** rather than letting our downstairs brain take over.

The good news is that there are tools we can use to calm down our downstairs brain. These tools will help us cultivate hope inside of ourselves and be better learners, friends, family members, and be successful in the future. One of the ways we can calm our fight or flight response is by doing a deep breathing exercise.

You may think about your responses to the following questions or feel free to write them down for yourself.

1. Can you remember times where you were angry, upset or frustrated and it seemed as if you couldn't control how you acted?
2. When was a time when you were able to really focus on something and remember what you learned? Do you remember what you did before that experience that may have primed your brain?

Hope Exercise

How are you feeling?

By completing the following activity often, it will likely become easier to identify emotions and distress and use helpful exercises to calm your mind and body. Let's practice.

1. Distress Assessment Scale:

The following tool is provided to help you identify your emotions and stress level. Distress is any emotion **that you do not want** such as fear, anger, sadness, frustration...

Step One: Rate how you are feeling on a scale of 0-10.

0 is not feeling any fear, anger, sadness, and frustration

10 is feeling intense feelings of fear, anger, sadness, and frustration

When our distress level reaches a 7 or higher, we tend to not think clearly or act in ways that are consistent with our true selves. You may use this tool anytime to connect with how you are feeling. When our distress reaches high numbers, this may be an indicator that self-regulation techniques would be helpful. We will be covering some of these exercises in Lesson 4 "How to Create a Hopeful Mind".

Step Two: Use a self-regulation technique. One technique we can use to calm our mind and body down is by deep breathing.

1. Deep Breathing Exercise:

When you take a deep breath, it calms your nervous system and your Downstairs brain. Anytime you feel angry, overwhelmed or stressed, taking some deep breaths can help you calm down. Even if you can't

control your reactions at the time because your Downstairs brain is in charge, you can remember to breathe deeply. This will help you get back into your Upstairs brain.

We are going to practice what is known as diaphragmatic breathing, also what is known as belly or abdominal breathing. It works to strengthen your diaphragm, an important muscle that helps you to breathe. This specific technique also may help lower heart rate and blood pressure, increase relation, improve immune function, and decrease anxiety, to name a few.

So now let's practice.

1. Sit in a comfortable sitting position, with your back as flat as possible, or lie on a comfortable, flat surface.
2. Take a few seconds to just relax. Your neck, shoulders, arms, legs, and feet. Try a few big exhales.
3. When ready, place one hand on your chest, and the other on your stomach (right below the rib cage).
4. Now take a long, slow breath in through your nose, for a count of 10 if you are able but do what is comfortable. Make sure as you breathe in, you breathe all the way to your belly. You should feel the hand on your belly rise, while the hand on your chest remains still.
5. Take a second at the count of ten, purse your lips, and slowly exhale out. Feel the muscles on your stomach tighten, and hand lower.
6. Repeat this for 5 to 10 minutes, whatever is comfortable and build in the timing as you are able.
7. Notice how you feel after taking some deep breaths? Do you feel any different?

We encourage you to practice as you are able 2-3 times a day, strengthening your diaphragm. We also recommend you using it when you notice your stress levels rising, or anxiety increasing. We often take very shallow breaths, especially when in a stress response, so just learning the simple art of deep breathing can have a positive impact on health.

How did we do with Lesson 3? Please answer the questions below to the best of your ability. Once completed correctly, you are on your way to Lesson 4: Creating a Hopeful Mindset.

The two parts of our brain that impact our hope are:

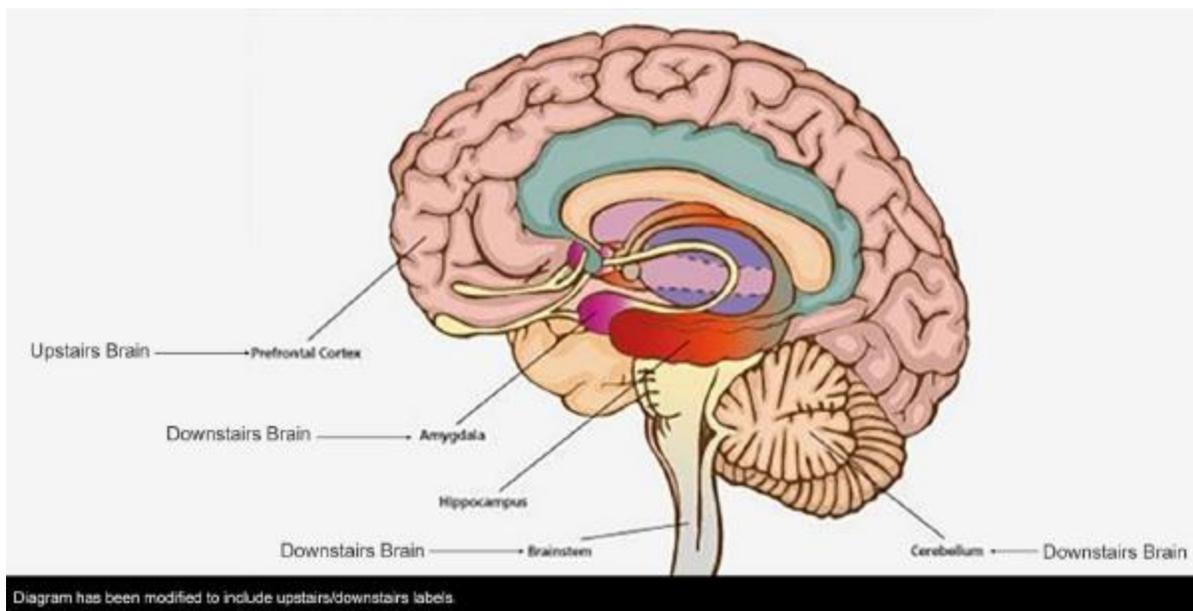
- a) the upstairs and downstairs Brain
- b) the Hippocampus and Cerebellum
- c) the Upper and Lower Brain
- d) the Brainstem and Amygdala

The amygdala:

- a) is in the upstairs brain.
- b) is responsible for the fight or flight response.
- c) helps us feel calm.
- d) regulates emotion.

Deep breathing is a tool that helps us cultivate hope by calming down our mind and body. It can be used:

- a) when any emotions that we do not want, take over and affect how we feel.
- b) anywhere
- c) to bring us back to our Upstairs brain.
- d) when our distress level reaches a 7 or higher.
- e) all the above



Downstairs Brain: Includes the limbic region and brainstem. It is the more primitive part of the brain and is responsible for:

- Basic functions such as breathing, blinking, and heart rate
- Fight or Flight Reaction (Amygdala)
- Strong emotions such as anger or fear

Upstairs Brain: Includes the Cerebral cortex. This is where thinking, imagining, and learning occurs. This part of the brain is responsible for the development of:

- Sound decision making and planning
- Control over emotions and body
- Self-understanding
- Empathy

Adapted from Siegel, D.J., & Bryson, T.P. (2011). The whole-brain child: Twelve revolutionary strategies to nurture your child's developing mind. New York: Random House.
New Directions. Integrating the Upstairs and Downstairs Brain: Teaching how to make good decisions in high-emotion situations.
<http://www.newdirections.mb.ca/services/traumaresources/11%20-%20Upstairs%20downstairs%20brain%20%20teaching%20how.pdf>
Diagram. (2014) <http://www.rediscoveringancestralwisdom.com/wp-content/uploads/2014/08/parts-of-the-brainhippocampus.jpg>