

## Acupuncture and the Interstitium: by Craig Amrine

My opinions/thoughts on the latest talk of “The Interstitium” from an acupuncturist point of view. A few weeks ago, I was contacted by a lot of friends who listened to “Science Friday”, a program on the radio show NPR. The program is was about the “Interstitium”. It is a layer of connective tissue that consists all over the body, including lining the digestive tract, the lungs, and even the surrounding the blood vessels. This lining consists (among other things) of collagen fibers, fibroblasts, CD34 cells, and fluid filled pockets/cells. The functions originally were thought to include absorbing shocks and bumps... and holding all the organs in place. Recent discoveries have shown that this layer is much more complex than originally thought. It is speculated that it serves as a possible pathway for fluid distribution and possible disease mechanisms. In some circles on medicine, this term has been used to help explain “fascia”, which is classically defined as a dense webwork of connective tissue that lines all of our organs, muscles, and blood vessels, and helps hold organs in their place. It also helps form separate compartments between different organ groups and serve to protect disease from spreading from one section of the body to the other.

Fascia disfunction has been viewed as a possible disease mechanism for many many years in various medical modalities including massage, osteopathy, and even acupuncture. In the news lately, this “interstitium” has been labelled a “NEW ORGAN DISCOVERY”. To be honest, it isn’t really new, and we’ve known it’s been there all along. What’s new is the fresh perspective many in Western medical circles are seeing this layer, and how it can be play a role in certain diseases including cancer. We mention this discover here on my website because, like I’ve already mentioned, the presence of facia and this “interstitium” has been known for thousands of years. In Traditional Chinese Medicine, we call it the “San Jiao” organ. It is also called the “Triple Burner” or the “Triple Warmer”.

In the past, explaining this organ to Western medical students was difficult because unlike the Lungs, Spleen, or Kidneys for example, there was no “Western” medical equivalent to the San Jiao. It was the “organ without form”. In truth, the San Jiao is simply the Traditional Chinese term for the fascia, and in a greater sense, the “interstitium”. Classically, the San Jiao

was responsible for various functions including dividing the body cavity into different compartments, and properly distributing fluid throughout the body.

New understandings of the interstitium and its fluid containing structures further reinforce this parallel. A connection between fascia, interstitium, and the concept of “meridians” or pathways of Qi has also been discussed. Some limited studies have hypothesized that electrical impedance (inverse of resistivity) is measurably lower along meridians. Interestingly, the electrical properties of fascia and interstitium are shown to have unique properties. Their resistivity is vastly different depending on the orientation of these facial planes/sheets. Specifically, it largely depends on the orientation of the collagen fibers, which make up a large part of the interstitium and facial tissue. Introduce the fact that collagen also acts as a piezo-electric and you have a whole new range of possibilities to help explain Qi, the meridians, and disease causing mechanisms. (Piezo-electricity is defined as the ability to produce an electrical current when mechanical stress is applied to a material.

“What’s old is new again”. As an acupuncturist, I celebrate this “rediscovery” of the interstitium and am excited that the bridge of understanding between modern Western medicine and Traditional Chinese Medicine is taking another step to a fully integrative view on the body, disease, and optimizing health.