

# Changes in the Traube-Herring Wave following cranial manipulation

by Nicette Sergueef, Kenneth E. Nelson, DO, FAAO, Thomas Glonek, DO

The Traube Herring (TH) wave is an oscillation in blood pressure and blood flow velocity with a frequency of 6 to 10 cycles per minute.<sup>1</sup> Multiple authors have commented upon its similarity to the cranial rhythmic impulse (CRI).<sup>2-5</sup> We have recently demonstrated that the CRI is palpably synchronous with the TH wave measured by laser-Doppler flowmetry.<sup>6</sup>

On two separate occasions, while working with the Transonic Laser-Doppler Monitor BLF21 Series, we had the opportunity to observe marked changes in the amplitude of the TH wave before and after manipulative treatment. Although these data are anecdotal, we believe that the marked changes that we have observed warrant reporting.

Both individuals were initially observed to have minimal amplitude TH wave fluctuations in blood flow velocity (Figure left, before treatment). Both individuals, however, were acquainted with osteopathic manipulation and had been treated on previous occasions. The placebo effect, therefore, cannot be ruled out. Both individuals gave verbal permission to treatment.

Individual no.1 is a 55-year-old male. Individual no.2 is a 25-year-old female. Neither individual had any physical complaint or medical condition requiring medication. The cranial examination re-

vealed decreased CRI amplitude, most notable in individual no. 1. Treatment for individual no.1 consisted of equilibration of the cranio-cervical junction and global antero-posterior cranial motion and was applied for approximately 10 minutes. Treatment for individual no.2 consisted of equilibration of the cranio-cervical junction and the cranial base and was applied for approximately 15 minutes.

The figure demonstrates laser-Doppler blood flow velocity records for both individuals before and after manipulation. The before and after records each represent approximately three minutes of continuous, unedited, recording and were recorded within 20 minutes of each other. The high-frequency waveform observed in all four recordings is the blood velocity variation with cardiac systole and diastole. The prominent low-frequency oscillation, absent in both pre-treatment records but prominently present in both post-treatment records, is the TH wave.

## References

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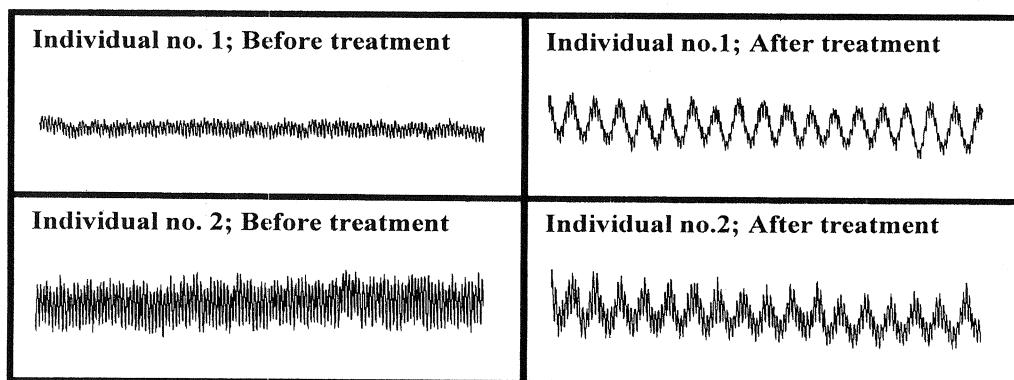


Figure: Laser-Doppler blood flow recording, before and after OMT