Two System and Fasciology

Chun Yang[1], Yi-kuan Du[2], Jun Wang[1], Lin Yuan[1,2*]

[1]School of medicine, Shenzhen University, Shenzhen, China 518052

Phone +86-755 -86671969 Fax +86-755-86671969

E-mail: yuanl@fimmu.com

[2]Department of anatomy, Southern Medical University, Guangzhou, China 510515

BACKGROUND In light of developmental biology of the fascia-like connective tissue, the fascia network is homologous with the extracellular matrix, the middle lamella, and the mesenchyme, which common function is to sustain stability of the internal environment. Therefore, we proposed a new theory of two systems, supporting-storing system and functional system, to investigate the relationship between the fascial network and meridians.

METHODS Based on the digital datasets of Virtual Chinese human (VCH) bodies, 3-dimensional (3-D) structures of virtual meridians and fascia connective tissue gathering areas were constructed and compared with each other. Three-D structures of fascia connective tissue gathering areas were also constructed based on CT and MRI images of living human subjects, and compared with meridians.

RESULTS 3-D structures of fascia connective tissue gathering areas in the VCH bodies, CT and MRI images showed beads-on-string patterns. The reconstructed fascial lines co-localized precisely with the traditional meridian lines. When 3-D structures of all fascia connective tissues throughout the body were constructed, a body-shaped connective tissue network appeared.

CONCLUSIONS The fascial network throughout the human body is one of the anatomical bases for the acupoints and meridians of traditional Chinese medicine. The discipline that studies the supporting-storing system and the functional system and their mutual relationship is called fasciology.