

# Approaching A Theory of Emotion: An Interview With Candace Pert, Ph.D

By Lynn Grodzki, Fellow

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**T**he New Identify Process (NIP) and other forms of emotive psychotherapy embrace the healing tradition of *catharsis*--intense emotional expression is elicited within a contained therapeutic environment. This emotive therapy follows in a direct line from the earliest forms of ancient healing arts through recent scientific studies exploring the link between body and mind. The challenge for clinicians in answering the criticism about the use of catharsis is to conceptually bridge past and present in evaluating emotive methods.

Happily, an unexpected voice has joined the debate about the importance of emotional therapy. Candace Pert, Ph.D., researcher and pharmacologist, may help point the way to a resolution of a problem that has faced clinicians using emotive methods for the last 100 years. In adding her biochemical research perspective to the discussion of the meaning and value of catharsis, she is addressing a weak point and the biggest problem that exists in the field of emotive, experiential psychotherapy. She is helping to formulate, for the first time, a unified theory of emotion.

First, a bit of history. Although the use of catharsis was a key element of treatment during the first 200 years of early psychotherapy (with Mesmer, Charcot, Janet, and Bruer), Freud's rejection of this cathartic method within psychoanalysis and his reliance on free association, "The talking cure" as a sufficient form of abreaction, spread until dominating the field. By 1920, methods of emotive psychotherapy moved to the fringes of conventional psychological practice. Freud gave as one of his reasons for rejecting emotive methods his frustration as a neurologist in trying to theorize about the workings of emotion. Although some of his colleagues continued to rely on methods of catharsis (notably Ferenczi, Brown and Reich) and although a second wave of interest sparked the development of additional methods in the early 1950's (by Janov, Lowen, Perls, Casriel and Jackins) the academic literature continues to reject catharsis, following Freud. Methods of emotive psychotherapy, when mentioned, are usually discounted as unproved and ineffective at best, or counterproductive and harmful at worst. Currently, the criticism of emotive therapy is based on the results of often flawed, past research about catharsis.

In some studies, catharsis is misdefined to mean any kind of ventilation (from watching a wrestling match to screaming, to hitting another person). Because clients require a safe space (environmental containment) in order to achieve a true experience of catharsis, the results that clinicians can produce in their office settings are hard to reproduce in laboratory settings. But the

biggest hurdle to researching and validating emotional methods has been the vagueness about emotion itself. Until recently, little has been understood from a scientific basis about what emotion is and is not.

Psychological textbooks published only thirty years ago state, "Emotion is virtually impossible to define . . . except in terms of conflicting theories" and "No genuine order can be discerned within the field." As long as emotion remains an abstraction, lacking a unified theory base, it is impossible to research and validate methods of emotive therapy. The kinds of questions that need to be answered include: how emotion is manifest, how memory and emotion interact, whether emotion is concrete (real) or conceptual (a construct), if concrete, how emotion acts in the body, and how unexpressed emotion is stored.

Enter into this discussion Dr Candace Pert. For the past twenty years, Pert has been studying the movement of amino acid chains in the human body. In the process, she is unraveling the mystery of mind-body communication and changing forever the way we understand emotion.

For Pert, pharmacologist and professor at Georgetown University, the mind is not just in the brain -- it is also in the body. The vehicle that the mind and body use to communicate with each other is the chemistry of emotion. The chemicals in question are molecules, short chains of amino acids called peptides and receptors, that she believes to be the "biochemical correlate of emotion." The peptides can be found in your brain, but also in your stomach, your muscles, your glands and all your major organs, sending messages back and forth. After decades of research, Pert is finally able to make clear how emotion creates the bridge between mind and body.

Candace Pert lives in the world where emotions make scientific sense. As former Chief of Brain Biochemistry at the NIH for 13 years, she studied the inner workings of the body with an eye towards identifying and locating peptides and receptors. She became convinced these chemicals were the physical manifestation of emotion. In 1993, Pert appeared on Bill Moyer's landmark TV program *Healing and Mind*, where she explained her theories of emotion to a national audience. She attracted attention for being that rare scientist who can explain their work to a lay audience with a sense of humor and passion. These days Pert spends substantial amount of time in Rockville, Maryland, as a consultant on the trials of a new drug, Peptide T, that is part of a non-toxic AIDS therapy. She takes some time from her research and teaching schedule to lecture internationally on the issues of neuropeptides and mind-body communications.

I began to correspond with Pert several years ago, and in May of 1995, as a result of her desire to be part of the 1995 ISNIP Conference, we sat down to talk about a subject that interests both of us: the need for a unified theory of emotion. She offered some new, startling insights of her own that explain how experiential forms of psychotherapy and alternative medicine work. What follows is a portion of our discussion.

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**Lynn Grodzki:** How do you understand the connection between memory and emotion?

**Candace Pert:** Experiments show that the hippocampus area of the brain [part of the limbic system] is the access or gateway into the whole emotional experience. Almost every variety of peptide receptor is found in the hippocampus. Through the peptide network, which is anything that has peptide receptors on it, you can access different memories, mood states or developmental stages. Strong emotions are the key variable that make us bother to remember things.

There is a lot of evidence that memory occurs at the point of synapse, there are changes that take place in the receptors. The sensitivity of the receptors are part of memory and pattern storage. But the peptide network extends beyond the hippocampus, to organs, tissue, skin, muscle and endocrine glands. They all have peptide receptors on them and can access and store emotional information. This means this emotional memory is stored in many places in the body, not just the brain. The autonomic nervous system is pivotal to this entire understanding. Its importance is much more subtle than has been thought. Every peptide that I have every mapped and more can be found in the autonomic nervous system. There is an emotional coding to the way our autonomic patterns are elaborated.

**LG:** The autonomic nervous system includes the spinal cord and the ganglion that are down either side. Is it possible that emotion could be stored in places like this indefinitely?

**CP:** Absolutely. Emotional memories are our earliest memories. One of my earliest memories is that I struck a match when my mother was making dinner. I just started a tiny fire, and she came over and put it out with her dishrag. I can still see the terror in her face. I think I must have been one year old. Emotional memories are long term memories, stored where we need them, for survival.

**LG:** Let's say you had forgotten this memory and you are in a situation where something similar happens, perhaps your own daughter plays with matches and you find your reaction has an intensity that suggests an earlier incident was attached to it. How is early emotional memory retrieved in the body?

**CP:** You can access emotional memory anywhere in the peptide/receptor network, in any number of ways. For example, if you have a memory that has to do with food and eating, you might access it by the nerves hooked up to the pancreas. You can access through any nodal point in the neural loop. Nodal points are places where there is a lot of convergent information with many different peptide receptors. In these nodal points there is potential for emotional regulation and conditioning.

**LG:** So we are programmed to be able to repeat emotional experience and we can access it through the body in many ways. What happens to emotions that are not able to be fully expressed?

**CP:** I have a whole theory about this. I believe that emotion is not fully expressed until it reaches consciousness. When I speak of consciousness, I include the entire body. I believe that unexpressed emotion is in process of traveling up the neural access. By traveling, I mean coming from the periphery, up the spinal cord, up into the brain. When emotion moves up, it can be expressed. It takes a certain amount of energy from our bodies to keep the emotion unexpressed. There are inhibitory chemicals and impulses that function to keep the emotion and information down. I think unexpressed emotions are literally lodged lower in the body.

In my mind, there are levels of integration. You are integrating lower brain areas when you move the emotion up and get it into consciousness. That's where you begin comprehension. I often tell a story in my lectures. I show a picture of a woman with hot coffee, who has dropped the cup and burned herself. She reacts to the scalding coffee by being startled and feeling pain. The emotional reflex moves up and up and up the body. When it finally gets to the level of the thalamus she says, "Oh, it's hotter than it usually is." But then I make a joke. I say, "It's only when it gets all the way up to the cortex that she can actually blame her husband." That's where we put the whole spin on it. Unexpressed emotions are buried in the body -- way, deep down in the circuitry of the organs, or the GI tract, or a loop in a ganglion. We even know what the memory storage looks like. It's protein molecules coupled up to receptors. Some thought it only gets stored in the brain. But it looks like that in the body, too. Your memories can get stored that way in a pancreas, for example.

**LG:** There is a belief that unexpressed emotion is harmful to the mind and body. IF you haven't fully grieved a loss, for example, your weakened immune system might make you a candidate for an illness, like cancer. How do you understand it, as a scientist?

**CP:** It think there is overwhelming evidence that unexpressed emotion causes illness. I'm a molecular Reichian!

**LG:** Reich had a model of working with emotion that is sometimes called the "conflict model" of catharsis. He thought there were two psychic forces at work in every individual. One is the force that wants to express emotion. The other is the force that seeks to prevent its expression, which he termed resistance. He thought the pressure of the two forces caused stasis, so his therapy techniques were designed to exhaust and weaken the resistance, to allow emotional expression to occur.

**CP:** I see it this way. The raw emotion is working to be expressed in the body. It's always moving up the neural access. Up the chakras, if you will, but really up the spinal chord. The need to resist it is coming from the cortex. All the brain; rationalizations are pushing the energy down. The

cortex resistance is an attempt to prevent overload. It's stingy about what information is allowed up into the cortex. It's always a struggle in the body. The real, true emotions that need to be expressed are in the body, trying to move up and be expressed and thereby integrated. That's why I believe psychoanalysis in a vacuum doesn't work. You are spending all your time in your cortex, rather than in your body. You are adding to the resistance.

**LG:** You suggest a vertical model of catharsis, letting the emotion move up the body, perhaps finding ways to relax the cortex to allow the unexpressed emotion to be first experienced and then cognitively integrated.

**CP:** Let the emotion all bubble up. Let the chips fall where they may. My personal experience using catharsis was with the New Identify Process. I think the NIP bonding might serve to relax the cortex and let the emotion come through. I believe that the process of catharsis is not complete without saying things, because we must involve speech and the cortex, to know that the emotion has come all the way up and is being processed at the highest level. To feel and understand means you have worked it all the way through. It's bubbled all the way to the surface. You're integrating at higher and higher levels in the body, bringing emotion into consciousness.

## What is this thing called emotional experience? The peptide hypothesis.

Where there is a mood, is there a molecule?

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The question of the nature of subjective emotional experience, or affect, remains a central issue in both psychology and [philosophy](#), intimately related to the question of the nature of consciousness. My previous post reviewed evidence challenging theories stemming from William James' notion that emotional experiences involve the feeling of bodily changes. Specifically, these theories cannot account for the sparing of emotional experience in spinal cord injuries, or for the speed and complexity of emotional experience. What, then, IS the source of emotional experience: the directly-known and self-evident qualia of feelings and desires? Is there a physiological process that is associated with such experience? A possible answer is surprising and controversial: a physiological process hypothesized to be closely identified with many emotional experiences involves specifiable neurochemical systems associated with some of the most ancient molecules in the body: the peptides. The peptide hypothesis can be stated succinctly: where there is a mood, there is a molecule.

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Peptides are molecules formed of chains of amino acids strung together like beads on a string, ranging from a few in number to hundreds. Longer chains (e.g., 200 units) are conventionally known as proteins, so peptides are basically relatively short proteins. Like proteins, peptides are direct products of [genes](#): genes physically construct the amino acid chains. The sequencing of amino acids in the chain determines the shape of the molecule and therefore its physiological effects. The peptides function by fitting into receptor sites on cell membranes like keys into locks. Peptides composed of shorter chains function like neurotransmitters, in that they have relatively rapid but transient effects. Peptides composed of longer chain function like [hormones](#), in that their effects are slower but longer lasting. Because of this dual [identity](#) peptides are sometimes referred to as neurohormones.

Peptides are ancient substances, indeed primordial. Many peptides functional in human beings can be found in the simplest microbes, indicating that the genes responsible for their construction derive from our last common ancestor: many millions and indeed billions of years in the past. For example, the peptide Gonadotropin Hormone Releasing Hormone (GnRH), which is associated with sexual functioning and possibly erotic feelings in human beings, is a sexual [pheromone](#) in yeast (Loumaye and colleagues, 1982). Other peptides including insulin, beta endorphin, and ACTH are found in single celled microbes. Neuroscientist Candace Pert noted In her book *Molecules of Emotion* that Charles Darwin predicted that the physiological basis for emotions would be conserved throughout evolution, and that appears to be the case with many peptides.

Pert also outlined several lines of evidence consistent with the peptide hypothesis. Perhaps most compellingly, many psychoactive [drugs](#) known to influence specific moods have endogenous analogs: that is, analogs in the form of substances found naturally in the body. Many of these are peptides. For example, the affective aspects of primary drives such as [hunger](#), thirst, [sex](#), and pain have been associated with specific peptides: angiotensin, ghrelin and insulin, GnRH, and substance P, respectively. Also, manipulation of the actions of many peptide neurohormones by agonists (which support their functioning) or antagonists (which

oppose it) can have predictable effects on moods. For example, specific drugs thought to alter peptides are known to influence feelings of elation, [depression](#), anxiety, [panic](#), trust, nurturance, and pleasure. Moreover, receptor sites sensitive to these putative mood altering neurohormones are located in limbic system [brain](#) structures classically identified with emotion.

Although we cannot have access to subjective experiences of others, there are ways to study the subjective effects of drugs indirectly: even animals can provide a sort of "self-report" of their feelings. Rewarding or punishing effects of drugs can be demonstrated in rats in studies of conditioned place preferences: if a certain spatial position in a n enclosure is associated with a positive drug, the animal will show a preference for that place; if the drug effects are negative, it will avoid that place. Similarly, drug [discrimination](#) techniques can provide detailed evidence relating to the strength and quality of the subjective impact of specific drugs. Results of such studies provide powerful converging evidence that emotion is subjectively experienced in nonhuman animals.

The discrete emotions emerging from studies of the peptide neurochemical systems are different from, but compatible with, the primary affects associated with universal facial expressions such as [happiness](#), sadness, [fear](#), and [anger](#). For example, the primary affect of fear is a response to danger in the environment that requires communication at a distance, and the face is well suited to display at a distance. Fear may involve a number of neurochemical systems: e.g., panic associated with cholecystokinin (CCK), [stress](#) associated with corticotropin releasing hormone (CRH), and/or anxiety associated with the "anxiety peptide," diazepam binding inhibitor (DBI). However, the facial expression of fear may be equally relevant in situations of panic, stress, and anxiety. Therefore, "fear" emerges as an ecological reality associated with universal facial display that may not be associated with any one brain system but rather be potentially composed of a number of fear-related "modules" at the physiological level.

Other discrete emotions are displayed and communicated more intimately. Feelings of bonding, nurturance, and erotic arousal are communicated via physical immediacy, eye contact, touch, pheromones, and the sense of radiant heat. Facial expression is relatively unimportant and ineffective as display at such intimate distances.

Portions taken from R. Buck, Human [Motivation](#) and Emotion, 2nd Edition, Wiley 1988; and R. Buck (1999). The biological affects: A typology. Psychological Review. 106, 301-336.

Loumaye, E., Thorner, J., & Catt, K. J. (1982). Yeast mating pheromone activates mammalian gonadotropins: evolutionary conservation of a reproductive hormone? Science, 218, 1323-1325.

## Neuropeptides: the molecules of emotions

Written by: Dr Arien van der Merwe MBChB FRIPH FRCAM

‘I suggest that the body and soul react to each other in sympathy. A change in the state of the soul would necessarily have an effect on the body and vice versa’.

- Aristotle, 400 BC

‘Our thoughts create our reality’. This is a strange concept for most of us. How could what you think, possibly make you sick or well?

Candace Pert is ‘n neuroscientist who did a lot of research on the neuropeptides. She was the first to call them the ‘molecules of emotions’.

Peptides are miniscule pieces of protein. Protein comes from the Greek word ‘proteios’, meaning primary. Proteins are the first material of life as we know it. Peptides consist of strings of amino acids of varying lengths, joined together in a necklace by very strong bonds made of carbon and nitrogen. Between 10 and 100 amino acids that form a strong bond, are called peptides. Between 100 to 200 are called polypeptides and more than 200 are called proteins. Amino acids are the letters that when combined in certain sequences, form the words that are peptides, or the sentences that are polypeptides or proteins. These make up a language that forms and directs the function of every single cell, organ and system inside the body, from the deepest vibrations of the DNA molecule inside the nucleus of every cell, to the macrocosmic systems function of the whole individual being. More than 90 neuropeptides have been identified so far, associated with mood changes, nerve, hormone and immune regulation. Wellknown groups of neuropeptides include the neurotransmitters that carry messages across synapses in the nervous system, growth factors, gut peptides, immune system modulators (e.g. interleukins, cytokines, chemokines, growth inhibitors that tell cells when to stop growing\*). A better term for the peptides might be *informational substances*. Other common peptides include the endorphins (our own happy hormones), insulin (responsible for blood sugar control), vasopressin (responsible for blood pressure), sex hormone releasing hormones, serotonin (the feel-good neurotransmitter)

There are 20 essential amino acids found in the human body, meaning that we have to take it in from the food we eat, as they’re not manufactured inside the body, hence ‘essential’. The first peptide, secretin was discovered in the gut. This surprised scientists as they thought all physiological functions were controlled purely by electrical impulses from the brain and nerves. Then the endogenous endorphins, enkephalin peptides that bind to the body’s own opiate (morphine-like) receptors inside the brain, were found. This lead to a mad search for receptors and their binding peptides inside the brain, hence the pronoun ‘neuro’peptides. It was only realised much later that every single peptide was made in many parts of the body, including of course, the brain. Now we know that the peptides are actually manufactured throughout the whole body, e.g. immune cells, bone marrow and gut cells have receptors for and produce neuropeptides. The T & B-cells of the immune system communicate with the brain and vice versa via the neuropeptides. Emotions can suppress lymphocyte function, others may enhance it.

**All the neuropeptides have a similar molecular structure...**

All the neuropeptides have a similar molecular structure, with subtle differences in the tertiary structure, meaning that only the frequency and amplitude at which each molecule oscillates (wavelike vibrations of electrons in each molecule), differ.

Neuropeptides change configuration (like a chameleon) due to emotional influence, according to specific thoughts and emotions. Depending on the thoughts and emotions, specific neuropeptides are made in the brain and nervous system, white blood cells, reproductive system, digestive system and heart, to name but a few. They form a two-way network between psyche and soma, mind and body. The complicated and complex communication network between cells, neurotransmitters, neuropeptides, hormones, immune system, blood and nerves, demands a remarkable orchestration of effective communication and integration of form and function, for the body-mind to work as one healthy, balanced and integrated whole.

Pert describes the mysterious energy connecting body to mind & emotions as the free flow of information carried by the biochemical of emotion: neuropeptides and their receptors. The strong link between emotional responses and the biochemical change they produce specifically in the immune system forms the basis of the field known as psycho-neuro-immunology or PNI. Cortisol secreted during long term stress, plays a role in immune suppression. Structural changes in the neuropeptides play a role in immune incompetence. Pert says: 'it is possible now to conceive of mind and consciousness as an emanation of emotional information processing, and as such, mind and consciousness would appear to be independent from brain and body'.

#### **Practical examples**

Let's simplify the concept by using practical examples. The specific feel-good peptide (e.g. serotonin), bind to its specific receptors on the cell membrane. This sends a 'feel-good' message to the inside of the cell, right into the nucleus. The message influences every function the cell is responsible for. Now consider the fact that you constantly think of things others have done to harm you; resentful, angry thoughts and feelings that grow and increase to disproportionate levels every time you think it. The thoughts become emotions, then the neuropeptides that course through your body-mind, influencing cell function and efficacy. Do you think that any cell receiving these messages for 30 years, would still feel like functioning well enough for you to be optimally happy, alive and fully self-actualizing to become all you're meant to be?

Confucius said: 'If you devote your life to seeking revenge, first dig two graves'. Your cells *feel* the way you do! Your thoughts *do* create your reality! What you spend your time thinking about, becomes the facts of your life. That's why positive affirmations actually work – repeating simple, positive, powerful statements to yourself, changes the frequency of the vibrations around your own neuropeptides, allowing cells to function better, your mind to find solutions to reach your goals, and your whole body-mind system to function optimally. Changing your habitual thought patterns to one of positivity and love, such as 'I am calm in my body, in my mind and in my emotions', 'I succeed', 'I feel calmness flowing through me', 'I love, accept and approve of myself just as I am', 'I live my truth', 'let go let God', or the Sanskrit mantra, 'om gum gana patayei namaha' to remove energy blockages, will allow the electrons around the nucleus of your neuropeptides to send positive, feel-good vibrations of waves and particles throughout your body-mind being. These vibrations bind to your cell receptors and allow the message to go right into your physical and spiritual DNA, the genetic source of your being.

## Cell memories

Emotions like bitterness, unresolved anger, resentment, fear and worry constantly trigger your stress response. These then become buried in ever deepening layers inside the cell memories. The layers become the physical footprints of your dream body, psyche or soul, manifesting in physical illness or chronic health problems. Once the cell memories are awakened, they can reach the conscious mind, so that you can make contact with your whole, integrated human *beingness*, leading to the identification of the deep issues that might play a role in the disease process. Through this, disease becomes a teacher potentially leading to important life lessons, personal and spiritual growth and healing from the inside out. The choice and free will to follow this path, is yours!

## Psycho-neuro-immunology (PNI)

The field of psycho-neuro-immunology (PNI) explores the links between mind and body with regard to the immune system. Since nerve supply extends to all the components of the immune system (e.g. lymph nodes, thymus gland, and spleen), the nervous system with its head office inside the brain, will necessarily influence the immune system directly. Stress and depression can suppress the activity of lymphocytes, the white blood cells that are the body's first line of defense against cancer and invading organisms. Diseases of the immune system include HIV/aids, cancer, allergies, arthritis, infections, the auto-immune disorders such as ulcerative colitis, multiple sclerosis and rheumatoid arthritis, and many other conditions that are a consequence of either a under- or an over-active immune system. Cells in the immune system are responsive to all 90 neuropeptides, that are triggered by our thoughts and emotions.

Neuropeptides cause chemical changes in the body that can improve or weaken the immune system. Once immune cells receive the stress response alarm, they undergo changes and begin to produce powerful chemicals. These substances allow the cells to regulate their own growth and behavior, enlist the help of other immune cells, and direct these to the areas of invasion or other trouble spots. Studies show that the HIV virus interferes with a peptide associated with feelings of self-esteem. In one study, patients with full blown Aids, who had therapy to boost their sense of self and strengthen emotional bonds, survived statistically longer than expected.

Establishing which emotions affect which neuropeptides will be the best treatment for all modern day illnesses! This forms the basis of chakra healing work.

## Be aware of your emotions

The whole range of human emotions are valid and worthy of your complete attention. Become aware of your emotions, try to find out what they want to communicate to you, then choose to let the ones who don't serve your health and wellness any longer, go.

- Anger, fear, sadness, hate, resentment
- Joy, contentment, courage, love
- Basic sensations: pain, pleasure
- Drive states: hunger, thirst, survival, instinct
- Intangible, subjective experiences that are uniquely human: spiritual inspiration, awe, bliss. There are many dormant nerve links between the primitive limbic system where the emotional centre of the brain is, to the pre-frontal cortex where spiritual intelligence and unconditional love reside. Waking up these cross links will help us to

become the spiritual, loving beings we truly are.

### **Endorphines**

The brain produces its own neurotransmitters, the endogenous opiates (e.g. beta-endorphin). These chemicals are produced in the brain in response to a variety of stimuli. Endorphins were discovered in 1975. Stress & pain are the two most common triggers for release of the endorphins. Activation of the opiate receptors in the brain by the body's own endorphins do not cause addiction or dependence, whereas exogenous opiates, such as morphine and codeine, do lead to addiction and dependence.

### **The effect of endorphins on the body-mind**

- Decrease in pain sensation
- feelings of euphoria
- appetite modulation
- release of sex hormones
- enhanced immune response
- fewer negative effects of stress

Enhance your own endorphins:

- Frequent exercise where you push yourself a little. Refer the *runner's high*, or being *in the zone*, athletes experience after prolonged exercise.
- Breathing techniques. Changing the rate of your breathing, allows the respiratory centre to become flooded with endorphins. This is why the yoga breathing techniques are so effective. Examples include full yogic breathing (belly-chest-collarbone); diaphragmatic breathing where you breathe in slowly and deeply, holding the breath, then releasing it, making the out breath longer than the in breath; or breathing in deeply, holding it and breathing out fast and forcefully through the mouth. Sit down if you do this to prevent dizziness, and do only 5-10 breaths.
- Certain foods like chocolate(!) (preferably dark chocolate with 70% cocoa solids), and chili peppers can enhance the secretion of endorphins.
- Through acupuncture, massage therapy and regular meditation practice
- Last but not least: sex is a potent trigger for endorphin release! So remember next time you have the well used headache - there might be a quick fix!

### **Become aware of your habitual thought patterns – thoughts do create reality!**

Where are your thoughts? Anticipation, fear and worry are mostly in the future where you have no control. Unresolved anger, bitterness, resentment are in the past. You can only learn, grow and let go of the past. You can never change it. So why waste your precious life force energy there? These thoughts prevent you from being in the present, the NOW, which is all you have. Thoughts lead to emotions or feelings that often manifest as physical symptoms and habitual behaviour. Try journal writing as a very effective thought management tool.

\* NOTE: E.g. growth inhibition is one of the key factors that's missing in cancer cells that grow in an uninhibited fashion. Immune system modulation and regulation are faulty in HIV/Aids.

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medical doctor with extensive experience in natural and complementary medicine, wellness and health promotion. She has been elected Fellow of the Royal Institute of Public Health (FRIPH) in the UK for the work she does in South Africa to promote public health and wellness through education, training and communication. She also qualified as Fellow of the Royal College of Alternative Medicine (FRCAM). Arien was the appointed Stress Expert to Discovery Health and Business Owner of the Stress Centre on DiscoveryWorld, <http://www.discovery.co.za/>. As director and CEO of Health Stress Management (Pty) Ltd, Arien acts as wellness advisor and consultant, stress expert and programme developer to the health care industry, companies, interest groups, websites and the media. Arien is an accomplished author of 19 books, the latest being 'Stress Solutions' (Tafelberg Publishers 2004). She presents regular stress management and natural wellness workshops in South Africa and abroad.