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# THE MIND AND BODY CONNECTION IN SPINAL CORD INJURY

*Dr. Khushboo Gadda*

**Abstract:** The mind and body connection is a connection between what we think and what appears physically in our body. This mind and body connection can influence our physical health to a great extent and help in the recovery process. In this article I have touched upon the neuroscientific theory behind this terminology and given practical pointers at the end for individuals with Spinal Cord Injury who can use the mind- body connection to optimize their physical recovery.

*"Do you remember the first day of your job? Do you remember your accident when you had the spinal cord injury or the hospitalization after that? The first thing you will remember is how you FELT when you experienced it. It's all about EMOTIONS."*

Morris E. Goodman (born November 9, 1945) is an American motivational speaker and author. Morris was never a motivational speaker from the first. He in fact had his own insurance company. In the year 1981, he got his pilot license and purchased his own airplane and in march 1981, while attempting to land he met with a crash which fractured his C1 and C2 vertebrae and made him totally paralyzed. In fact, he was not even able to breathe let alone move a single muscle in the entire body.

When he was in the hospital, the doctors had confirmed the news, that without a ventilator and a breathing support machine, he will

never be able to breathe on his own. He was there throughout this news and heard every single word. If it was someone else, they would have given up on it and left it to fate. But he was determined to not be that person. He knew that even though his BODY is not with him for now, he still has his MIND and that was enough for him. He strongly visualized himself walking out of that hospital and in a matter of 6 months with intensive treatment, physical, speech and occupational therapy, he was able to WALK out of there. He is called "THE MIRACLE MAN" because even though it was predicted for him that he would not be able to even breathe, let alone walk, he did what someone else in his place would have just given up.

I came across Morris Goodman's story when I was reading *The Secret* by Rhonda Byrne. I was really touched by this story and decided to get into the depth of the Mind- Body connection. So I picked up the next book on this topic which was *Becoming Supernatural* by Dr. Joe Dispenza. So much of his work on the mind-body connection comes from the fact that he himself, Dr. Joe, had met with an accident which had given him a spinal cord injury with 6 vertebrae fractured. He was told by the doctors that he will be required to place a steel rod in his spine to align his vertebrae and he might be paralyzed for the rest of his life. But since he is a neuroscientist himself, he decided not to let this decide the prognosis. He started mentally imagining and healing his vertebrae through his mind. And voila! In a matter of a few months he was able to walk out of there with his recovery done.

Now, earlier, I might have scoffed at such stories and would have thought that this is just a piece of luck and maybe some good western medicine, but after a few years of seeing neurologically

impaired patients and seeing the results of how a strong mind can do wonders on the physical body, it led me to change my mind. Since I am a science student, I can only understand things in the way of scientific research and actual evidence. So, after a year of reading and learning about the mind-body connection “scientifically” and biologically, here I am presenting my knowledge on this subject.

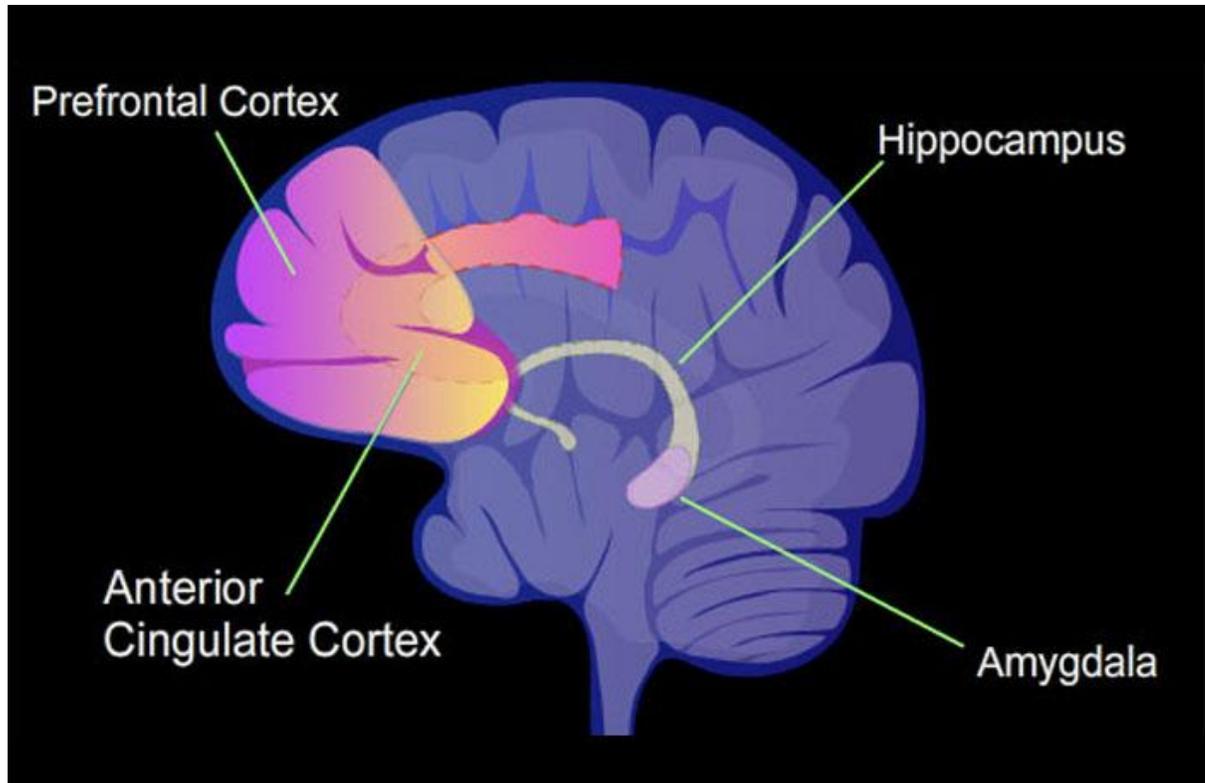
### **A. Where do thoughts come from?**



When homo sapiens (humans) evolved from apes millions of years ago, we had an unusually large brain size. This was because our prefrontal cortex (the part of our brain behind the forehead) had evolved so well from our predecessors. The prefrontal cortex is mainly responsible for our thinking process, decision making power and storage of memories. Whenever we are facing a situation, our prefrontal cortex is able to immediately recollect something similar which must have happened in the past and is able to help us decide what we should do in a particular situation. The ability of the prefrontal cortex to think is so good that even when we are doing nothing, it is able to still generate thousands of thoughts. I am using my prefrontal cortex currently to write this article and am able to

generate words. Now this PFC is both a boon to us AND a curse. Let me explain how.

## B. Emotions and memories

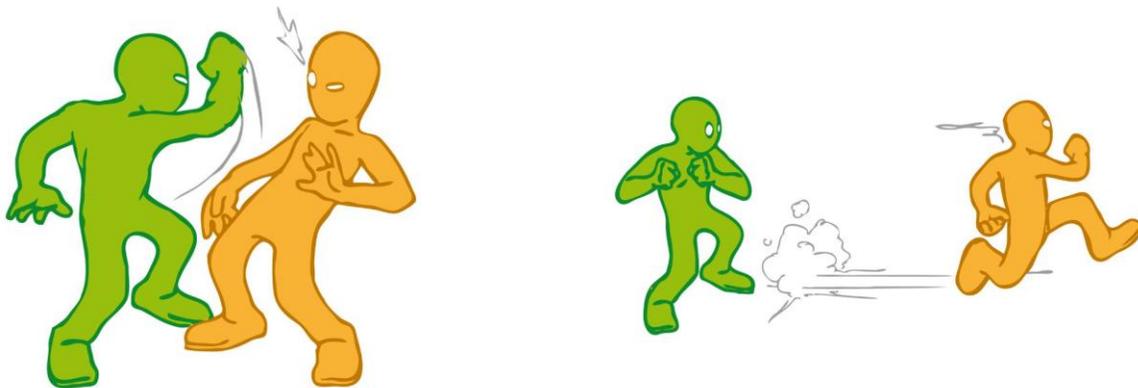


The emotion centre of our brain lies in the hippocampus and amygdala- both are deep inside the brain. This centre is also found in animals. This is mainly responsible for generating emotions like happy, sad, angry, jealousy etc. Now, the link between the prefrontal cortex and the amygdala is very strong. Whenever we are facing a situation, the first thing is that our sensory system- eyes, ears, nose, smell, taste and touch is recording and capturing that information. The information is then sent to our prefrontal cortex which stores it as a memory, but not before it associates it with a strong emotion through the emotional centre of our brain. Think of a random memory, you will find that the only way you have remembered that

memory is because you have associated it so strongly with an emotion.

Do you remember the first day of your job? Do you remember your accident when you had the spinal cord injury or the hospitalization after that? The first thing you will remember is how you FELT when you experienced it. It's all about EMOTIONS.

### C. Fight or Flight Response



When our ancestors used to stay in the forest, they were sometimes faced with dangers- by the attack of a wild animal. Now their body would help them to react to it by the fight or flight response. What does this response do?

Huge amounts of adrenaline and cortisol would gush from their brain to their entire body and this would help them to generate enough power and force to either FIGHT that animal or RUN from the animal. This would help them to survive in the forest. Once the danger was gone, the adrenaline and cortisol levels in the body would go down and immediately their body and mind would be calm.

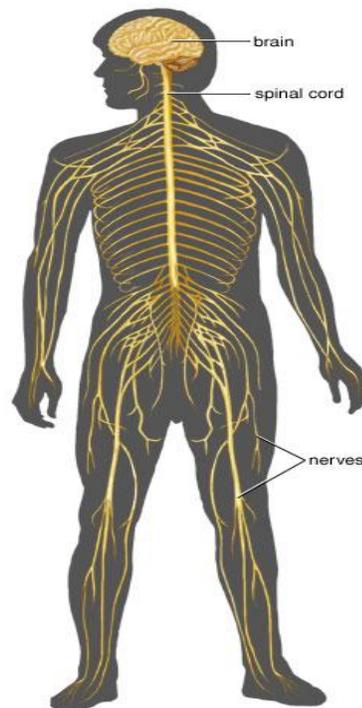
Now, in the modern world, due to so many stresses from our environment- stress about our job, about our family, about our body,

about what will our future hold and the recovery process of our injury, about the stress itself, this has led to the adrenaline and cortisol hormones being released in our body in large amounts ALL THE TIME.

### Is this good for us?

We are constantly living in a survival mode. Our prefrontal cortex keeps having negative thoughts and emotions and very few positive thoughts. This is why we are always tired, low on energy, drained out and fall sick easily.

### D. Neural Networks



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Imagine that our body is like a building and the electricity supply of our body are the neurons going from our brain to our spinal cord and to the rest of the body parts and back to our brain. This is why, whatever thoughts we have are all translated into physical parts of our body. There is a hormone called serotonin which gets released in our brain whenever we do physical activity or exercise. After moving

our body and physically releasing the serotonin hormone, our mood becomes better, our mind becomes sharper and we are able to concentrate better.

### **E. The immune system**

In the past year or so the immune system of our body has received a lot of attention due to the covid infection. They say that if you are mentally strong, your immune system will work well and it will be able to fight the infection. How does that work?

The IgA antibodies are particular ones which are released from our immune system when there is an infection. We need a large supply of IgA antibodies to fight the virus. Our brain has tremendous control over the production of IgAs. When we are thinking positive or negative thoughts, it gets circulated in our entire body through neural connections and blood supply. This controls each and every cell in our body. The chemistry of cells in our body can be altered by our mental strength alone and there have been multiple scientific studies done to back this statement. This also influences the production of the antibodies.

This is the reason why, recovery process, be it from an infection or from an accident or spinal cord injury, can be influenced tremendously by our mind and thoughts alone.

### **F. What can we change to influence and optimize our mind- body connection?**

I am about to give a few practical tips on how individuals with spinal cord injury or anyone for that matter can learn to work on their mind-body connection to facilitate their recovery, enhance their connection with their body and how they can feel good about their own body. Keep in mind that this can require intensive work and

regular habitual practice to really become better at it but the results can be extraordinary. More than anything, the reason why I love this process is because through my own experience of treating neurologically impaired patients, I have been able to achieve a lot of goals which I set for them. Let's go through the pointers.

### **1. Share energy and thoughts with someone who is at the same level as you are.**

Atoms that vibrate at the same energy and frequency eventually go on to form a molecule which is chemically bonded very strongly. In a similar way, try to bond with people who are at the same level of energy and frequency as you are. This can be by going online and finding support groups that are formed by people with spinal cord injury, Nina Foundation is doing an excellent job at that, by peer interaction and support. Try to avoid people who are pulling your energy down.

### **2. Protect your energy and space**

When we wake up in the morning, we are recharged and have a fixed energy level. When we interact with people throughout the day or work on projects that require our mental and physical effort, we are utilizing energy from our supply. If you are particularly feeling drained out in the middle of the day, try to protect your energy and speak to a smaller number of people if it is not necessary. Make things easy for you. This again helps a lot in the recovery process. Even if you do feel that it is unavoidable, come to my 3rd pointer.

### **3. Have a morning and a night routine**

As I said, we have a fixed supply of energy when we wake up in the morning. Technology has done a fabulous job of draining us and taking away that energy. So everyday in the morning make it a point not to check your phone for at least 1 hour after waking up. Try to

practice gratitude, mindfulness and meditation for that 1 hour. Similarly, before sleeping, since we are constantly loaded with distractions throughout the day, our mind is in a constant state of activation. So before you sleep, practice a night routine, which can include reading or listening to spiritual things so that it can help your mind to relax.

#### **4. Practice essentialism**

How often does it happen that we schedule too many things in a day? Practice NOT doing that. Schedule only one thing throughout the day which is the most important and work on it the most. This again helps in having your mind concentrate on just one task.

#### **5. Be mindful**

Whenever you are exercising or undergoing your physical therapy session, out of that 1 hour of therapy, for how long do you stay in the moment? Answers would be hardly 15 minutes in total. Our mind is constantly thinking thoughts and getting diverted all the time. Practice staying in the moment and use all your 5 senses- eyes, ears, nose, taste and touch. Be mindful of what you are doing in your physical therapy sessions and your recovery process will be that much faster.

#### **6. Practice mental imagery and mental rehearsal**

Even when you are not actually doing the movement or exercise, when you are sitting or lying down, try to mentally picture yourself doing it and rehearsing the exact movement. Concentrate on it completely. If your goal is to achieve walking, imagine yourself walking and actually doing it. Mental imagery is a very powerful process and it can manifest in your physical body eventually.

## **7. Meditation**

**Remove one hour from the day and just sit by closing your eyes and meditating. Observe your breath and the different sensations running through your body. Concentrate on your heart centre and the energy inside your body.**

## **8. Sleep well**

**This is the most powerful and underrated weapon that a person can use to make their physical health better. Sleep for 8- 10 hours on any given day is known to enable tissue healing and help in the recovery process. Even if you are not able to achieve a deep sleep, try to close your eyes and just lie down completely relaxed.**

**Above are the pointers which I suggest to every patient and this has helped their recovery.**

**In conclusion I would like to say that even though the cards have been dealt differently to certain individuals, what they can make of it and how they play their game depends a lot upon them. You can practice and learn how to use your mind-body connection to help you in your process of recovery.**