

Week 3: The Biological Underpinnings of Mind-Body Medicine
Developed by The Center for Mind-Body Medicine

I Biological Underpinnings of Mind-Body Medicine

All animals and humans experience a “fight or flight” response when stressed out or threatened. When this happens, blood flows to our heart and lungs, thus taking blood away from the skin, resulting in cold hands and feet. After the emergency is over, the body begins to return to normal, this state of equilibrium is a result of the body’s autonomic nervous system. There are two main branches of the autonomic nervous system: the parasympathetic nervous system and the sympathetic nervous system. The sympathetic system is activated much like pressing on the gas pedal of a car and the parasympathetic system acts like the car’s brake. It calms, slows the heart rate, and lowers blood pressure.

After animals experience “fight or flight” they naturally return to normal activities. However, humans often prolong the “fight or flight” beyond the original situation. Our brains have associations with whatever is threatening to us and we often keep the threat in our minds which keeps us stuck in “fight or flight” mode.

Eventually we begin to do damage to our bodies; blood pressure may stay high for long periods of time, contributing to heart disease and stroke. Chronic stress produces high levels of cortisol which is related to increased blood sugar, decreased immune functioning and depression.

II. Biofeedback & Autogenics

“Thermal biofeedback” uses a device called a thermistor taped to the finger, or a bio-dot on the hand, to measure the temperature at the periphery of the body. When your eyes see your body temperature going up as you relax, your brain learns what it needs to tell your body to relax. Thermistors and Bio-Dots work by measuring the “fight-or-flight” response.

Autogenics is simple relaxation phrases that are used to balance the sympathetic & parasympathetic nervous system, which have an effect on the center of the brain that registers images.

III. Experiential Exercise: Thermal Biofeedback using Autogenic phrases

Affix one bio-dot to the webbed area between the thumb and index finger of your **non-dominant** hand. To determine the temperature, compare the color to the chart provided. Biodots measure temperature in the hand and register it by color changes. Wait two to three minutes for the reading to calibrate, and record the color of the bio-dot. Then practice autogenic phrases to help you relax and bring your temperature up. If the color doesn’t change, but you feel relaxed, that’s a good sign too, and if your temperature goes down it might be because you were disturbed by thoughts or images. With practice, most people can learn to raise their body temperature, but not everyone body responds in the same way.

IV. Homework -Practice 2 of the 4 suggestions below & write about them:

- 1) Wear the bio-dot for a day and notice in what situations the color changes. When does your temperature go down or up? The more you pay attention to the connections, the more you begin to understand what is causing you stress.
- 2) Practice autogenic phrases silently with yourself or engage a friend. Make sure you are in a quiet, warm place, as this enhances the efficacy of these exercises. Cold temperatures can inhibit the warming process.
- 3) Record the autogenic phrases for yourself and use the recording to lead yourself through the exercise. The more you practice, the more you can create a state of relaxation and the more quickly your symptoms of stress or pain will be relieved.
- 4) Carry the phrases on a piece of paper so you can use them wherever you go. Eventually you will learn them by heart and be able to use them when you need them.
 - Remember that it generally takes several weeks or months of practice to become proficient enough to relax quickly using autogenic training, so be patient with yourself.

