

What has the AFA done to learn more about the potential risks of cosmic radiation and disruption of circadian rhythms?

AFA has encouraged, supported, and participated in a number of research projects over the past 10 years in an effort to better answer the question of the nature and degree of any adverse health effects associated with various risk factors, including cosmic radiation and disruption of circadian rhythms.

In the early 1990s, a random sample of approximately 10,000 AFA members was asked to complete a comprehensive health survey. The study was conducted by researchers at the University of California, San Francisco. Of the AFA members that participated, the 418 who were pregnant during 1990 or 1991 were asked additional questions about fertility and pregnancy experience, as well as potential risk factors including exposure to cosmic radiation, disruption of circadian rhythms, chemical exposures (both on and off the job), and medical history. Because only one in three flight attendants responded to the survey, it was not possible to draw strong conclusions. However, the results suggested that women who continue to work as flight attendants during pregnancy, and those who fly relatively higher numbers of hours during pregnancy, may be at an increased risk for miscarriage, compared to flight attendants who do not perform such work.

On another research front, the AFA put significant effort into encouraging the National Institute for Occupational Safety and Health (NIOSH) to study flight attendants' reproductive health. The research project is ongoing and to date, NIOSH has established that it is possible to successfully measure and compare the ovulatory function, sleep disruption, and circadian rhythms of a group of flight attendants (including Seattle-based AFA members) to that of a group of teachers. According to NIOSH, ovulatory function is the most sensitive measure of female fertility and may provide an early indicator of an occupational hazard. NIOSH now plans to apply the sampling procedures that they have tested to a larger group of flight attendants to answer questions about their reproductive health.

The AFA has fully supported another ongoing NIOSH effort to characterize cosmic radiation exposures in flight. The data analysis is ongoing, and when the report is published, we plan to issue a summary to all of the bases.

In mid-November 2000, we received a final copy of the California Department of Public Health study that describes how cancer rates among AFA members based in California (CA) compare to cancer rates in the general CA population. The proportion of flight attendants diagnosed with all types of cancers combined was no different than the proportion of people in the general population. However, the rate of breast cancer among the *women* flight attendants was approximately 30% higher than among people in the general population, and the rate of malignant melanoma among flight attendants was approximately two times higher. The rate of Kaposi's sarcoma among male flight attendants was also disproportionately high, but because this cancer is associated with viral infection, job-related hazards can be ruled out. An interpretation of these results, so far as is possible, is provided on our web site and has been distributed to all of the bases.

Finally, as we have told the Federal Aviation Administration (FAA) in writing, the AFA position is that radiation education should be regulated and enforced. We fully support radiation education for flight attendants, and have prepared a bulletin (last updated January 2004) that describes what factors influence radiation exposure/dose as well as the potential health risks. The bulletin has been distributed to the safety and health chairs at each base, and is posted on the AFA website.