

Non-synaptic messaging: Piezoelectricity, Bioelectric Fields, Neuromelanin and Dentocranial Implications, Proceedings of the 2005 International Research and Philosophy Symposium

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Blum CL |

Sherman College of Chiropractic, Spartanburg, SC

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INTRODUCTION: Most nervous system communication occurs at synaptic junctions, however a relatively new branch of neurophysiology has recently been investigating a nontraditional form of neural communication called nonsynaptic messaging. There are various forms of nonsynaptic messaging and discussed in some detail is its relationship to glial cell and CSF activity, the relationship between a piezoelectric or mechanoelectric effect, and low level electromagnetic fields and neuromelanin.

DISCUSSION : Implications of mechanoelectric activity in bone and dentition and a possible neurological affect might involve the dental and chiropractic fields as it relates to their cotreatment of dental, cranial and vertebral dysfunction secondary to temporomandibular dysfunction (TMD).

CONCLUSION : Somatovisceral relationships, diffuse neurological syndromes, and reflex points on the body unrelated to direct neurological synaptic connections might have some explanation based on the theories presented. Further study into the phenomena of nonsynaptic messaging and its possible relationship to clinical presentations is warranted.