

The Amygdala

The Amygdala

by Dr. John Veltheim

BASIC FUNCTION

The amygdala is an almond-shaped structure in the center of the brain. It has direct links to the reptilian brain, the limbic brain, and the cortex, and is the key to our vital survival mechanisms. It has the ability to observe any situations we are confronted with, assess them as either potentially dangerous or harmless by scanning its memory banks for previous similar experiences, then make an immediate decision as to whether we are in danger. If the decision is that we are in a threatened state, it sends signals to the appropriate areas of the brain to take action to avoid the danger. This constitutes an early warning system that is very sensitive. This sensitivity is important because it is so essential to our survival. Problems start occurring when the amygdala becomes oversensitive. The memory banks of the amygdala constitute a storehouse of our emotional memories and the source of our feelings and reactions to life. This function has been scientifically demonstrated by observing people who have had the connections severed between the brain and the amygdala (the infamous prefrontal lobotomy). These people become devoid of feelings or memory of feelings. They do not feel emotions such as anger, fear or rage or recognize friends or family.

The Evolution of the Amygdala

THE REPTILIANBRAIN FUNCTION

The Amygdala originally developed from our most primitive sense--the sense of smell. The olfactory lobes contain cells that analyze odors. As the brain grew more complex, additional layers formed to enable these cells to be more sophisticated in differentiating the various types of smells. Deep sexual urges also developed in association with this olfactory function. This leads to more specific knowledge for the brain to react with in any given situation.

THE LIMBIC SYSTEM

Mammalian evolution bought about the development of further layers to include the capacity to experience a whole new range of inputs. These included love, hate, anger, fear, panic, anxiety, and even altruism. These functions are strongly linked to the hormonal system via the hypothalamus which then secretes corticotrophin-releasing hormones (CRH) that stimulate adrenaline, epinephrine, and norepinephrine to give far-reaching effects throughout the body and more deeply imprint the emotional memories and feelings into the long-term memory banks of the fascia of the body. This sets up a library file that is cross-indexed to many associated experiences with the event. This is where the memory of a distressing event goes beyond smell. The body also remembers all the associated factors from each of the sense organs. You may be having a strong allergic reaction to a chemical in contact with your skin--such as a bee sting. The smell associated with the chemical will be remembered, as well as any other smells around at the time. You will also imprint a memory from the other sense organs. The color of the bee, the sounds related to the experience--the sound of the buzzing or even the song playing on the radio at that particular time--the touch feeling of the bee, or even the presence of a particular person near you at the time. You may also have an association to the theme of the book you might have been reading at the time. All these things are computed into the memory banks to be dynamically associated with the allergic reaction to the bee sting. In the future, any of these factors could set off the beginning of an allergic bee sting reaction by the amygdala unless it is over-ridden by the logical thinking of the cortex.

THE CORTEX

Next came the powerful tools of learning and memory. The storage of these memories and learned experiences enabled life-saving decisions to be made based on recognizing smells from the past that were good or bad. (It is interesting to note the strong relationship implied here between feelings of love and hate for someone and our olfactory memory banks. We fall in love with a person or hate them instinctively because of their smell and the associations we have stored with that smell.) The thinking brain covers this primitive reptilian brain structure. Now we could think and plan, comprehend what is sensed, coordinate appropriate action, and discriminate between events. The cortex has the ability to dampen down the primitive emotional reaction and bring about 'civilized' behavior. The cortex, when functioning properly, gives us the choice to act on our feelings or to control them. (It will also stop us from having an allergic bee sting reaction to the song that was playing.) The Amygdala would have us hit the person who is annoying us or whose smell, looks, or mannerism elicit painful associated memories from past 'fight/flight' reactions. The cortex rationalizes the

negative connotations of hitting the person such as the social implications or other complicating factors, and stops our emotional impulse.

The Amygdala Associations

The amygdala has many complex linkages to the brain that are of immense importance to the BodyTalk practitioner. One loop goes to the hypothalamus to cause the release of CRH, which constitutes the body's primary emergency response mechanisms. (The fight/flight reaction stimulated by adrenaline, etc.) Another loop is to the locus ceruleus in the reptilian brain stem, which manufactures norepinephrine and disperses it throughout the brain. This causes a marked heightening of brain reactivity--particularly in the sensory areas. This leads to deeper memory imprinting, louder warning signals, faster reactions, and more emotionally directed brain function. A third loop goes to the cortex. This is to enable us to utilize the thinking brain to logically evaluate any situation, decide what to do, and override the 'inappropriate' limbic reactions. The most important thing here is that the first two loops were the first developed and are closely associated with primitive survival. This was the most important function for 98% of our evolution time. For the last 2% of our evolution, the reptilian primitive survival mechanism is less necessary and it is more beneficial for us to have the cortex in greater control. The fact remains, however, that the first two loops to the hypothalamus (fight/flight) and the reptilian/limbic brain are much shorter, and more highly developed than our links to the cortex. This has created many problems for 'civilized' society because the higher centers of the brain do not govern all our emotional, reactive (allergy), and sensory functions. Whenever the sensitive Amygdala considers a stimuli to be crucial (which is a value judgment not necessarily suitable for an organ schooled in the jungle), the cortex defers to the limbic and reptilian systems because of the faster loop that bypasses the thinking center of the brain. This gives the emotional centers enormous power to influence the functioning of the entire bodymind complex beyond the rationalization of the logical thinking mind. This can easily be seen in times of our life when we were strongly involved with an emotion and behaved in an irrational manner. In these cases the Amygdala has 'hijacked' the brain. The degree to which this happens can be termed our 'emotional intelligence'.

When Things Go Wrong

HOW DOES THE BRAIN GET 'HIJACKED'?

1. A sensory signal comes into the body in the form of a sight, smell, touch, or sound, or any combination.
2. The signal travels to the thalamus, which decides whether the stimuli should be allowed any further into the brain. (The thalamus acts as a filter to the entire world's input. If it didn't filter out most of the sensations around us we would be overloaded beyond belief. We should also remember that if the patient is acutely oversensitive to the environment, then the real culprit may be the thalamus and not the amygdala. It may be that the thalamus is not filtering correctly and needs to be treated specifically.)
3. From the thalamus the signal goes to the amygdala, which quickly processes the signal by searching through its memory bank.
4. The amygdala then decides whether the signal is an emergency by comparing to past experiences.
5. If the amygdala declares an emergency, it triggers the hypothalamus and the limbic/reptilian brain into the survival mode.
6. In the meantime, the thalamus also sent the same signal to the cortex for processing but because that pathway is slower than the pathway to the Amygdala, the survival reaction has already started before the cortex can have a say. Hence the brain has been hijacked, the emotions are in charge, and rational thinking is swamped.

THE VARIETY OF RAMIFICATIONS

If the signal is associated with a previous very strong situation in our life, then the new reaction will imprint deeper memory patterns into the bodymind complex. This will make the situation worse the next time as well as set up long term stress reactions within the body. This leads to post-traumatic stress disorder (PTSD) where these deeper imprints make the nervous circuits hyperreactive to stimuli associated with a certain memory. This can lead to an amygdala-induced reaction even when the trigger may not be the original problem rather a metaphor associated with it, such as another event that is merely similar. There are cases of people with bad cat allergies who have been triggered into a severe allergy reaction when they heard a cat meow in the room. They later found out that there was no cat in the room. What they heard was a cat on a television ad. The individual whose system has become oversensitive can be triggered by anything that associates with past memory and brings them into a reaction. This relates to many disease patterns. Once the whole limbic/reptilian system has been placed into reaction mode the end symptoms can vary enormously according to nature of the person involved.

Examples would be:

1. Allergy reactions as described earlier with the cat. The chemical sensitivity can become a vicious cycle because the body develops reaction habits. This means that even if the allergy is treated, or the body desensitized, the memory in the amygdala remains. The patient is then triggered off, not by the actual chemical of the allergen, but by the amygdala's emotional association with that chemical. The end symptoms can be identical and the patient believes that they still have an actual allergy to the chemical even though double blind allergy tests say otherwise. (This is why systems such as NAET, NET, and BodyTalk are getting far better results than conventional systems because they specifically address the stored emotional association as part of the treatment.)
2. Food intolerances. The eating of certain foods with their related smells, tastes, or emotional association can trigger classic allergy type symptoms or 'masked' ones such as digestive disorders, mood swings, pain, depression, and fatigue, to name a few.

BodyTalk Treatment

The BodyTalk approach is multifaceted. The standard protocol taught in modules 1 and 2 should first be observed. Then the following concepts will give you a greater variety of questions to ask and clues on where to start asking.

ALLERGIES AND FOOD INTOLERANCES

When treating the body chemistry:

1. Establish the allergy to be treated.
2. Ask if it first needs to be treated to the cortices. If yes, go to 3. If no, ask what links to go to first. For example, it may want you to link the allergen represented by the saliva to an organ such as the liver, or an endocrine, body part, or brain part--such as the amygdala.
3. Ask if the link is to the general limbic system (as taught in Module 1). Sometimes the innate wisdom will tell you to link to a specific part of the brain. Common ones are the sensory area of the cortex or limbic brains, the reptilian brain (locus ceruleus), the amygdala, the hypothalamus, etc.
4. Once you have established the link, have the patient hold it while you tap out the cortexes in all the positions.
5. Ask for further links to the allergy. This is a repeat of the 'no' answer in step 2. This time, be very careful to ask for emotional links. With the emotional links you then find the emotional event(s) associated with the allergy, and balance them with the classic emotional treatment while linking with one hand to the saliva. (This treatment is the three fingers on the face and roll the eyes treatment.)
6. Ask for consciousness links and treat accordingly.

When treating the brain:

1. Look for specific links between all the things we have discussed here: hypothalamus, amygdala, thalamus, cortex, locus ceruleus, and the linking or repairing the fibers between them. (Remember, when a computer is not printing to a printer, sometimes the problem is with the computer or the printer; other times it is a faulty cable in between.)
2. Look for links of any of these to any other body part.
3. Look for a link between any of the brain parts in (1.) and the emotional treatment.
4. Treat specific consciousness to any of the specific brain parts.

Environmental treatment:

1. Use the environmental treatment to link the allergy to any current environmental factor that is aggravating the situation. The external link will probably come through the amygdala or thalamus as the input channels, then link to the saliva and another part of the brain or body.

CASE STUDY:

The patient was a 45-year-old woman who had spent many years in India. During that time she had suffered many severe parasite infestations and been treated with antiparasitic drugs to the point that she was now intolerant of them. In a recent trip to South America she was infested again and treated with BodyTalk by her traveling companion. She improved at first and the BodyTalk said that the parasites were gone. She then became very sick again with all the parasite symptoms--cyclic diarrhea, constipation, severe pain, weakness, headaches, etc. Despite the presence of her symptoms, the BodyTalk said there were no parasites. I met her at this stage and gave her a BodyTalk balancing. Beyond the normal procedures

the following parts of the treatment are relevant to this article.

1. Body chemistry: no parasite present--BUT--the memory of parasites is present. In this case the patient had been so very ill so often in India that the body had an imprint of the disease symptoms firmly imbedded in the memory banks of the Amygdala and the intestines. The presence of a simple parasite triggered the memory response that perpetuated the disease – giving symptoms even though the parasite was gone.
2. Brain: link amygdala to cortex
3. Link amygdala to hypothalamus
4. Link hypothalamus to cortex
5. Disassociate the memory between the amygdala and the intestines; the patient held the head (intent to amygdala) and the position for the E.S.T. (three fingers on the face, roll the eyes and think of the illnesses in India); I then lightly stimulated all the intestines with one hand while I tapped out the head and heart with the other.
6. I then had to link the three brain parts (amygdala, cortex, and hypothalamus) to the diaphragm to ‘download’ the emotional holdings. There was a great deal of peristaltic activity.
7. Consciousness: Consciousness of the brain --consciousness of parasitic memory to the heart The above-mentioned treatment and protocols are just to give you ideas. The important thing to remember is the principles outlined in this article. By understanding the physiological and sychological functions at play in so many disease pattern, you will better be able to use your knowledge and intuition to focus on the specific links that will give greater benefit to the patient.

ACKNOWLEDGMENT:

Much of the scientific basis of this article was sourced through an article--Mind-Body aspects of Multiple Chemical Sensitivity Part 1: The Amygdala, written by Robert S. Mayer, Ph.D. and published in the Fall 1999 edition of THE HUMANECOLOGIST.