DIFFERENCES IN THE MANUAL AND CASA RESULTS IN SEMEN SPECIMENS BEFORE AND AFTER FREEZING. R.S. Sidhu,* R.K. Sharma, A.J. Thomas and A. Agarwal. Andrology Research & Clinical Laboratories, Department of Urology, The Cleveland Clinic Foundation, Cleveland, OH 44195

Computer-assisted semen analysis (CASA) was introduced during the last decade to improve the accuracy of results and bring objectivity to the assessment of sperm characteristics such as concentration and motility. The present study was carried out to evaluate: 1) the accuracy and precision of CASA, 2) to determine if differences in manual and CASA results were related to the type of CASA machine used or the type of semen specimen analyzed. Multiple ejaculates from normal healthy donors (n = 8, 220 specimens) and cancer patients (n = 57, 131 specimens) were examined manually and by CASA (Hamilton-Thorne IVOS or Motion Analysis Cell Track semen analyzer) before freezing and after thawing. MicroCell counting chambers were used both for manual and CASA assessment. The differences between the manual and CASA sperm count and motility were higher in pre-freeze and post-thaw specimens at concentrations of less than 20 X10^6/mL. In pre-freeze specimens, higher sperm count values were observed by HTM and MA (P < 0.02) as compared to the manual results; however, lower sperm counts were seen in the post-thaw specimens (P < 0.01). The percentage difference between CASA and manual results were significant in cancer patients (P = 0.011) compared to normal donors, and these differences were higher in cancer patients (HTM and MA, P < 0.0001). In post-thaw specimens, MA motility results showed no significant percentage difference with manual motility; whereas, significant differences were seen between manual motility and HTM motility (P < 0.0008). HTM analyzer in general gave lower motility than the manual method while MA gave higher readings. CASA results are unreliable at sperm counts of 20X10^6/mL and or when motility is less than or equal to 10%. They show minimum percentage difference from the manual results at sperm counts of greater than 80X10^6/mL. Manual verification of CASA results is necessary due to the lack of accuracy of CASA readings.