Pulse Oximeter Perfusion Index as a Measure for the Effect of Stellate Ganglion Block in Patients with Complex Regional Pain Syndrome (CRPS).
Abt G., Pawlik M.T., Ittner K.P. 2008; Proceeding from the Annual World Congress of Anesthesiology.

**Introduction**
Patients suffering from CRPS frequently require sympathetic block of the stellate ganglion to reduce pain and swelling and to improve dermatrophia \(^1\). In the past successful blockade could be verified only by temperature difference of both upper extremities. The perfusion index (PI) in the Masimo SET pulse oximetry system reflects the strength of a patient's perfusion at the monitored site by calculating the relation between pulsatile and constant absorbed light and has been used for similar questions \(^2\). Perfusion at the extremities is known to be affected by vasoconstriction and vasodilatation as stimulated by temperature and anesthetics. In a preliminary study we examined whether perfusion was affected by stellate block using prilocaine 1% and, if so, whether the PI could serve as an indicator of successful blockade.

**Methods**
After approval of the local ethic committee we monitored PI in 5 consecutive patients undergoing ganglion stellate block due to a clinically diagnosed CRPS. Measurement was performed at the middle finger of the affected extremity before and 30 minutes after the blockade.

**Results**
PI value showed a significant increase 412 % (median) after 30 minutes (P < 0.05, Wilcoxon test). Ganglion stellate blockade after CRPS remains a controversial therapy \(^3\). Temperature rise is considered to predict a good pain response, but may clinically difficult to obtain. PI reflects as an objective measurement changes in the pattern of blood flow.

**Conclusion**
Perfusion index is significantly increasing after ganglion stellate block with local anesthetics. Measurement of perfusion index appears to be a useful tool to demonstrate both accuracy of the performed block and response of the patient’s sympathetic nerve system to the regional anesthesia.