

Crossing the Midline: Martial Arts Training at Its Best!

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Permission given by Fr. Robert Connolly, Founder Se-Jong Tae Kwon Do

History

When and how the world of martial arts training began is certainly up for much discussion. With my marginal understanding I cannot even begin to predict why the martial aspect of movement was developed. I suspect that with the harsh requirements of life people began to develop ways to survive in many different situations. I am certain that environment would have played a huge factor in the development of style, expression, and requirements of technique that are specific to each system and culture. It is the uniqueness of each culture that is the flowering expression of the martial world. We see its expression, we can touch it, and we practice it. Each with its own strength and beauty, yet all designed to allow the practitioner to master perfection and bring out the best that humanity has to offer.

Training

As a pre-teen I began my martial arts training like most other students, I knew I would learn to protect myself and have less fear in my life. With a tremendous amount of luck I found a class that was offered free of charge, just my cup of tea since my parents would never be able to afford real lessons – at least that was my first thought. Little did I know that my teacher was trained in the tradition of dedicated martial artists with only one ambition, and that was to learn! I make this clarification because this motivation is essential to learning. He did not have to modify his instruction, speed up the learning process, or alter in any way what was handed to him from teacher to student. He did not have any commercial constraints to worry him. He would just teach whomever entered the dojang! If the student stayed, great; if the student left, that was OK, too. Those who stayed typically had a strong work ethic, combined with an intrinsic desire to learn. Almost thirty years later this unique circumstance is what made me who I am today.

The Lesson

Each Tuesday evening around 6 p.m., fifty to one hundred students would assemble in a moderate size church hall. Instruction would be based on belt levels, just like any other school. This was the catch, because it was free and there were always large classes, we would repeat our basics over and over, repeatedly and without mercy. This meant that many evenings I would not progress beyond one simple block.

Each technique was taught progressively, with a chamber position (starting point) and an execution position (stopping point). It was always mirrored so that both right and left sides had equal practice. Within this teaching structure you will find thousands of years of history and philosophy. You will also find what I have come to know as the *midline*.

Education

After high school, and with much encouragement from my martial arts teacher, I attended Slippery Rock University of Pennsylvania. Slippery Rock is well known for being at the

forefront of Physical Education and Health. With a little luck and a lot of hard work I did graduate with a Bachelors Degree in Physical Education and Health. This was the perfect compliment to my martial arts training. My education introduced me to necessary physical sciences that allowed me to develop what I consider to be an educated guess. I was able to match today's scientific research with known teaching elements that are several thousand years old.

What is the Midline?

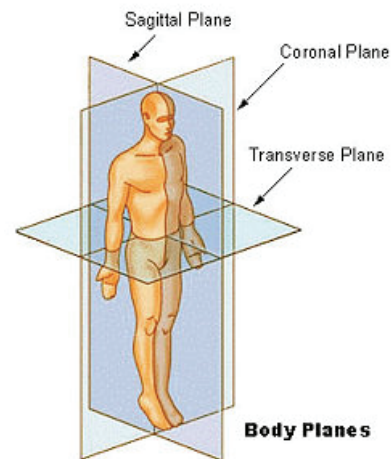
In the physical science of anatomy and specifically from the book, *Principles of Human Anatomy*, by Gerard J. Tortora, you will find a chapter dealing with planes and sections. Typically, the terms are used to define direction that the body can move.

*"Planes are imaginary flat surfaces that pass through the body."*¹

There are three main planes:

1. The midsagittal plane, divides the body into equal right and left halves. (this plane represents the MIDLINE).
2. The frontal plane, divides the body into front and back (anterior and posterior).
3. The horizontal or transverse plane, which divides the body from top to bottom (superior and inferior portions).

I know that's a lot for anyone to swallow and unless you see it on a picture it is hard to imagine. So this is how I picture it in my mind. I take a long, flat, four foot wide sheet of glass and I use it as my dividing tool. Picture the glass facing forward and passing from head to toe through your body. This would divide you into front and back or the frontal plane. Next, picture the glass turned 90 degrees so that it is facing sideways to your body, then allow it to pass down the body from head to toe and you will have the midsagittal plane (midline). This divides the body into a right and left half. Finally, turn the glass sheet flat to the floor you are standing on and allow the glass to pass waist high through the body and you will have the horizontal or transverse plane. Still not sure, go to the library and get an anatomy book, you will find it there! When studying the body you learn it in sections. That's why it is so important to understand different planes. If a doctor used right and left or up and down they might just remove the wrong leg. *Just kidding*. It is important to know anatomical planes, especially in martial arts.



Why is the Midline so important to learning?

Let's go back to my early years of training in martial arts. I hope I made it painfully clear that I was taught in what I consider to be a very traditional method. To recap, my Sa Bom Nim would take one movement and progressively teach it. That means that a single movement was broken down into many smaller movements. Most movements (if not all)

¹ Gerard J. Tortora, *Principles of Human Anatomy* (NJ: Wiley & Sons, 2005) p. 12.

had a chamber position (starting point) and an execution position (stopping point). Within this structure lies the method of the midline.

Most blocks, punches, and kicks cross the midline point of the body (midsagittal plane). Many times these movements are set opposite the body. What I mean is that to perform a right low defense block I am required to place my right hand across the midline to my left ear and my left hand against my right hand, (the right hand must cross the midline of the body) to be in the proper chamber position. Then, during the execution phase the hand again passes through the midline to finish in the proper execution position. Each block, punch and kick requires conscious thought to start and stop in the right position and each then is mirrored to match its opposite.

What's the big deal? Until recently we did not know that when you cross the midline you force your brain to rewire itself to compensate for the confusion in the movement.

Without going into too much detail, studies have shown that the *percental gyrus of the frontal lobe that controls the primary motor functions of the body must produce neurons and create new pathways to deal with the movement!*

Science and technology meet 2000 year old training methods. Sounds like a horror film or it would make a good book!

To summarize things, the more you force your body to cross the midline plane, the more neural pathways your brain will create to handle the confusion of the movement. More pathways will translate to better defined movement, improved motor skill development and increased cognitive capacity. Essentially, it is fitness training for your brain.

Why were so many Masters effective?

Many Masters in history taught martial arts because it was a way of life. It wasn't for money, it was for reputation, and it wasn't to be a champion. Don't get me wrong, all those things have a rightful place in our community, however, *if you look closely at many masters that would teach because they know that life expects them to, you will see a slightly different perspective.* The desire to learn to teach! Teaching is not something that just happens.

Masters were effective because of their desire to learn. Not only to learn new techniques, *but to learn ways to communicate and teach them to each individual student.*

This brings me back to the Midline. It is my opinion that somewhere along the line of teacher-student relationship, a Master figured out that if the students move their arms and legs across their body they have a tendency to remember the skill better, faster and perform it at a higher level. To me, this is the greatest thing since apple pie. All of us know students who when they began their martial arts training, other areas of their life began to improve. Examples that I call to mind include students in school who go from "Cs" to "As" on their report card, and ADHD students who somehow can now concentrate. I know a gentleman who went from chemical sales to becoming a medical doctor. Or even me, an average to low performing high school student, to an honor student and dean's list in college. These things are not just happening.

It is now scientifically substantiated that your brain produces more neurons and creates neural pathways that expand your ability to move and process information. This production of neurons is a direct result of martial art instruction that requires the student to consciously cross the midsagittal plane (midline) of the body.

Has anyone ever connected the dots?

I am sure someone has! Unfortunately, I have not come across any articles that have specifically identified the link between the midline of the body and how martial training is conducted. This is why I have chosen to write an article that I hope will spark an interest that will allow others with advanced degrees to do more research in this area.

I believe we have only begun to uncover the science behind martial arts. For years, many masters knew the benefits of martial training, however, all or most of the growth was attributed to self-discipline. Another way it has been described is that repetition created focus.

Now we have evidence and a name for that focus, it is what I have come to know as the *MIDLINE*.

How can we all benefit and learn from the concept of the midline?

We now have evidence that when the body is placed in a situation that forces it to cross the midsagittal plane (midline) our brain develops new neural pathways to deal with the confusion of the movement.

- **We can use this information to maintain the fundamentals of our programs (basics).** Do not eliminate movements because they are difficult to do. If you streamline the movement it is likely that you have taken away its original purpose and maybe eliminated the crossing of the midline.
- **Slow down your training process.** If you focus on the quality or mastery of the movement there is a good chance that you will have a student for a lifetime. In other words, your black-belt retention rate will go up!
- **Look for movements outside of the martial arts world that allow for conditioning that include crossing the midline.** An easy example is a jump rope cross. There are many conditioning exercises that you can find and create that will allow your students to cross the midline plane of the body.
- **Share your knowledge.** I have found that I learn more from speaking to others than I could possibly learn by trial and error.

Conclusion

We all have one common value, we appreciate movement. This passion drives most of us to find ways to improve ourselves mentally, physically and emotionally. This desire is the foundation of learning.

We must keep in mind that teaching and learning is an ancient concept that can be improved with modern science; not taking away from history, but adding to it and strengthening our own history.

This is our opportunity to define martial science. We now know that our body has a way to decipher complex movements that have lasting effects.

We all must learn and use the concept of the midline. I am excited to see what is next to be discovered. What could it be?

Midline training, martial science at its best!

WEB SITES

For more information concerning movement based learning:

American Alliance of Health, Physical Education, Recreation. and Dance

<http://www.aahperd.org>

Movement based learning. Site dedicated to Physical Education and connecting learning to movement

<http://www.actionbasedlearning.com>

The Presidents Challenge

<http://www.presidentschallenge.org>

Brain Gym

<http://www.braingym.org>

BIBLIOGRAPHY

Tortora, Gerard J. *Principles of Human Anatomy*. Hoboken, NJ: John Wiley & Sons, Inc, 2005