Concussion - Pathway to Recovery Program

Session 2 - Patient guide: Introducing the mind-body connection

---

Session goal

- Becoming mindful of symptom patterns, introduce mind-body connection

---

Mind and body are connected as one

- **The physical symptoms you experience are real, and these symptoms produce a stress reaction**.
- **Stress reactions make our concussion worse**. What is stress? “Stress” is defined as a biological, emotional, cognitive (that is, mental), and behavioral reaction to a situation that you think you might not be able to cope with. Let’s look at the four parts of a stress reaction.
- **Biological and physical**. Stress reactions are biological. Your body automatically prepares for either “fight or flight.” The fight-or-flight response evolved in early humans and is quite useful in life-or-death situations— encountering a saber-toothed tiger, for example, or a robber with a gun. The biological response to stress includes an increase in blood pressure, heart rate, and breathing rate, and a decrease in digestive processes. Certain chemicals called hormones that help these biological processes are released into the bloodstream. There is a reduction in blood flow to your digestive organs and an increase in blood flow to large body muscles— those used for fight or flight. These biological responses evolved to produce short-term, life-saving, responses but many present-day stressors are quite different. They are ongoing rather than short-lived. Yet the body responds in the same way, as if every stressor were a saber-toothed tiger. On a long-term basis, these biological changes produce wear and tear on the body and reduce the ability of the immune system to function. What do you notice going on in your body when you are feeling stressed?
- **Emotional**. In addition to biological responses, stress also sets off emotional reactions— changes in your mood, for example. What are some emotional reactions you have experienced in response to stress? Many people with pain tell us that they react to the stress of chronic pain with nervousness, sadness,

depression, anger, embarrassment, and shame, to name some of the more common emotions.

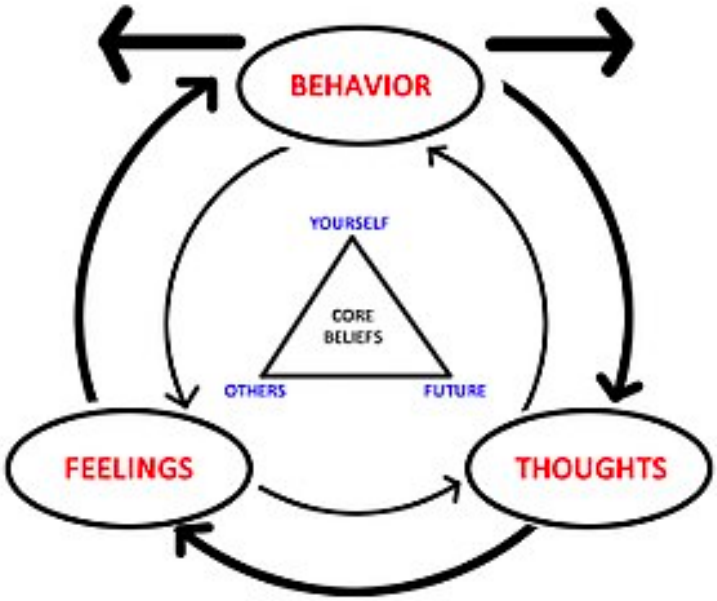
- **Cognitive**. Stress also sets off cognitive, or mental, reactions. “Cognitions” are thoughts, images, or beliefs. For example, cognitions include what we tell ourselves about the stress and about our ability to cope, and what we think about ourselves. These thoughts, by themselves, can be negative, overwhelming, and stressful. The way we think— our cognitions— can trigger stress reactions by themselves. What are some thoughts or mental reactions you have experienced in response to stress?

- **Behavioral**. When we feel stressed, our actions are also affected. We may eat more (or less), withdraw or lash out, go to bed and pull the covers up over our head. What are your actions in response to stress? Sometimes these actions can protect us, and sometimes they can actually make the situation worse. Can you think of some actions that might hurt us rather than help us?

- **Concussion is a major ongoing stressor**. It can and does produce the biological, emotional, cognitive, and behavioral stress responses just described. But non–brain injury-related stressors can also worsen pain. Anything that triggers stress can produce physical changes in blood flow, hormonal changes, and immune response suppression, as well as changes in our emotions, thoughts, and behaviors.

Consider the mind-body connection

- Our experiences are a combination of emotion (how we feel), cognitive (what we think), behavioral (what we do), and physical
- How might this linkage between emotion, cognition, and behavior affect your concussion symptoms?
- Draw out emotion/cognition/behavior diagram your chief symptom



Relaxation strategies are a way of managing the stress response

- Everyone has heard the term “relaxation,” and we all have our own notion about what it means to “relax,” but the term is used here to refer to using specific strategies to bring about something called the relaxation response. We have discussed the stress response as the “fight-or-flight” response. The relaxation response is sometimes referred to as the “rest-and-digest” response. During the relaxation response, heart rate and blood pressure go down; breathing gets slower and deeper; blood flow is decreased to the major muscles of the body (no need for fighting or fleeing during relaxation); and a greater percentage of the blood supply goes to the digestive organs. This is the time in which the body is able to process and store nutrients. Emotionally, the relaxation response generally involves a sense of calm well-being.

- Cognitively, a person's thoughts during relaxation might drift to pleasant memories or a general awareness of the ongoing sense of well-being. Although troubling or anxious thoughts can creep in during the relaxation process, people are generally able to let go of negative thoughts and emotions. In terms of behavior, the relaxation response involves an overall quieting of the body, so physical activity is usually at a minimum. In general, during relaxation, the body and the mind are calming and quieting in a pleasant way. In essence, the relaxation response restores balance to the body and mind, and reduces or reverses the effects of the stress response.
- It is thought that chronic stress may actually set our stress "thermostat" to a more sensitive level, so that we become more easily stressed over time. It is also thought that learning and practicing the relaxation response can serve to reset the "stress thermostat" back to normal, even for people who have experienced severe or chronic stress. Since pain is a stressor, learning to use relaxation can also reduce the stress response in relation to pain. In effect, the relaxation response is one way to narrow or close the pain gate. The more you practice this skill, the better you get at it!

Diaphragmatic breathing relaxation script (also available on website)

- You can do this brief relaxation exercise sitting or lying down, or even standing if you prefer. During the next week or so, you might want to try it each way to find out what works best for you. You can do this with your eyes open or closed, and you might want to experiment with that too. As you are learning this new technique, you'll want to find a time and space where it is relatively quiet, and you are not likely to be disturbed. As you get more practiced with this relaxation, you'll be able to use it anywhere, anytime, even if you have just 30 seconds to quiet the body and mind. If you find yourself falling asleep as you practice this exercise, it's okay. You might want to experiment with trying another time of day (like first thing in the morning), keeping your eyes open, or sitting rather than lying down if you are falling asleep.
- So let's get started: Stand, sit, or lie down in a position of relative comfort for you. To begin to learn how to breathe from the diaphragm, you might want to place one hand on your belly and one hand on your chest. Notice, as you inhale, how the belly balloons out slightly, and on the exhalation, how the belly goes back in. Without forcing anything, see if you can breathe in a little deeper, so that your belly balloons out a little more, like a soft balloon filling with air. And then as you breathe

out completely, slow down the process. Feel the belly going back down as you exhale, like you're gradually letting the air out of the balloon. As you continue breathing in and out, slowly and deeply . . . notice the difference between the hand on your chest and the hand on your belly. You may feel the chest rise and fall slightly with the inbreath and the outbreath, but the hand on the belly will rise and fall to a greater degree.

- Breathing like this is the natural form of breathing for all of us when we're in a relaxed, restful state. Once you get a feel for how the belly rises and falls with this kind of breathing, you can remove your hands and rest them on your lap or at your sides if you like. We can breathe like this on purpose any time to quiet the body and the mind and bring about the relaxation response. Let's keep doing this for about 3 more minutes: breathing in, deep and slow, and breathing out a little slower than you breathe in. On the inbreath, notice your belly ballooning out, like you're filling up a soft balloon. On the outbreath, notice your belly going back in. . . . Notice that as you breathe in, your chest may rise a little, but your belly balloons out quite a bit more. There is more movement in your belly than in your chest. As you breathe out, your belly deflates like a balloon with the air let out. . . . Let your breathing be deep and slow, and regular, at a pace and a depth that is right for you. There's nothing you need to force or make uncomfortable for yourself in any way. . . . As you continue to breathe in and out from the belly, notice how your body feels. There may be some sense of quieting in the body. . . .
- Notice, as you breathe this way, that your thoughts may also be quieting down somewhat. . . . If your mind drifts away from your breathing and a thought does capture your attention, that's perfectly okay. Just notice that you're having the thought and then let it go, gently bringing your attention back to your belly breathing. . . . Breathing in, deep and slow, and regular . . . breathing out, deep and slow, and regular. . . . Noticing your inbreath and noticing your outbreath. . . . And then whenever you're ready, you can let your awareness of the breath fade into the background, and you can bring your awareness back to your surroundings. You might want to wiggle your fingers and toes a bit, or shrug your shoulders a few times.
- If you've been practicing with your eyes closed, go ahead and open them when you are ready. Alert, refreshed, and relaxed.

Homework

- Homework
  - Breathing exercises
    - Diaphragmatic-Belly-Breathing.mp3
    - Schedule deep breathing at least 2x per day
  - Make note of your TBI symptoms, emotions, thoughts to discuss for next time
    - Do breathing exercises and relaxation help with these symptoms?