

KNOWN COUNSELING CO.

# Your Brain, Rewired.

Therapeutic worksheets  
to integrate neuroscience  
and anxiety reducing  
techniques.



# Anxiety in the Brain: The Two Types

## Amygdala ANXIETY

Amygdala is the part of the brain that deciphers whether something is dangerous or hazardous to us. We have an amygdala on each side of the brain.

When the brain retrieves information from the world, it sends this information to the amygdala faster than other parts of the brain.

The amygdala doesn't process the information or make meaning from it, it creates emotional memories by pairing an object or situation with an emotion.

The amygdala is what kickstarts emotions, both positive and negative. It is responsible for love, bonding sexual behavior, anger, aggression, and fear.

If the information being received in the amygdala has ever been hazardous to you before, the amygdala may deem it dangerous again and trigger your anxiety fight or flight response.

Since the amygdala retrieves the information first, it can bring about anxiety or send you into fight or flight before the cortex has time to process the information.

If the information is dangerous enough, it can take control over the other parts of the brain in order to attempt to keep you safe, which makes your whole body respond.

## Cortex ANXIETY

The cortex processes information and makes meaning of it. It is the place in the brain that is responsible for consciousness, thought, memory, emotion, language, reasoning, etc.

The cortex processes the senses that are brought in. If information that is being processed evokes an emotion, such as anxiety, it can alert the amygdala.

The cortex does not create anxiety, it initiates it.

When the cortex processes information and deems it as anxiety provoking, this type of anxiety can be relieved through logical thinking and reasoning, like CBT treatment.

Usually, therapy for anxiety uses cortex based approaches. However, if the amygdala is activated, cortex based approaches does not work.

To utilize the cortex for reducing anxiety, changing thought patterns before the amygdala is activated can be more effective.



# Anxiety and our Fight/Flight/Freeze Response

Your amygdala will trigger this response when it believes sensory information that your brain took in is considered dangerous. This can be triggered before you even have time to think about it.

The amygdala takes over the cortex and activate what is called the sympathetic nervous system so that your body will do whatever it needs to survive.

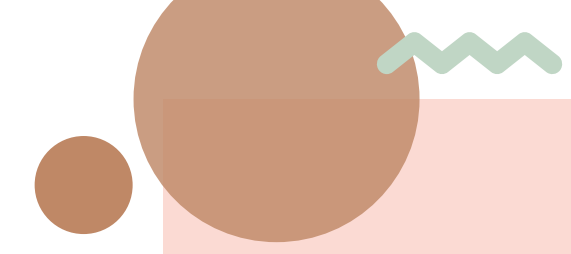
Your amygdala will decide which reaction to use based on the senses its taking in. Sometimes it may choose “freeze”, when at times you may choose “fight”.

Some people feel they have a “typical way” they respond to a dangerous event. This may be because your brain has remembered effective ways to handle specific situations. For example, an adult may feel they usually freeze because that was how they responded to their father yelling at them. The brain remembers this as an effective way to deal with high stress situations and do the same when the brain is triggered similarly.

Your brain may activate the fight/flight/freeze response when it would not activate it in other people's brains. While there are some pre-programmed responses (fear of snakes), your experiences dictate what you fear vs. what other people may fear.

When you are in fight or flight, you may experience: Your heart rate and blood pressure increases, pale or flushed skin, dilated pupils, narrowed vision, tense muscles, sweat, shaky, sensitive hearing, dry mouth.





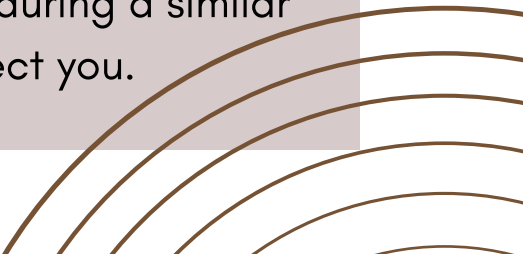
Brain takes in information  
Sights, Sounds, Touch, Smells, Taste

Brain sends info to Amygdala and Cortex. It gets to Amygdala first.

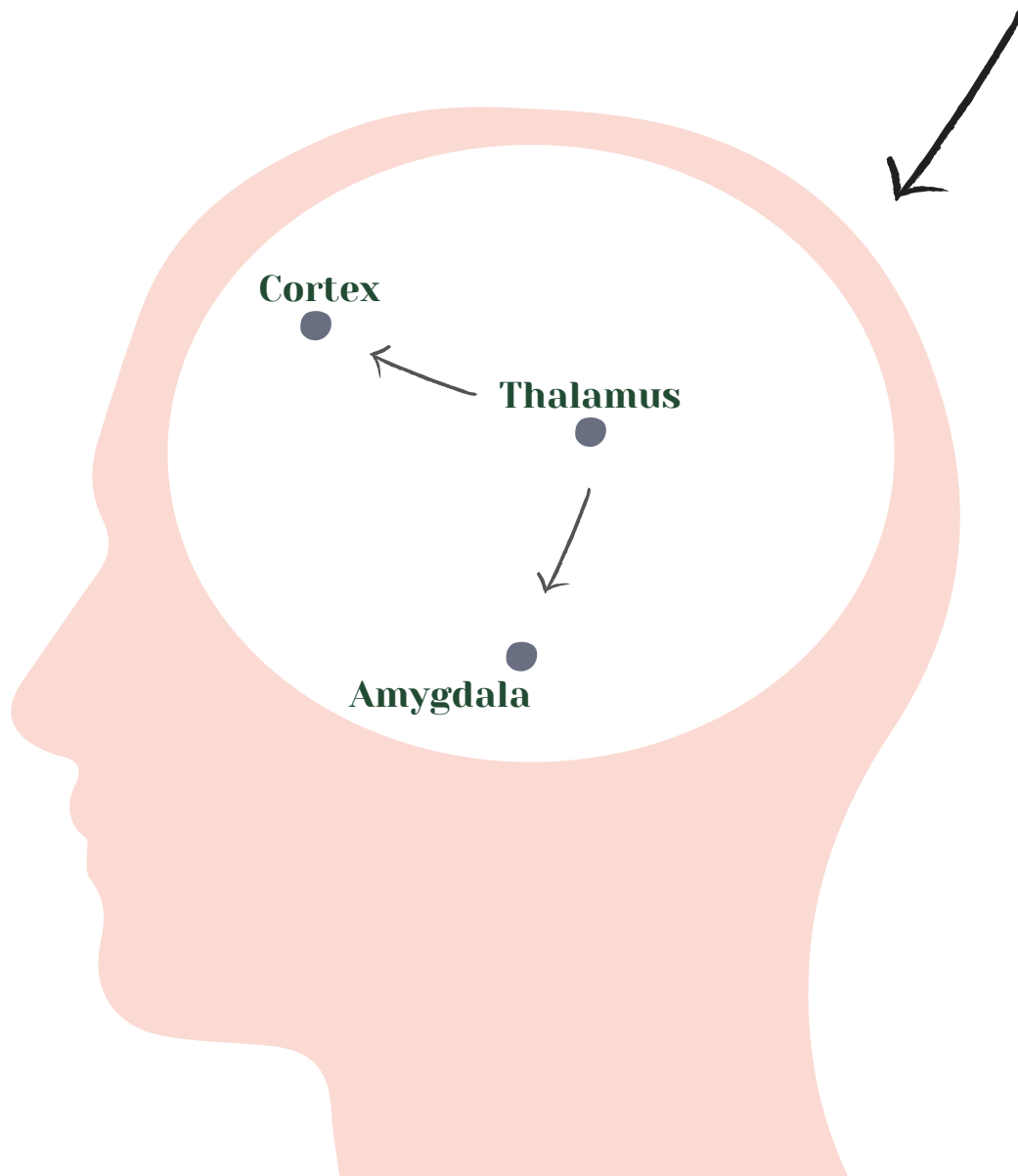
Amygdala assesses information to figure out if this information is dangerous or not. If the amygdala thinks you're in danger, it activates negative emotions or fight/flight/free response.

Information is sent to the Cortex. The cortex processes the information and if it reasons it as anxiety provoking, it will alert the amygdala.

The amygdala can activate fight/flight/freeze response, or can activate the negative emotions experienced during a similar emotional memory in attempt to protect you.



**Sights, Sounds, Taste,  
Touch, Smells**



**Step 1: Senses start in the Thalamus which then distributes information where it needs to go.**

**Step 2: Information is always sent to amygdala for it to decide danger level. Amygdala retrieves info first.**

**Step 3: Information makes it to the cortex to process information given.**

# Conditioning Anxiety in the Brain

Negative Event

Emotional  
Reaction

Similar events and information become a trigger that activates the emotional memory.

The amygdala associates the event with the emotional reaction and pairs the two into an emotional memory.

A Similar  
Negative Event

The negative even triggers the emotional memory, triggering the same emotions felt at the time the original event happened, sometimes fight/flight/freeze response.

## Conditioning Anxiety in the Brain: Example

Boss yelled at me

Fear, the need to run and hide, guilt, shame, dread.

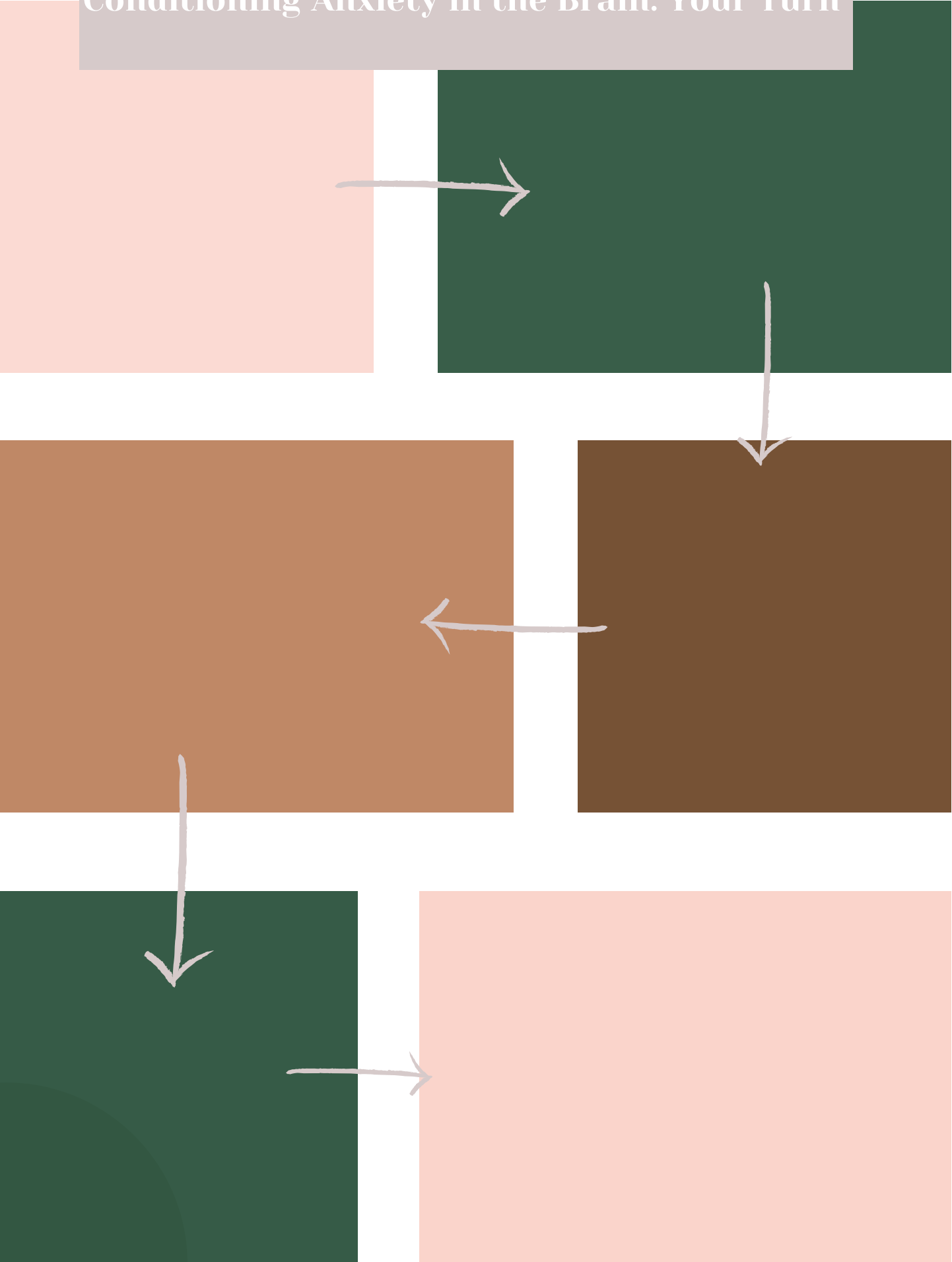
I become hyper-aware of any loud noises, disappointment, anger present around me.

Emotional memory created of anger and disappointment paired with fear, guilt, shame, dread, and the need to run and hide.

My friend text me that I hurt their feelings.

I experience the same guilt, shame, and dread. I feel like I need to run and hide so I don't text back. But now I feel guilty and anxious about being a bad friend.

# Conditioning Anxiety in the Brain: Your Turn







# Steps to Healing Amygdala Anxiety

## **Step One:**

Identify the anxieties and fears you have.

## **Step Two:**

For each anxiety, describe all the emotions that come up with this anxiety.

## **Step Three:**

Identify what the brain may be protecting you from by activating the anxiety.

## **Step Four:**

Create a hierarchy of anxieties, rating their severity 1-10, 1 indicating low anxiety, 10 indicating the highest anxiety.

## **Step Five:**

Take measures to lower reactivity in the amygdala on a regular basis through taking care of your body.

## **Step Six:**

Utilize the intervention of exposure to change the circuitry in the brain. Exposure is the art of facing anxiety provoking events while experiencing no consequences. This can change your brain's association with an event and the anxiety you feel.





## Step 1: Identify Anxieties

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## Step 2: Pairing Anxiety with Emotions

For each anxiety listed, write the emotions you feel in addition to anxiety. You may notice it becomes repetitive but keep writing for each one. You can always search for emotion words on the internet for ideas.

1. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

2. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

3. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

4. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

## Step 2: Pairing Anxiety with Emotions Pt. 2

For each anxiety listed, write the emotions you feel in addition to anxiety. You may notice it becomes repetitive but keep writing for each one. You can always search for emotion words on the internet for ideas.

5. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

6. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

7. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

8. Anxiety: \_\_\_\_\_

Emotions: \_\_\_\_\_

## Step 3: Identify What Your Brain May be Protecting you From

For each anxiety listed, think about what your brain may be protecting you from by activating this anxiety. For example, if you wrote you are anxious about your boss, could your brain be protecting you from scrutiny, judgment, or getting in trouble?

1. Anxiety:

Protection:

2. Anxiety:

Protection:

3. Anxiety:

Protection:

4. Anxiety:

Protection:

## Step 3: Identify What Your Brain May be Protecting you From

For each anxiety listed, think about what your brain may be protecting you from by activating this anxiety. For example, if you wrote you are anxious about your boss, could your brain be protecting you from scrutiny, judgment, or getting in trouble?

5. Anxiety:

Protection:

6. Anxiety:

Protection:

7. Anxiety:

Protection:

8. Anxiety:

Protection:



## Step 4: Create a Hierarchy of Anxieties



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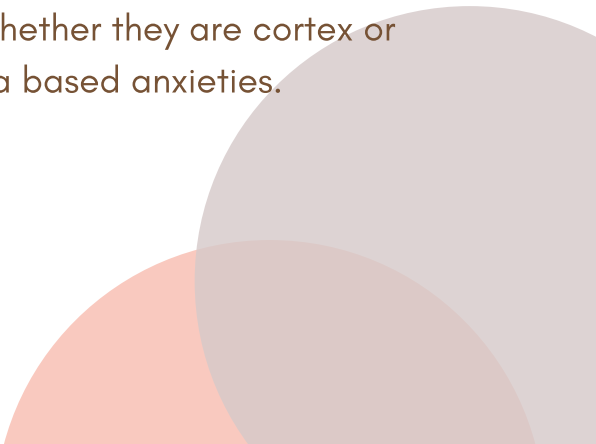
2.

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1.

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Rank your anxieties from easiest (1) to worst. Next to the anxiety, rate how disturbing it feels to you from 1-10. 1 indicating the lowest, 10 indicating the highest. Label whether they are cortex or amygdala based anxieties.



## Step 5: Lower Amygdala Reactivity

### PROMOTING RELAXATION

Diaphragmatic breathing: Deep breaths that completely fill the lungs with oxygen to calm the amygdala. Also called "Belly Breathing" because the goal is to raise the diaphragm while breathing rather than the shoulders.

Aerobic Exercise—Exercise acts as a “reset button” for the amygdala. Exercise completes the flight/fight/freeze circuit, which lowers the chance of the circuit being easily triggered throughout the day.

Yoga—Yoga not only completes the fight/flight/freeze circuit, it also is a great way to accomplish diaphragmatic breathing. Yoga is a form of meditation, focusing on breathing and stillness, which lowers reactivity in the amygdala.

Meditation: Quiets thoughts in the brain, which slows the brain's reaction response time.

Stretching and Massage: Reduces muscle tension which reduces parasympathetic responding, our fight/flight/freeze response.



# Step 5: Lower Amygdala Reactivity

## PROMOTING SLEEP

Sleep deprivation is a form of torture, especially when the REM cycle isn't completed. Sleep deprivation increases reactivity in the amygdala. Here are techniques for promoting better sleep:

1. Relaxation techniques before bed
2. No electronics or lights before bed. Light activates the amygdala
3. Aerobic exercise
4. Go to bed and wake up at the same time every day
5. No napping
6. Replace activating thoughts with relaxing ones
7. Journal your worries during a designated time before bed
8. Create a relaxing and sleep promoting environment
9. Avoid caffeine, alcohol, and spicy foods in the late afternoon and evening
10. Use relaxing breathing techniques and meditation before bed
11. If you can't fall asleep after thirty minutes in bed, get up and do something relaxing
12. Avoid sleep medication

## Step 6: Addressing Anxiety

### THE AMYGDALA

In order to reduce anxiety, the amygdala needs to be activated by slowly exposing it to an anxiety provoking event. A person anxious about social settings will slowly expose themselves to situations that would evoke anxiety, and simply sit within the situation until their anxiety goes down.

Exposure therapy is an intervention used by therapists and should be completed in a therapeutic setting. While exposure should be done in the presence of a therapist, there is a small exposure exercise that can be done on your own to help recircuit the brain. Use this exercise only when your anxiety is low to practice.

When minimally anxious, identify the thoughts and feelings you have associated with the anxiety.

Rate how anxiety provoking the situation is from 1-10. 1 is low anxiety, 10 is high.

Sit with the feelings of anxiety, close your eyes and imagine a beach scene. Picture your anxiety as a wave, and the crest of the wave is the height of your anxiety. Now picture the wave breaking on the shore, reminding you that feelings come and go. Anxiety can heighten but it can also lower and subside. Give yourself permission to feel anxiety, knowing that it can also pass like a crashing wave. Let your breath match the crest and crash of each wave.

Notice if your anxiety lowers any severity points with the crashing of the waves. This is an example of sitting in the anxiety provoking situation and working on lowering the reactivity of the amygdala.



## Step 7: Addressing Anxiety

### THE CORTEX

Changing our thoughts is a great way to address anxiety even before it starts. The Cortex is where we process information to make rationalizations, memories, meanings, and more. This is where we make meaning of our anxiety. Changing thought patterns can prevent the cortex from activating the amygdala. Once the amygdala has been activated, utilizing techniques for the Cortex simply does not work.

For example, if it is your wedding day and it is snowing outside, that may not immediately trigger the amygdala since snow is not immediately dangerous to you. However, once your cortex starts processing the information, it may process that the wedding is outdoors, so snow is a terrible thing. The cortex will activate the amygdala to initiate anxiety or panic. Once the amygdala has been activated, logic and reasoning do not help.

If the brain was trained prior to this event and was more apt towards positive thinking or problem solving, the amygdala may not have been activated. Instead of believing, "This is the worst thing that could have happened, the wedding is ruined," you could instead believe, "Let's just move the wedding indoors, this stuff happens, what's important is saying 'I do'"

Training the brain towards more rational and positive thinking adds traffic to better thought patterns in the brain. Usually, there is heavy traffic towards negativity and anxiety that makes it our "go to" way of thinking. Adding traffic to the positive ways of thinking is how we rewire the brain.

Think of your primary language spoken. If you primarily speak English, there is heavy traffic for that language in the brain. There is not traffic towards Spanish. The more you learn Spanish, the heavier the traffic. In this example, your negative thinking is English, your positive thinking is Spanish. To learn the language of positivity, you must practice to add more traffic towards that language in the brain.

# Step 7: Addressing Anxiety

## THE CORTEX

So much of therapy involves Cortex based approaches and changing thought patterns. Cognitive Behavioral Therapy is a model purely designed to the changing of thoughts and challenging negative thought patterns. While there are many ways to address the Cortex, here are some common cognitive thought distortions and how to adjust them.

1. **Filtering** out the positive and simply looking at the negative.  
**How to combat:** Start a gratitude journal to help be aware of the positive.
2. **All or Nothing** thinking categorizes events as all good or all bad.  
For example, if you got small feedback on an assignment, you immediately feel you failed.  
**How to combat:** Make a list of the negative AND positive aspects of the situation.
3. **Always and Never** thinking overgeneralizations how often bad things happen.  
For example, "Good things NEVER happen to me."  
**How to combat:** If you catch yourself saying words like "Never, Always, Everything, or Nothing," change the words to something more realistic.
4. **Jumping to Conclusions** means immediately believing a situation will be negative without evidence supporting that conclusion.  
**How to combat:** Take notes of the evidence that supports or discounts your negative conclusion.
5. **Personalizing** thoughts take full responsibility for events that are not your full responsibility, leaving you feeling an irrational level of guilt.  
**How to combat:** Remind yourself what is not your fault and relinquish guilt you do not deserve.
6. **Emotional Reasoning** is when feelings become facts. If someone feels bad, it becomes a fact that the situation is also bad, though there is not evidence to support this.  
**How to combat:** Identify the feeling and challenge whether its a fact. If it is not a fact, explore how they can change the feeling to match the fact.