

**The Patient State Index Correlates Well with the Ramsay Sedation Score in ICU Patients.**  
Ramsay M.A., Huddleston P., Hamman B. Tai S., Greg M. *Anesthesiology* 2004; 101: A338.

### **Introduction**

A prospective blinded study was undertaken to assess the correlation between the patient state index (PSI) produced by the PSA 4000 processed EEG monitor and the Ramsay Sedation Scale (RSS) in ICU patients.

### **Methods**

After IRB approval and informed consent, 30 patients about to undergo open heart surgery were enrolled in the study. On arrival in the ICU at the end of surgery, depth of sedation was monitored using a frontal array and the PSA 4000 monitor (Physiometrix, Billerica, MA.). The patients were monitored until they were wide awake and ready for extubation. The monitor screen was covered so that the clinical nurse was blinded from the data. The PSI values were recorded and stored on a disc. The RSS was recorded every hour while the patient was deeply sedated and then at 15 minute intervals when the decision was made to lighten the sedation and wean the patient from mechanical ventilation. The RSS scores recorded were compared to the PSI values obtained at the same time.

### **Results**

A total of 349 RSS assessments were made during the course of the study. The mean PSI score ( $\pm$  95% CI) for each of the RSS values was plotted (Figure 1). The correlation coefficient equals -0.98 indicating a strong relationship between the PSI and all levels of RSS. Sensitivity and specificity was also determined using Receiver Operator Curves (Figure 2). The sensitivity was 78.4% and the specificity was 84.5%.

Figure 1

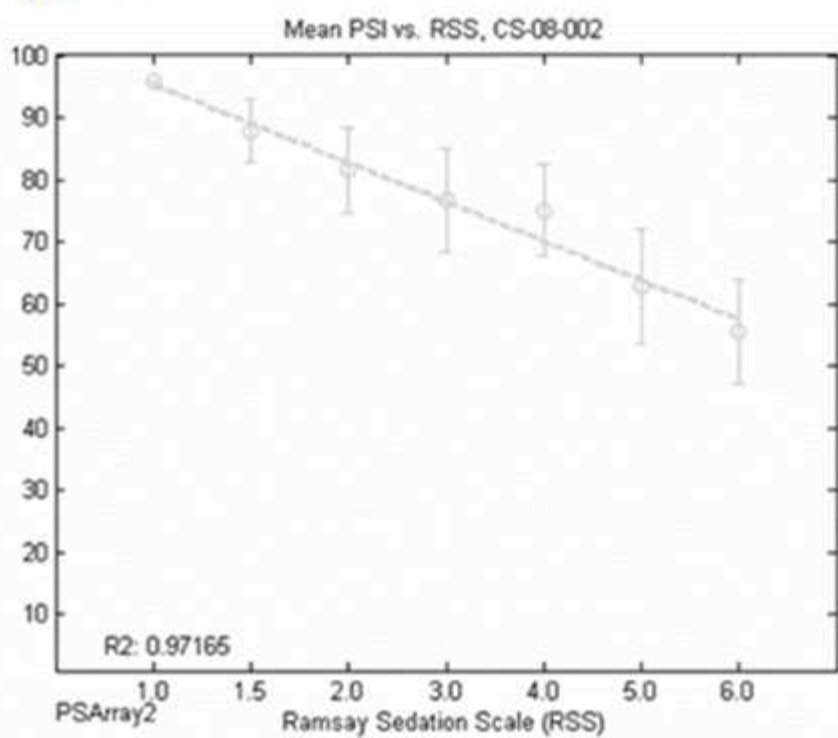


Figure 2

