Tune Up Your Brain Module Two

Stress on The Brain

Stress reduction has always been of great interest to me as a harpist and vibroacoustic therapist, and I've helped many people deal with stress through the healing power of music.

But as I did the research for *Don't Let the Memories Fade*, I realized that stress management was much more important that I could ever have dreamt. If we don't deal with it now, we are definitely going to deal with it later, with long-term effects like depression, auto-immune diseases, and Alzheimer's.

What's the Point?

When something happens, like an automobile accident, your body reacts with the stress response that has allowed our species to survive. It produces a brief surge of cortisol that gets you to move fast to get out of danger or gives you the strength to move someone or something out of danger.

Ideally, once you respond to the danger, cortisol returns to normal levels. The rush is over, and your body returns to homeostasis. For many of us, though, that stress response never gets turned off. Even though there isn't much that is truly life-threatening for most of us, our perceptions tell us otherwise.

We have been conditioned to stress about things that have no bearing whatsoever on our survival – things like unanswered emails and our kids not getting accepted to the best preschool. However, this perception of danger or urgency puts us into a state of continual stress.

This leaves us exhausted, depleting our bodies of the energy needed to fight real invaders like cancers and viruses. The continual activation of the stress response results in a depleted immune system and a constant state of inflammation.

This is because cortisol, the stress hormone, is immunosuppressive, and increases chemicals that suppress cytokines, which are the chemicals involved in regulating inflammation. As a result, the body and the nervous system and brain are in a state of chronic inflammation, which is the root cause of many disorders including autoimmune diseases and, of course, dementia.

Stress results in a lowering of melatonin levels, so sleep becomes difficult or impossible and that itself causes a whole raft of problems. Stress also contributes to depression, which is a big risk factor for dementia.

For women, this is especially troubling since statistics show that, at the age of 65, women have a 1 in 6 chance of developing Alzheimer's, compared to a 1 in 11 chance for men!

Even accounting for the longer life expectancy of women, until recently there wasn't a good explanation for this. But we might have a better idea of *why* now, thanks to a new study from Johns Hopkins which showed that continual stress affects the memories of women more than men. It seems that, while the amount of cortisol produced in response to stress tends to go up with age for everyone, the bodies of women in their 60s and early 70s can produce up to three times as much as those of men in the same cohort.

Continually high stress hormone levels can have a bad effect on the hippocampus — the seat of memory in the brain.

So, bottom line - men or women - stress is NOT good for our brains, so dealing with it in a healthy way is essential.