Singer, R.  
**Neurobehavioral Screening of Breast Implant Women.**  
Between one and two million women in the USA have had breast implants since the introduction of the silicone gel filled elastomer envelope type breast prosthesis in the early 1960s. The implants can rupture, releasing silicone gel to migrate throughout the body. Silicone can also escape by seepage through the outer shell. The implant referred to as the textured implant is covered with polyurethane foam, which contains carcinogenic 2-toluene diamine (TDA) and neurotoxic toluene diisocyanate (TDI). About 200,000 women received this type of implant before it was taken off the market in 1991. Silicone is known to injure the lymphatic and immune systems. Because of reports of neurobehavioral changes following silicone implants, a neurobehavioral toxicity screen was developed to assess the likelihood of neurobehavioral injury from silicone-related implants. The screening battery was composed of the following tests: The Neurotoxicity Screening Survey (a symptom screening test, measuring the consistency of symptoms with those found in diagnosed cases of neurotoxicity); two tests from the WAIS-R (Block Design, Digit Symbol); and The Embedded Figures Test. The Barona and Chastain formula for predicting pre-exposure cognitive function, based upon demographic variables, was used to determine a psychometric standard by which to compare the current results. The product of this formula was converted to a scaled score that corresponded to the percentile associated with the full scale IQ. Results were considered abnormal if the subtests fell below the pre-determined scaled score minus four scaled score intervals. Although the probability of one abnormal comparison is increased when three tests are used, this probability is mitigated by the customary use of a two-tailed comparison, although a one-tailed test (two scaled score intervals) may be more appropriate due to the prior hypothesis of directionality (subjects with neurotoxicity are more likely to have deficits as opposed to increases on these tests). The subjects were 20 women who were candidates for settlement of implant litigation. Their ages ranged from 24–68, mean 45 years. All subjects were elevated on the Neurotoxicity Screening Survey. Nine women (45%) had one or more deficits; five (25%) had two or more; and two (10%) had three deficits. The Chi Square statistic for subjects with one or more deficits, comparing the frequency observed (9) with the frequency expected (3), was 12 (df = 1), significant at the < .001 level. The findings are consistent with reports of neurobehavioral illness from breast implants, indicating the need for neuropsychological testing of breast implant subjects.

Smet, I. C., Samara, S., Brinker, F., & Berent, S.  
**Neuropsychological Functioning and Cerebral Oximetry in Patients Undergoing Cardiac Surgery.**  
We examined the relationship between intraoperative changes in cerebrovascular oxygen saturation and neuropsychological functioning in patients undergoing cardiac surgery. Thirty-four patients undergoing open chamber (n = 17) and closed chamber (n = 17) cardiac surgery were administered brief neuropsychological assessments on three separate occasions (pre-operatively, 5 days and 8 weeks postoperatively). We used two instruments previously found to be sensitive to postoperative changes in cognitive functioning (MMSE and Trailmaking). Cerebral oxygenation was monitored throughout surgery using near infrared spectroscopy. Significant decreases in psychomotor speed from preoperative levels were found 5 days post-operatively in both groups. There was a trend (p = 0.08) toward slower psychomotor speed at 5 days post-surgery in the open chamber group compared to the closed chamber group. There were no overall group differences in intraoperative changes in cerebrovascular oxygenation. A significant negative correlation (r = -.90, p = 0.04) was found between intraoperative cerebrovascular oxygen levels and psychomotor speed in five patients who experienced deep hypothermic circulatory arrest during surgery.