THE LONGITUDINAL STUDY OF ASTRONAUT HEALTH

LSAH Newsletter

June 2001 Volume 10 • Issue 1

Nutritional Intake of LSAH Participants

The Food Frequency Questionnaire (FFQ) was sent out in the fall of 1998 to collect nutrition data from LSAH participants. A total of 645 participants answered and returned this survey. The 116 male astronaut respondents had a mean age of 48.2 years, while the 448 male comparison participants had a slightly higher mean age of 50.8 years. The female respondents were generally younger, reporting a mean age of 39.3 and 40.5 years for astronauts (N=21) and comparison participants (N=66), respectively.

To compare the LSAH participants to the U.S. general population, results of a national survey, the 1994-96 Continuing Survey of Food Intakes by Individuals (CSFII), are also presented. In particular, the findings for respondents over 20 years of age (5056 males and 4816 females) are used as comparison to those of the astronaut and comparison participants.

In Figure 1, the total kilocalories (Kcal) typically consumed by respondents of both surveys is represented by the line, and corresponding percentages of total fat, protein, and carbohydrates in their typical diets are represented by bars. When compared to the results of male CSFII respondents 20 years old and over, male LSAH participants reported a lower total consumption of kilocalories. The lower consumption values hold true even when compared to the CSFII respondents in the age groups closer to the mean ages of the male comparisons and astronauts (Table 1, age groups 40-49 and 50-59 years of age). Female comparison participants reported a mean value similar to that reported by female CSFII respondents 20 years and older (Figure 1). Female astronauts, however, had a lower mean total intake than this group of CSFII respondents. Their reported value comes closer to values for those 50-59 years of age and older instead.

When the caloric intake is broken down into fat, protein, and carbohydrates, LSAH astronauts and comparison participants reported values similar to those reported by the CSFII respondents (Figure 1).

This brief summary of nutritional intake shows that in general male LSAH astronauts and comparison participants report a lower total consumption as compared to the general population, while female astronauts show a lower intake as compared to the general population. The proportions of fat, protein, and carbohydrates of astronauts and comparisons are similar to that reported in the CSFII. Therefore, the composition of LSAH participants' diet does not substantially differ from that of the general population. ■

Figure 1. Mean Total Intake of FFQ and CSFII Respondents

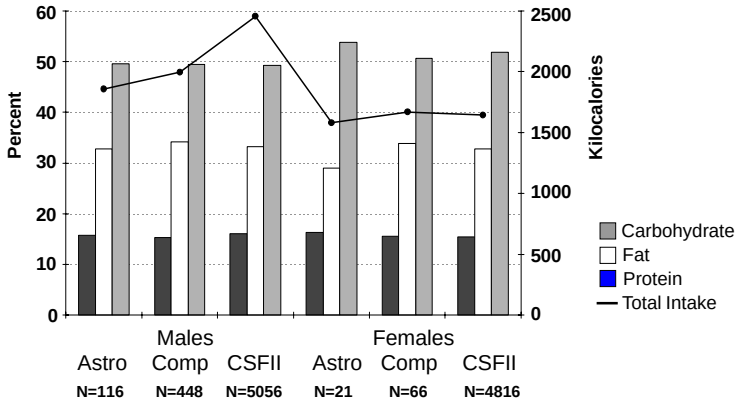

Table 1. Mean Total Intake and Percentages of Fat, Protein, and Carbohydrates of LSAH and CSFII Respondents

		N	Total Intake Kcal	Fat	Protein	Carbohydrates
				Percent of Kcal		
Male Respondents						
LSAH Astronauts	32-52 yrs	116	1860	32.8	15.7	50.6
LSAH Comparisons	29-72 yrs	448	1999	34.2	15.2	49.4
CSFII	40-49 yrs	862	2435	33.1	16.0	49.2
	50-59 yrs	888	2270	33.8	16.3	48.7
Female Respondents						
LSAH Astronauts	28-51 yrs	21	1581	29.0	16.3	53.8
LSAH Comparisons	32-52 yrs	66	1668	33.8	15.5	50.6
CSFII	40-49 yrs	902	1682	33.4	15.6	51.1
	50-59 yrs	864	1600	32.4	16.5	51.2

How Secure are Your Medical Data?

Before the days of insurance claims, multiple healthcare providers, and an increase in medical research, there was little need to worry about the security of personal medical records. Accordingly, today's use and disclosure of medical information has become complex and controversial. This is further complicated by the availability of access to medical records and other confidential data via the World Wide Web. Although individual states have passed laws to help protect the privacy rights of patients, there is still a lack of comprehensive and standardized legislation on the nationwide level.

Initially there were two primary federal privacy laws: the Privacy Act of 1974 and the Freedom of Information Act of 1966. In essence, the Privacy Act establishes the confidentiality of government records kept on individuals, while the Freedom of Information Act gives individuals the right to obtain access to federal agency records; basic limitations apply to each of these acts. However, privacy standards for medical records were not addressed until 1996, when President Clinton and Congress passed the Health Insurance Portability and Accountability Act, or HIPAA. HIPAA is primarily designed to increase an individual's chance of maintaining healthcare coverage when starting a new job, or in transition between jobs or other individual healthcare plans. Included in HIPAA is an Administrative Simplification provision, which is designed to simplify administrative and financial transactions by making them standardized and electronic.

Despite the final release of HIPAA regulations in December 2000, no enforceable government guidelines for securing electronic data have yet to be established. The protocols of both LSAH and the Comprehensive Medical Information System (CMIS) provide physical security and maintenance measures that are primarily based on the Privacy Act.

LSAH maintains an electronic system of medical records on astronauts and comparison JSC employees, which originate in the JSC Flight Medicine Clinic (FMC), Occupational Medicine Clinic, and in private medical clinics. Data security is addressed in both the LSAH Security Policy, which was developed to identify and circumvent potential security issues, and in the LSAH Manual of Procedures, which spells out complex data handling and security measures that must be followed by staff members. The primary goals of each document are to limit access to confidential data and to ensure the integrity of research data. Only individuals who require access to medical records in order to complete their job functions are allowed to access the system. Before access is granted to staff members, a confidentiality agreement based upon the Privacy Act must be signed. The agreement states the confidential nature of study records and the penalty for mishandling data. Additional security features include multiple complex passwords, limited log-in times, user accounts, workstation locking and back-up tape security.

CMIS aims to integrate and standardize astronaut medical data collected at various sites (*e.g.*, FMC, Kennedy Space Center, International Space Station). Through CMIS, patient electronic medical records are updated in real time as examinations take place in the FMC. Many of the data points collected are electronically transferred into the LSAH database. All of the confidentiality concerns of LSAH also apply to CMIS. Consequently, CMIS has an elaborate security protocol in place as well. Included in the protocol are the use of software security settings, network activity monitoring, intruder lockouts, and a robust firewall.

The security and confidentiality of medical data have always been priorities for both LSAH and CMIS. LSAH and CMIS anticipated requirements for transmission of confidential data and exceeded current industry standards. Both projects intend to maintain their high standards and upgrade their security protocols as new technology develops and legal requirements are established. ■

For your information

If you want a copy of your exam results, please complete and sign a release form while you are visiting the Clinic for your examination. The form is called *Privacy Act Disclosure Authorization and Accounting Record (DAAR)*, or NASA Form 1536.

...and ours

If you have a new address or phone number, please let us know by calling (281)244-5195 or (281)483-7999. You may also write us at:

Longitudinal Study of Astronaut Health
Flight Medicine Clinic/SD26
Johnson Space Center/NASA
2101 NASA Road 1
Houston, Texas 77058-3696

or e-mail us at:
mwear@ems.jsc.nasa.gov