

exposure apparatus. Medical personnel intervened and after pulse and blood pressure were restored the subject was administered 100% oxygen. Blood pressure and pulse remained low (approximately $\frac{1}{2}$ of baseline) and the subject could not maintain consciousness in a seated position. The subject was reclined and moved to an operating room recovery area where he rested for approximately 1 hour after which the subject's vital signs had returned to pre-exposure values. Subject #3 displayed a rapid rise in blood concentration of HFC-134a which reached 1.29 mg/L at the 2.5 minute point in the exposure (Figure 3). The blood sample scheduled for 3 minutes was not collected. The medical representative had considerable difficulty getting blood from the cannula at the 3-minute point and significant manipulation of the indwelling cannula was noted. No further blood samples were taken.

Subject #5 was also exposed to 4000 ppm (0.4% v/v) HFC-134a. There was some difficulty with blood collection and manipulation of the cannula was noted, but exposure was uneventful through the first 10 minutes of exposure. Breathing effort and rate appeared normal. At approximately 10.5 minutes into the exposure the subject's blood pressure and pulse began to rise rapidly and the subject gave the hand signal for possible trouble. His pulse rose rapidly until it was double the pre-exposure value, at which time the subject gave the hand signal to terminate the exposure. The exposure was aborted and the subject began breathing room air, but the indwelling cannula was not removed from the subject. After 30 seconds, the subject's blood pressure and pulse were at pre-exposure levels. The HFC-134a concentration in blood reached 0.70 mg/L at the point where the exposure was terminated (Figure 3). Subject #5 breathed room air for 1 hour and was then re-exposed to 2000 ppm (0.2% v/v) HFC-134a. After 2.5 minutes of exposure, the subject's blood pressure and pulse again rose rapidly, the subject signaled trouble and the exposure was terminated. The subject's vital signs returned to pre-exposure levels within 30 seconds after the exposure was terminated. The in-dwelling cannula remained attached to the subject and blood was drawn for an additional 10 minutes at 1-minute intervals. The venous blood concentration of HFC-134a was 0.16 mg/L at the start of the 2000 ppm exposure and reached 0.38 mg/L at the time of exposure termination (Figure 3). The HFC-134a concentration was still at 0.2 mg/L 10 minutes after the exposure was terminated. No further human HFC-134a exposures were conducted.

In addition to the monitored effects, there were several subjective effects associated with the inhalation exposures to HFC-134a. Subject #3 reported problems with dizziness and balance following the exposure. At the time of this report (6 weeks post exposure), both the dizziness and balance problems still persisted. Subject #5 reported chest tightness and a headache with associated dizziness immediately following the exposure. The headache subsided by the time the subject woke up the day following the exposure. The day following the exposure, subject #5 reported unusual feelings in the chest resembling "flutters". The chest tightness was reported to subside within 3 days of the exposure and the "flutters" within 2 weeks of the exposure. As with subject #3, subject #5 was still experiencing dizziness and balance problems at the time of this report (6 weeks post exposure). Subject #5 also reported persistent ringing in the ears which was still present at the time of this report.