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...and ours

If you have a new address or phone number, please let us know by calling (281) 212-1362 or (281) 483-5785 or write us at: The Longitudinal Study of Astronaut Health Flight Medicine Clinic/SD26 Johnson Space Center/NASA 2101 NASA Road 1 Houston, Texas 77058-3696

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These data demonstrate the importance of examining data for clinical relevance when a statistically significant result is reported. Although the t-tests were statistically significant at the 0.05 percent level, all lab parameters remained within normal ranges. For example, the normal range for serum glucose is 78 to 110 mg/dl. The group mean glucose value at L-3 (3 days before launch) was 92 mg/dl. The group mean glucose value at R+0 (landing day) was 101. Both of these group mean values are well within normal ranges. The difference between the group means is 8.7 mg/dl, that is, the R+0 group mean is 8.7 units greater than the L-3 mean value. Although this difference is significant at the 0.05 percent level (exact P value = 0.0001), it is not clinically important. There is no health impact from this small temporary increase in serum glucose.

For our purposes...
Secondhand smoke and you

What is secondhand smoke?

Secondhand smoke is a combination of the smoke breathed out by smokers and the smoke from the burning end of a cigarette, cigar, or pipe. Secondhand smoke is also called environmental tobacco smoke or sidestream smoke. Exposure to secondhand smoke is called involuntary smoking, or passive smoking. Secondhand smoke is classified by the Environmental Protection Agency as a known human carcinogen.

Secondhand smoke contains more than 4,000 substances, more than 40 of which are known to cause cancer in humans and many of which are strong irritants. Carbon monoxide is a poisonous gas that is also found in car exhaust fumes. Nicotine is a stimulant and an addictive drug. Tar is a sticky mixture of chemicals that cause cancer. Secondhand smoke also contains pesticides, polycyclic aromatic hydrocarbons, metals such as arsenic, and ammonia.

The amount of smoke a nonsmoker breathes in depends on how close they are to the smoker(s), the size of the room, the number of smokers in the room, if the windows are open, if there are extractor fans, and the number of cigarettes smoked.

What effect does secondhand smoke have on you?

Secondhand smoke causes irritation of the eyes, nose, and throat. It can also irritate the lungs, leading to coughing, excessive phlegm, chest discomfort, and reduced lung function. Secondhand smoke is a contributing factor in about 3,000 deaths each year from lung cancer in people who don’t smoke (never smoked and former smokers).

Two components of secondhand smoke that may increase the risk of heart disease are carbon monoxide and nicotine. Carbon monoxide competes with oxygen for binding sites on red blood cells. This reduces the amount of oxygen in the heart and compromises the heart’s ability to use oxygen efficiently. Nicotine activates blood platelets, which increases the risk of blood clots, damages the lining of coronary arteries, and promotes the development of atherosclerosis.

Secondhand smoke has been linked with the onset of chest pain and is associated with death from heart disease in 37,000 people each year. It is estimated that 90,000 to 180,000

continued on page 3

ACROSS

3. Exposure to secondhand smoking is also called _____ smoking.
5. Try to help smokers _____.
7. Poisonous gas found in cigarette smoke and car exhaust fumes.
8. Secondhand smoke is formed by burning _____.
10. _____ are more severely affected by secondhand smoke than are adults.
11. Secondhand smoke is a contributing factor in 3000 deaths from _____ annually.
12. Irregular heartbeats.

DOWN

1. Secondhand smoke causes _____ of the eyes, nose, and throat.
2. Serious respiratory tract infection associated with exposure to secondhand smoke.
4. Children exposed to secondhand smoke are more likely to develop _____.
6. A stimulant and an addictive drug found in tobacco products.
7. A cancer-causing agent is called a _____.
9. Serious lower respiratory tract infection.
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Secondhand smoke has been linked with the onset of chest pain and is associated with death from heart disease in 37,000 people each year. It is estimated that 90,000 to 180,000 non-fatal heart attacks and 30,000 to 60,000 fatal heart attacks each year are associated with secondhand smoke.

People exposed to secondhand smoke show a reduced exercise capability. People with existing heart disease cannot exercise as hard or as long when exposed to secondhand smoke and are more likely to develop arrhythmias (irregular heart beats). People with no signs of heart disease take as long as those with heart disease to return to their resting heart rate following exercise when exposed to secondhand smoke.

Children have more delicate lungs than adults and are more affected by secondhand smoke and the chemicals it contains. Children who breathe secondhand smoke have more ear infections, tonsillitis and sinusitis. They are more likely to develop asthma. An estimated 8,000 to 26,000 new cases of asthma annually are attributed to exposure to secondhand smoke. Children who have asthma and who breathe secondhand smoke have more asthma attacks. The Environmental Protection Agency estimates that between 200,000 and 1,000,000 asthma attacks in children have their condition made worse by exposure to secondhand smoke. Children who breathe secondhand smoke are also more likely to suffer from pneumonia, bronchitis, and other lung diseases. There are an estimated 150,000 to 300,000 cases every year of serious lower respiratory tract infections, such as bronchitis and pneumonia, in children under 18 months of age who breathe secondhand smoke. Of these infections, between 7,500 and 15,000 require hospitalization.

What can you do to protect yourself from secondhand smoke?

Don’t smoke in your home. Ask smokers politely not to smoke when they are near you, especially when you are indoors or in a car. If they don’t stop smoking, move away yourself. If someone must smoke inside, limit them to rooms where windows can be opened or fans can be used to send the smoke outside. In restaurants and bars, ask to sit in the non-smoking area. JSC is a smoke-free workplace, but if you do not work at JSC, ask your employer to make sure you do not have to breathe other people’s smoke at work. Help people who are trying to quit smoking.

For more information on the Freedom From Smoking programs or programs to quit smoking, contact your local American Lung Association at 1-800-LUNG-USA (1-800-564-8532).

Note 2/11/2000: Crossword file can not be found at the moment.
Many of the differences between preflight and postflight lab parameters can be explained by physiologic stress, hemoconcentration, and relative hypovolemia, which are experienced in the short-term by space participants. An important confounding factor is that the preflight serum samples were collected following a 12 to 14 hour fast. Postflight serum samples were collected after a meal (breakfast) and fluid loading and possibly food intake between landing and blood draw.

In conclusion, the differences between preflight and postflight measurements can be attributed to any of the factors described above. However, the differences appear to be too small to be clinically significant. Future analyses will examine the recovery curve between R+0 and R+3 because crew members typically return to duty and return to flight status after R+3.

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The nutrient intake data needed by LSAH differs from that needed by the NASA Nutrition group. The Nutrition group is concerned with assuring that intake is sufficient to meet the nutritional needs of crewmembers during flights and other job specific tasks. LSAH is concerned with collecting data that represent the usual, long-term nutrient intake and relating that intake to lifelong disease outcomes. Therefore, the method of measuring nutrient intake may differ significantly and the handling of the data will differ. We try to measure intake as accurately as possible but some of you may be asked to complete dietary intake questionnaires or records in what may seem to be a repeated effort. We appreciate your efforts to support the long-term efforts of this study.

Crossword Answers


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There are many factors that may influence postflight lab parameters. In-flight factors include space motion sickness, fluid shifts, neurovestibular and cardiovascular changes associated with weightlessness, diet, medications usage, in-flight illness or injury, fatigue, circadian dysynchrony, exposure to environmental toxins, and mission duration. Factors that are not directly related to occupation.