

Simple yet complex research yields answers—and questions

At times, the research endeavor seems very complicated and daunting to those persons engaged in it, particularly for those new to it. Too often, the researcher is confronted by the need for complex, costly instrumentation and procedures or thinks that the more complex the research design the more meaningful the results will be. Sometimes, however, a study appears that is elegant in its simplicity and that provides evidence that supports that what is suspected may actually be occurring. "Suboccipital dermatomyotomic stimulation and digital blood flow," by Dr Purdy and colleagues, beginning on page 285, is one such effort.

The researchers describe the effects of applying the practitioner's hands to the suboccipital region and of performing a simple circular kneading to the region. This soft tissue technique shares some similarity with the CV4 cranial technique. Digital blood flow was measured using a digital strain gauge plethysmograph.

In an interesting twist, the authors also asked the subjects whether the experience of the hands on and manipulation was comfortable, neutral, or uncomfortable. The study results suggest that overall, the placing of the operator's hands under the head and suboccipital region caused vasodilation to occur in the subject's finger; manipulation seemed to provide an even greater degree of digital vasodilation. However, when each participant's subjective feeling about the procedure was examined, the subgroup reporting discomfort had the greatest change in digital vasodilation with the hands-on technique and the smallest with manipulation. Participants who felt comfort with the procedure showed significant change with both the hands on and manipulation. Those subjects who expressed neutral feelings had only a small change in digital vasodilation with the hands-on technique but a greater change when manipulation was applied.

Obviously, these results are open to interpretation. What did the terms *comfortable*, *uncomfortable*, and *neutral* mean to the subjects? How is the plethysmographic record related to the subjective response? What is the meaning of a large response with the hands on alone when it varies with the perception of comfort or discomfort? This study does show differences in digital blood flow

with the manipulations used, and it raises intriguing questions about the mechanisms underlying the observed effects. Dr Purdy and colleagues provide some background on the possible underlying mechanisms of this effect. As they point out, the neural inputs from the region stimulated can ultimately affect hypothalamic outflows and, hence, sympathetic discharge. Pain from the area would presumably affect thalamic regions and presumably increase sympathetic outflow. Because the "uncomfortable" group had a large response with the hands on, but the smallest response to the manipulation, it could be that the presumably calming effect of the operator's touch was countered by nociceptive inputs from the kneading procedure. Those subjects who reported a comfortable experience had an increased blood flow (a decreased sympathetic outflow) with both the hands on and the kneading manipulation.

This study indicates that the overall influence of both placing hands on the region and manipulating it is to reduce sympathetic tone; it also suggests that techniques that produce nociceptive inputs may increase sympathetic tone. This finding supports the clinical observations long held by the osteopathic medical profession regarding the importance of manipulation in the occipital region.

As a simple, elegant first study, this work raises a number of questions about what is happening and the interactions between the effects of hand contact and manipulative procedures. But this, after all, is what investigations are all about: answering a simple question while raising any number of other, branching questions that then almost plead to be investigated. Thus, this seemingly simple, uncomplicated study supports one of the clinical beliefs of the profession, while raising intriguing questions about the belief system that can now be better framed—and it is hoped, answered. If only the osteopathic medical profession had more such simple and provocative studies. ♦

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