



Information taken from “Change Your Brain, Change Your Life” and Amen Clinics

The **Deep Limbic System** (Emotional centers of the brain), at the center of the brain (the size of a walnut), is the bonding and mood control center. Being connected to others is essential to humanity, yet when this part of the brain is off kilter, people struggle with moodiness and negativity. Certain smells and clear thinking soothe the activity in this part of the brain. The emotional shading is the filter through which you interpret the events of the day.

Functions: (critical for human behavior and survival)

- sets the emotional tone of the mind
- filters external events through internal states (creates emotional coloring)
 - pessimism could be a deep limbic system problem because, as mentioned, when this part of the brain is working too hard, the emotional filter is colored by negativity.
- tags events as internally important-emotional tagging of events is critical to survival
- stores highly charged emotional memories
 - trauma, abuse, won the lottery, birth of child
 - the total experience of our emotional memories is responsible, in part, for the emotional tone of our mind. The more stable, positive experiences we have, the more positive we are likely to feel, the more trauma....negative
- modulates motivation
 - helps get you going in the morning and encourages you to move throughout the day.
- controls appetite and sleep cycles (hypothalamus-base of the brain)
- promotes bonding and social connectedness
 - capacity to bond plays significant role in the tone and quality of our moods.
 - Problems that cause disruption of the human bonding process can occur at any stage of life. (Death, Divorce, Depression, Empty Nest Syndrome)
- directly processes the sense of smell
- modulates libido

When less active/cooled down:

- there is generally a positive, more hopeful state of mind
- more activation is possible in the cortex

When overactive/heated up/inflamed:

- negativity can take over
- depression (+shutdown in the prefrontal cortex esp. on left side)

- painful emotional shading
 - when you are sad, you interpret neutral events through a negative filter
- lowered motivation and drive
- emotions tend to take over

Females

- on average, have a larger deep limbic system than males.
- This gives females several advantages and disadvantages. Women are more in touch with their feelings, and they are generally better able to express their feelings than men.
- They have an increased ability to bond and be connected to others.
- Have a more accurate sense of smell.
- Somewhat more susceptible to depression (esp. at times of significant hormonal changes).
- Attempt suicide three times more often than men. Men's suicide attempts are successful three times more often than women's, in part because they use more violent means, and men are less connected to others than women. Disconnection from others increases the risk of completed suicides.

Grief

- Often activates the pain centers in the brain
- People who had a good relationship with the deceased heal more easily than those that did not.
 - Positive memories helps the healing where bad tend to relive the pain (anger, hurt, guilt)

Depression

- Lack of bonding and depression are often related.
- Caused by a deficit of certain neurochemicals or neurotransmitters, especially norepinephrine and serotonin
 - Can cause increased metabolism or inflammation in the deep limbic system

PMS

- is real. Women w/PMS are not imagining things the chemistry of their brain is genuinely altered and produces reactions they cannot control. The deep limbic system has a higher density of estrogen receptors than other parts of the brain, making it more vulnerable, in some women, to the estrogen changes that occur at puberty, prior to menses, after a baby is born, or during menopause. Sometimes these changes can produce dramatic effects. For some women, PMS can be debilitating or even dangerous.
- Emotional shading/deep limbic system is inflamed or more active with the drop of hormones. Events are colored as negative

“PRESCRIPTIONS”

- Accurate thinking
- Proper management of memories
- The connection between pleasant smells and moods
- Building positive bonds between oneself and others.

A. Kill the ANTS (Automatic Negative Thoughts)

- a. The state of the mind has a certain tone or flavor based largely on the types of thoughts we think
- b. Are cynical, gloomy, and complaining thoughts that seem to keep marching in all by themselves.
- c. Can cause people to be depressed and fatalistic
- d. Healing the deep limbic system requires healing moment-by-moment thought patterns.
- e. Thoughts are important and leave the development of thought patterns to chance.
- f. Every thought sends electrical signals throughout your brain. Thoughts have actual physical properties. They have a significant influence on every cell in your body.
- g. People who are depressed have one dispiriting thought following another.
 - i. When they look at the past, they feel regret.
 - ii. When they look at the future, they feel anxiety and pessimism

Step 1 Realize your thoughts are real:

- You have a thought
- Your brain releases chemicals
- An electrical transmission goes across your brain
- You become aware of what you are thinking.

Step 2 Notice how negative thoughts affect your body.

- Every time you have an angry, unkind, or sad thought your brain releases chemicals that make your body feel bad (and activate your deep limbic system).
 - i. Muscles become tense, heart beats faster, hands sweat...

Step 3 Notice how positive thoughts affect your body

- Every time you have a good, happy, or hopeful thought your brain releases chemicals that make your body feel good (and cool your deep limbic system).
 - i. Muscles relax, heart beats slower, breathe slower...

Step 4 Notice how your body reacts to every thought you have

- The deep limbic system is responsible for translating our emotional state into physical feelings of relaxation or tension.

Step 5 Think of bad thoughts as pollution

- Some people when they get emotionally upset they frequently develop physical symptoms. (freq. neg. thoughts=cancer)

Step 6 Understand that your automatic thoughts don't always tell the truth

- Unless you think about your thoughts, they are automatic; they just happen
- You don't have to believe every thought that goes through your head. Think about if the thoughts help or hurt you
- If you never challenge your thoughts, you just "believe them" as if they were true

Step 7 Talk back to ANTs

- You can train your thoughts to be positive and hopeful, or you can allow them to be negative and upset you.
- Notice when your thoughts are negative and talk back to them. Challenge negative thoughts or your mind will believe them and body will react.

Step 8 Exterminate the ANTs

- Think of the negative thoughts that invade your mind like ants that bother you at a picnic. 1-not a problem 2-3-more irritating, 10-20 may cause you to pick up and leave.
- Crush them or they'll ruin your relationships, self-esteem, and your personal power.
- Write them down and talk back to them
 - i. **ANT 1**-“Always/never thinking” All or nothing
 - ii. **ANT 2**-Focusing on the negative-your thoughts reflect only the bad in a situation or ignore any of the good. Look for things to be glad about in any situation.
 - iii. **ANT 3**-Fortune telling-this is where you predict the worst possible outcome to a situation. When you predict bad things, you help make them happen.
 - iv. **ANT 4**-Mind reading-happens when you believe that you know what other people are thinking even when they haven't told you.
 - v. **ANT 5**-Thinking with your feelings-occurs when you believe your negative feelings without ever questioning them. Feelings are very complex and often based on powerful memories from the past. Feelings can lie or not be about the truth. They are just feelings. Look for evidence behind those feelings. Are the feelings based on events in the past.
 - vi. **ANT 6**-Guilt beating-guilt is not a helpful emotion, especially for the deep limbic system. Guilt often causes you to do things you don't want to do. Words like should, must, ought, or have to. Whenever we think we must do something, no matter what it is, we often don't want to do it. Replace with I want to..

- vii. **ANT 7-Labeling**-whenever you attach a negative label to yourself or to someone else, you stop your ability to take a clear look at the situation (e.g., jerk, arrogant...) negative labels are harmful.
- viii. **ANT 8-Personalizing**-occurs when you invest in innocuous events with personal meaning (my boss didn't talk to me this morning, she must be mad at me...) You never fully know why people do what they do. Try not to personalize the behavior of others.
- ix. **ANT 9-Blaming**-very harmful. When you blame something or someone else for the problems in your life, you become a passive victim of circumstances and you make it very difficult to do anything to change your situation.

B. Kill the ANTs/Feed your Anteater

- a. Left unchecked, ANTs will cause an infection in your whole bodily system.
- b. Notice them, catch them at the moment they occur and correct them, take away the power they have over you.
- c. ANTs have illogical logic. By bringing them into the open and examining them on a conscious level, you can see for yourself how little sense to think these kinds of things to yourself.
- d. Most negative thinking is automatic and goes unnoticed. You're not really choosing how to respond to your situation, it's being chosen for you by bad brain habits.

C. Surround yourself with people who provide positive bonding.

- a. If you spend a lot of time with negative people, before long their ANTs are going to rub off on you.
- b. Negative people present unnecessary obstacles for you to overcome because you have to push your will to succeed over their doubts and objections and cynicism.
- c. It cannot be overemphasized how contagious attitudes of others are and how much hidden influence they can exert. The moods and thoughts of others directly affect your deep limbic system.

D. Build people skills to enhance limbic bonds

- a. How you get along with other people can either help or hurt your limbic system. The better you get along with those around you, the better you will feel.
 - i. Take responsibility for keeping the relationship strong/improve
 - ii. Never take the relationship for granted/nurture it
 - iii. Protect your relationship-build the other person up
 - iv. Assume the best
 - v. Notice the good
 - vi. Communicate clearly
 - vii. Maintain and protect trust

- viii. Deal with difficult issues
- ix. Make time for each other

E. Recognize the importance of physical contact

- a. The deep limbic system is not only involved in emotional bonding, it is also involved in physical bonding. Actual physical touching is essential to good health. Touch is essential to life.

F. Surround yourself with great smells

- a. Smell and memory are processed in the same area of the brain.
- b. A smell activates the olfactory nerves, which go directly to the deep limbic system
- c. certain smells can bring up very strong, clear memories, as if the whole feeling and sense of the original event were coming back to them.
- d. Smells activate neurocircuits in the deep limbic system, they bring about a more complete recall of events, which gives one access to details of the past with great clarity.
- e. Smells have an effect on moods.

G. Build a library of wonderful memories

- a. The deep limbic system stores highly charged emotional memories, some of the memories are bound to be disturbing.
- b. Whenever you remember a particular event, your brain releases chemicals similar to those released when you originally input impressions of the event. Remembering brings back a similar mood and feelings.
 - i. People who had a lot of painful experiences (childhood/bond w/parents) already have a chemical imprint on the brain that is negative. They will tend to take in new events in a negative way.
 - 1. This pattern is difficult to change because it sets up a whole way of view life: the early patterns continually predispose the people toward taking things in such a way as to prove to themselves that they live in a negative universe. To change the pattern, they actually have to change their brain chemistry by remembering positive things. The brain then takes on the same chemical patterns that were inputted at the time the healthy events occurred.
- c. Make a list of the ten happiest times in your life. Describe them for yourself in detail, using as many of the five senses as possible (colors, smells, sounds...)
- d. If you have been involved in a long term relationship with someone, recollecting the history of your happy times together will encourage the bond between you. Positive memory traces actually encourage behavior that strengthen the bonds.

H. Try Physical Exercise

- a. Can be very healing to the deep limbic system by releasing endorphins that induce a sense of well-being.
- b. It increases blood flow throughout the brain, which nourishes it and resets the deep limbic system to a healthy level, which in turn affects the person's mood.
- c. Exercise gives you more energy, increases metabolism, normalizes melatonin, allows more of the natural amino acid tryptophan to enter the brain, enhancing mood.
- d. Find an activity you enjoy.

I. Watch your Limbic Nutrition

- a. Deep limbic system needs fat in order to operate properly (Omega-3 fatty acids, protein)
- b. Low levels of dopamine, serotonin, and norepinephrine are associated with depression.
 - i. Low serotonin-worrying, moodiness, emotional rigidity, irritability-eat complex carbohydrates
 - ii. Low norepinephrine and dopamine-depression, lethargy, trouble focusing, negativity, and mental fuzziness.-eat protein, no simple carbohydrates

J. Common Limbic Meds

- a. Antidepressant meds or supplements AFTER identifying the underlying cause of patient's symptoms
 - i. SSRIs only work in 1 of the 7 types of depression
 - ii. Exercise, Fish Oil & ANT Eaters works 83% of the time vs. Prozac works 51%, Prozac + Fish Oil worked 57%
 - iii. Mood
 - 1. Wellbutrin=Low PFC
 - 2. Effexor=Low PFC + AC
 - 3. Cymbalta= Low PFC + AC
 - 4. SSRI=AC
 - iv. Pain
 - 1. Cymbalta
 - 2. Lyrica
 - 3. Neurontin