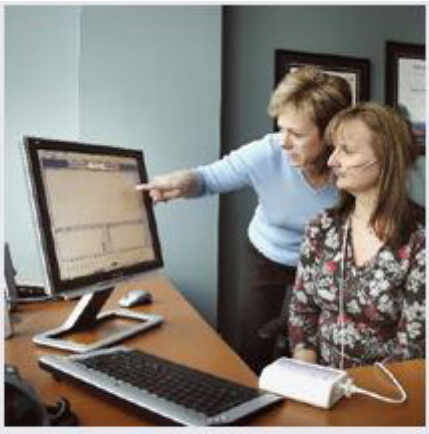
Every breath you take

Jenny Lee, Vancouver Sun

Published: Monday, March 05, 2007

After a bad car accident, a university professor was able to do yoga, Pilates and other exercise pain-free, but couldn't read technical documents without developing a debilitating headache. Simple breathing exercises solved the problem.

After taking a big fall while skiing, a normally athletic man could manage only four to five minutes on a bike before his legs would give out. He just couldn't seem to warm up. Breathing exercises helped.



Physiotherapist Diane Lee checks a client's disordered breathing pattern.
Photograph by : Bill Keay, Vancouver Sun

You'd think that breathing would be a simple and automatic affair -- oxygen in, carbon dioxide out.

But an increasing number of health professionals are beginning to view breathing as a behaviour, as something that can be consciously modified to help alleviate chronic pain, calm body and soul and assist in resolving some physical issues.

The concept is to use conscious breathing as a way to relax or regulate body processes. It's an ancient idea developing some decidedly modern, if edgy, twists. Breathing exercises are widely used in modern integrative medicine, and now a small vanguard of physiotherapists are beginning to use a biofeedback device to help patients modify breath and reduce pain. But more on that later.

At the Centre for Integrated Healing in Vancouver, a non-profit society which provides holistic cancer care, physicians teach a variety of ancient breathing practices as a way to help the body to relax, the mind to quiet and hence to reduce pain.

A qi gong exercise might involve breathing in fully, pausing, then breathing out fully, followed by breathing in and out fully with a pause at the end of the exhale. A yoga approach is more about awareness of breath with physical movement. A meditative approach focuses on literally observing the breath.

"We use the mind to focus on the breath by doing a breathing practice," says centre physician Janice Wright.

"When we are shallow breathing, the message in the body is that we're under distress and our pain can increase. When we're relaxed and the breath is deeper and more rhythmic, patients often report less pain.

"It's that simple, for us anyway, and we see amazing results," Wright said.

She recalls leading a seven- or eight-minute breathing practice session after which a participant told her those few minutes had been the first time she'd been pain-free in six months.

"The pain did return," Wright said. "This is not to say that seven minutes gets rid of your pain, but she did have a moment of relief when she relaxed and let go. She now does the breathing practices daily."

Diane Lee is among a growing number of physiotherapists who take all this several steps further.

Altered breathing patterns, originally caused by emotional or physical trauma, can become a habit, says Lee, of Diane Lee and Associates in White Rock, who speaks internationally on treating back and pelvic-girdle pain.

Let's say you lifted a heavy box and hurt your lower back. The back pain increases with sitting, but you have to sit at work. So every time you sit, you brace all the muscles in your back and as you do that, you unconsciously change how you breathe because bracing doesn't allow you to expand your rib cage properly. Eventually the disk in your spine heals, but you've developed a habit of bracing with sitting, so every time you sit down, you breath as though you were still injured.

Here's another example. You have acute whiplash. You've sprained the muscles in your neck, so every time you bend your head forward, pain increases and you begin to breath differently. The muscles in your neck heal, but every time you bend your head forward to read, you still breathe as though you were in pain.

Why is this a problem?

As Lee explains it, altered breathing patterns, such as overly deep or rapid breathing, can result in hypocapnia, or reduced carbon dioxide in the blood. This alters blood pH and leads to an increased flight or fight response, increased sensitivity of the nerves and reduced ability to release oxygen into the cells including the muscles, brain and stomach.

"You get tired, have trouble concentrating, get multiple sore, tender points all over your body, heightened pain perception and heightened emotional states," she says.

"When your breathing is disordered, it leads to all these really subtle symptoms that aren't explained by structure or by looking on an MRI or CT scan. They are subtle unless you're sensitized. If you're sensitized by a previous trauma, just the smallest change in how you're breathing will magnify your symptoms."

It doesn't take much to change your respiratory chemistry. Simply hyperventilating will result in hypocapnia. Most people will simply feel light headed or a bit dizzy for a minute, but some people with chronic pain have trouble normalizing their breathing, Lee says.

These people may breathe out faster than they breathe in, yawn or sigh frequently, or feel like they can never get enough air no matter how deeply they breathe, Lee says. They often get a tightness in the chest, and have cold hands and feet. They may fatigue easily and sometimes get tingling in the fingers that doesn't follow one nerve route. The trick is to link the poor breathing behaviour with the triggering circumstance and teach these people how they can breath differently, Lee says.

"I have yet to meet somebody in a chronic pain state who is a good breather," Lee says. "When you start to teach them how to change their breathing, they do better. Are they cured? No, but they have a tool by which they can start to manage their pain."

Lee uses capnometry, a simple, non-invasive method of measuring carbon dioxide in exhaled air, as a biofeedback tool to help users see when their breathing is not optimal. Some clients need four or five sessions while others may need only one.

"Ultimately it's up to the client to learn which breathing behaviours help them," Lee says. "When the kids are coming home from school and the house is still a mess and dinner's not ready because you've had one heck of a painful day, and you start to feel your pain increase, it just takes one minute for you to consciously breathe better and after that one minute of breathing better, you can start to get things done.

"Once you show them on the capnotrainer how fast you can change your chemistry with your breathing, now you empower them to take control over this behaviour that is contributing to their chronic pain," Lee says. "It's not the panacea and cure-all, but it's incredibly empowering."

When asked for their opinion, several respirologists viewed the concept with cautious skepticism.

Does it help reduce pain? A number of Lee's clients say it does. Can it do harm? Probably not. The method is a non-invasive, the biofeedback device is made by several companies, and the cost amounts to a few visits to the physiotherapist.

jennylee@png.canwest.com