

# Dr Candace B. Pert

## INTERVIEW

Nancy Monk and Elliot Greene

Photos by  
Elliot Greene

Even before Bill Moyers presented the PBS series, "Healing and the Mind," with a segment featuring her on "The Mind/Body Connection", Candace B. Pert, PhD, Visiting Professor at the Center for Behavioral Neuroscience at Rutgers University, was busy making scientific discoveries that confirm a long-held and popular belief: the mind and body are deeply interrelated. The mind/body connection is so closely linked that Dr Pert has said, "I can no longer make a strong distinction between the brain and the body." (see "Remembering...Through the Body" by Mirka Knaster, MTJ, Winter 1994, Vol. 33, No. 1).

Dr Pert's research involves neuropeptides, the body's chemical communication links that send signals throughout the body and brain, which even the conscious mind may be unaware of.

Neuropeptides are molecules composed of two or more amino acids linked together by peptide bonds (as in proteins) which serve as intercellular messengers in the nervous system. They can either function as direct neurotransmitters, modulate responses to other neurotransmitters, or act as neurohormones. The chemical changes on the surface of nerve cells and their synapses are in constant interaction with the brain, the immune system and the entire body, affecting everything from our physical state to our emotions and moods. She refers to the neuropeptides that affect our moods as the "biochemicals of emotion."

Dr Pert was awarded her PhD in Pharmacology with Distinction in 1974 from the Johns Hopkins University School of Medicine in Baltimore, Maryland. She conducted a National Institute of Health post-doctoral fellowship with the Department of Pharmacology at the Johns Hopkins School of Medicine from 1974 to 1975. After 1975, she held a variety of research positions with the National Institutes for Mental Health (NIMH) and, until 1987, served as Chief, Section on Brain Biochemistry, Clinical Neuroscience Branch of the NIMH. A scientific consultant to the sponsors of Peptide T, Dr Pert is working on a study of a nontoxic AIDS therapy now in phase II trials.

An internationally recognized pharmacologist, Dr Pert has published over 250 scientific articles on peptides and their receptors and the role of these neuropeptides in the immune system. Her earliest work as a researcher involved the discovery of opiate receptors and the actions of the endorphins, the endogenous peptide hormones which activate opiate receptors. She has an international reputation in neuropeptide and receptor pharmacology as well as chemical neuroanatomy. Dr Pert has lectured worldwide on these and other subjects, including her theories on emotions and mind-body communication. We touched base with her for this interview while she was on her way to an Office of Alternative Medicine workshop in Bethesda, Maryland.

*What do you think is happening in the brain during a massage?*

What's happening in the brain is less interesting than what is happening in the body. When people feel pleasure, as they usually do during a massage, they focus on the present moment rather than staying involved with worries or preoccupations. An interesting scientific fact is that there are peptides containing neurons in every organ and throughout the body. One end of these cells is heading into the central nervous system, leading into the brain. The other end is located in the skin—when you manipulate skin, the peptides are being released; you are programming the whole body—not so much just the brain area.

I picked up a *Scientific American* article on consciousness the other day and it began with saying something like 'the brain, that's where consciousness is'....so I didn't read on. It is disappointing that we have not moved beyond this brain-centered concept, because we are further along than that in our knowledge of the overall body—not just the brain.

*There are reports that memories with strong emotional content, which have been unconsciously suppressed, are "recalled" by clients during massage therapy sessions (also see "Remembering... Through the Body" by Mirka Knaster, MTJ, Winter 1994), as if the body recognized memories through the power of touch. Does this coincide with any of your current research or beliefs?*

Trauma is a profound sensory overload and the brain can't take it all in at once. It spills over to our deep subconscious mind and certain information doesn't penetrate to our conscious mind.

Of course, many bodily activities do not function on a conscious level and are not of a traumatic nature. For instance, we aren't consciously thinking about digestion after eating.

*Your research indicates that opiate receptors are in the parts of the body*



that mediate emotion (among other areas). Would you be willing to theorize about massage therapy as it relates to the "biochemicals of emotion", the neuropeptides?

Old patterns of emotions are thought to be stored in the ganglion of the spinal cord and other parts of the autonomic nervous system. Massage therapy can perturb and alter the old patterns by activating these areas through touch, not only causing the relaxation response but instigating a flow of endorphins and other neuropeptides throughout the body.

My educated guess would be that the beneficial effects of massage on the body and the emotional state can even be strengthened when combined with the therapist talking; not necessarily during the massage, but before or after—as a way to help clients take part in visualiz-

ing their own state of well-being. In psychotherapy, as you know, the interaction of touch is not allowed and yet part of the point is to reach back into these old emotional patterns and deal with them. I believe that the release of these natural substances in the body through contact with the skin over time can affect many of those emotional patterns on a long-term basis.

*During your keynote address to the AMTA's National Education Conference, you stated that "I think we could replace 90% of mainstream medicine with a weekly massage." Would you elaborate on that statement?*

Examining lifestyles with an eye to prevention is a key focus for good health. Massage therapists are those you go to before the problem develops; mainstream medicine is where you go when

the problem has already arrived. I think it is tragic that there is a huge potential for what is considered enlightened or complementary medicine, and yet the research that is being done on it is still so small.

*Given certain biases that alternative or complementary forms of health care face, how can the massage therapy profession best overcome such biases in research and other areas?*

There is a huge gap between what we know and what the major institutions know. I understand that massage therapists are notoriously underpaid for the most part, and I hate to suggest that they do more work without getting paid! However, we have a responsibility to implement what we already know.

Implementation of existing knowledge and research into the mainstream institutions is absolutely necessary. There is an economic aspect to implementation which should not be underestimated. I would even say that economics is the major determinant of which therapies get used and which ones don't.

Massage therapists, as a group, are not like a big pharmaceutical company with lots of official backing. Therefore, massage therapists will have to find more innovative ways to generate publicity

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and gain access to these research institutions and the funding they can provide.

*The implications of what you've said about massage as a significant form of health care are enormous. In your opinion, how can we best support, through research, public outreach, and other*

*means, greater public realization and recognition of this?*

The idea of donation of massage therapy services may help here. Let's say, for example, that Baltimore has 100 massage therapists. If each massage therapist gave one free massage in a clinical setting or if students at an AMTA approved school participated as part of their coursework in conjunction with a scientist or a university, and the measured effects were incorporated into a study, this could have impact. Dental schools currently do similar things. Try inviting 100 developmental psychologists to the event. You may be surprised at the response.

People like Dr Tiffany Field of the Touch Research Institute are doing good work in this area now (see also "A New Dimension in Intensive Care: Dr Tiffany

Field Interview" by Mirka Knaster, *MTJ*, Summer 1991, Vol. 30, No.3, and "Researching Massage as Real Therapy: An Interview with Dr Tiffany Field" by Mirka Knaster, *MTJ* Summer 1994, Vol. 33, No. 3). Perhaps something as simple as giving mainstream health professionals more massages might change things around a bit.

*What do massage therapists need to understand about the scientific and medical community?*

The big thing is, I think times are really changing right now so there are opportunities in mainstream medicine. More progressive treatments are available at present, and many mainstream treatments are essentially not working. The National Institute of Health has begun to fund hard scientific research on



massage therapy; if these and other grants lead to productive results it will be the job of massage therapists to bring this news to others because everyone wants to feel better.

I sat in on an organizational meeting at the AMTA's National Education Conference in Atlanta, and my instinct says this is the way to go: a national lobbying force can be very positive for change. Coalition building also stresses

the similarities between related groups of health care professionals like massage therapists, chiropractors and physical therapists.

The Office of Alternative Medicine uses a term called "structural manipulation", which is an all-encompassing term that can mean anything from Rolfing to massage therapy to other forms of bodywork. The idea is to promote similarities, not to divide into factions.

*If you were the "Director of Massage Research" (hypothetical position), what would your grand plan be and what strategies would have the most impact publicly?*

I almost cannot speak of an aspect of medicine where the application of massage therapy wouldn't apply. Everything from helping psychotherapy patients relax before treatment to post-operative

pain. Clinical research must continue to be done.

For example, there are studies being done by Dr Hari Sharma of Ohio State University. He has been studying Ayurvedic massage and has reports showing quintuplings in the levels of a peptide called VIP (vaso-active intestinal peptide) that is isolated from the intestine. This is a clinical study which suggests you can manipulate, calm, or speed up digestion through methods of massage.

Massage effects are not necessarily mild or trivial and certainly are more profound than a visit to a doctor. You don't sit around feeling better at the doctor's office!

*Many massage therapists maintain that massage, with its capacity to promote feeling good, enhances health and well-being. In our culture, we have a lot of*





*barriers to feeling good. We tend to trivialize it or worse. What does feeling good mean from a neurochemical point of view?*

The pleasure principal is important. We all carry ancient wiring that can influence patterns of behavior. We know the endorphins were discovered in the mid-1970s. These “feel-good” chemicals

lie in the brain and are released during pleasurable activities, runners high and orgasm are two examples. But beyond the obvious examples, there are certain natural results having to do with bonding: sibling, maternal bonding, that can be corrupted through addictive drugs. Use of cocaine or manufactured drugs have been shown to kick off these endorphins; this ultimately contributes to addictive behavior. But massage therapy is one addiction that is harmless! Massage therapy is an infantile rather than a sexual pleasure—this is easily confused—it affects us on such a primal, subconscious level.

Evidence suggests that those deprived of affectionate hugging may develop addictive behaviors. And as interesting as endorphins are, the whole story must include 50 or 60 other substances in the

body that affect us, and they each may have their own mood states and moods, which are more complex. So, if someone were deprived of touch, are they addictive? I've heard it said about heroin abusers: “I've never met a heroin abuser who felt loved as a child”.

We are affected in part by a sick attitude in our culture. At hospitals, babies are taken from mothers at a very early stage, they sleep in separate places, breastfeeding is often thwarted or discouraged. James Preston did studies in the 1960s, which researched cultures in terms of how parents carried and held their babies; among the overall findings was that the more the infants were held, the less warlike the overall culture was.

The condition of a feeling of security is influenced by touching; if that pathway doesn't get conditioned along posi-

tive lines, the results can be devastating. Massage therapy can condition positively, as a sort of antidote, from the neurochemical perspective.

*Have you had a significant massage experience that you would be interested in sharing?*

I had a massage after I went skiing once in Lake Tahoe and hurt my knee. The massage was so effective. I'm convinced that this particular therapist had given me a massage which helped the ligaments in my leg to heal, which would otherwise probably have required surgery.

*During your appearance on the PBS Series “Healing and the Mind, The Mind/Body Connection” segment, what would you have added to the Moyer's*

*interview had your audience been a group of massage therapists?*

The research is all new. This is promising.

And I would simply add this: I'd encourage massage therapists to appreciate the power of their profession, to visualize themselves as healers, to use the placebo effect. What they say is as important as what they do. Acknowledge that massage therapy is a healing profession and take pride in it. ■



*Nancy Monk is Communications Assistant at the AMTA National Office in Evanston, Illinois. Elliot Greene, AMTA President, contributed background information and questions.*

