



2011
Healthier You

NASA HealthierYou Calendar 2011

NASA Occupational Health

Introduction

The NASA Office of the Chief Health and Medical Officer (OCHMO) presents its seventh annual HealthierYou Calendar. This health calendar is only one component of the Agency's HealthierYou preventive health education and awareness program, which in turn is a constituent element of NASA Occupational Health (OH). This year's Calendar is focusing on NASA OH services and program components.

The science of occupational health is the implementation of public health principles at worksites. NASA OH has an extensive history under the auspices of OCHMO. Comprised of approximately 400 occupational health professionals, NASA OH has focused on maintaining and promoting a healthful work environment to enhance productivity and optimal health both on and off the job.

While public health practitioners understand the connection between the way we lead our lives, our impact on the planet, and the planet's impact on our health, NASA OH practitioners understand the connection between the way we lead our lives and the impact of the work environment on our health, and vice versa.

The science of public health is credited with adding 25 years to the life expectancy of people in the United States in the 20th century, making associated laws and regulatory statutes of great importance. Some of the greatest public health achievements are a) Vaccination, b) Motor-vehicle safety, c) Safer workplaces, d) Control of infectious diseases, e) Decline in deaths from coronary heart disease and stroke, f) Safer and healthier foods, and g) Recognition of tobacco use as a health hazard.

As you read through this publication you will notice how NASA OH has woven some of the aforementioned public health achievements into the fabric of their programs through a semi-integrated delivery model.

NASA Occupational Health

An integrated approach ensures delivery of multiple but necessary service lines within a single network or infrastructure. Integrated delivery models of care are efficient and can adapt to change very quickly because everyone works collaboratively and for a common goal. No one service line functions in isolation.

NASA OH program components are comprised of a number of service lines. Discipline experts plan and implement the many program and regulatory requirements in each of the service lines.

NASA OH program components include:

- Worksite Occupational Health Clinics
 - ◇ Health awareness and education
 - ◇ Preventive health services through screening and surveillance
 - ◇ Treatment of on-the-job injuries and illnesses
- Employee Assistance Program (EAP)
- Worksite Fitness Facilities
- Federal Workers' Compensation
- Environmental Health
 - ◇ Industrial Hygiene
 - ◇ Health Physics
 - ◇ Sanitation

Public health laws derive from Federal and state constitutions, statutes, legislative enactments, and judicial rulings. NASA OH program requirements derive from these laws as well as NASA's procedural directives, guidance documents, and requirements (NPD, NPG, and NPR).

Public health practitioners have successfully included epidemiology and law in their toolkit to better address and study emerging threats, chronic diseases, and other National health priorities. NASA OH practitioners work collectively and utilize a variety of databases to identify and mitigate workplace hazards with the goal of optimizing employee health and productivity.

Workplace Health

The word "workplace" refers to the overall environment where work is being done. It refers to the office, the shop, relationships with colleagues and management, the cafeterias and the meals served, training sessions, business travel, conferences, work related social gatherings, etc.

In the light of this definition, workplace hazards are classified into three categories:

- Physical—hazards due to an interaction between an object and a worker
e.g., falling from a height, a welding burn.
- Chemical—hazards due to contact with chemicals
e.g., solvents, pesticides, fertilizers.
- Biological—hazards due to contact with living organisms or their by-products
e.g., molds, bacteria.

It is required by law for all workers to know about workplace hazards and ways of mitigating their harmful effects. Not every exposure equates to a hazard or risk to health nor does every hazard become life threatening. A hazard may factor in impeding functionality and productivity. Sometimes, an employee can't believe "it" will happen to them or "things" could be that dangerous. This inherent conflict between reality and perception is a great challenge when promoting best practices.

Employee Health Resources

OCHMO advocates for Agency-wide worksite health programs to promote and maintain the physical and mental fitness of employees; to enhance health awareness through education; and to provide preventive health services at all NASA Centers and Facilities.

To meet the overall objective of keeping the NASA workforce healthy and productive OCHMO is pleased to announce the return of the **Mayo Clinic EmbodyHealth** in 2011. NASA chose Mayo Clinic because their services and products are industry recognized and have high relevance for NASA employees.

You will need the following unique identifier, **healthiernasa**, one word - not case sensitive, to access the web portal www.nasahealthieryou.com.

If you have any questions please contact Mae Hafizi, homeyra.hafizi-1@nasa.gov, at (321) 867-3646, or Gail Bantugan, gail.a.bantugan@nasa.gov, at (321) 867-3164.

Image Choices

The retirement of the Shuttle Program and the cancellation of the Constellation Program have led to numerous discussions and heated debates in identifying a new mission for the Agency. In spite of the uncertainty, NASA's workforce continues to advance science and technology on Earth and knowledge about the solar system and the Universe.

Many of NASA's programs have become part of American history and a source of pride and identity. Projects Mercury, Gemini, and Apollo, the Shuttle Program, the collaborative International Space Station (ISS), the Hubble telescope for studies of deep space, solar studies, planetary science, and aeronautics name only a few. Our images are a historic depiction of these accomplishments. We look back with pride in order to go forward with determination and relentless optimism.

REFERENCES

Due to space constraints we have limited descriptions printed in this calendar. We invite you to access the following website for more details and information:

NASA Occupational Health: www.ohp.nasa.gov

NASA sponsored Mayo Clinic EmbodyHealth: www.nasahealthieryou.com

Occupational Safety and Health Agency: www.osha.gov

Centers for Disease Control and Prevention: www.cdc.gov

National Heart, Lung, and Blood Institute: www.nhlbi.nih.gov

American Public Human Services Association: www.nasmhpd.org

National Association of State Mental Health Program Directors: www.nasmhpd.org

Food and Drug Administration: www.fda.gov

MOON PHASES

2011 phases of the Moon are based on Universal Time coordinated with these symbols:

New moon  First quarter  Full moon  Last quarter 

www.usno.navy.mil

CALENDAR EVALUATION

A PDF of the calendar and the calendar evaluation are available on our website. You may call us directly at (321) 867-3646 to provide your comments.

www.ohp.nasa.gov/healthcalendar

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DEFINITIONS AND ACRONYMS

Occupational Safety and Health Programs (OS&H) - Federal agencies are mandated by several United States Codes (U.S.C.) to establish OS&H programs that are consistent with OSHA standards. The goal of OS&H programs is to create a safe and healthful work environment in the Federal sector.

Occupational Safety and Health Agency (OSHA) – OSHA establishes and enforces program requirements for OS&H services in both Federal and private sectors.

United States Codes (U.S.C.) – Permanent Federal laws of the United States.



In the beginning...

JANUARY • 2011

Launch a HealthierYou by taking the Mayo Clinic Health Assessment: www.nasahealthieryou.com

Read more and complete the calendar evaluation: www.ohp.nasa.gov/healthcalendar



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
DECEMBER 2010 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	FEBRUARY S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	Cervical Cancer Awareness Month Thyroid Awareness Month Glaucoma Awareness Month			New Year's Day Observed (Federal holiday)	1 New Year's Day
2	3	4 ●	5	6	7	8
9	10	11	12 ☾	13	14	15
16	17 Martin Luther King, Jr. Day (Federal holiday)	18	19 ○	20	21	22
23	24	25	26 ☾	27	28	29
30	31					

US Preventive Services Task Force (USPSTF)

USPSTF is an independent government panel of experts in primary care and prevention. The panel systematically reviews the evidence for effectiveness of diagnostic and screening exams. It develops recommendations to guide your physician's decisions to order a particular screening or an exam based on age and gender.

www.uspreventiveservicestaskforce.com

Question/Activity:

1. If you injure yourself at home but the injury starts to bother you at work, can you use the services of the worksite OH Clinic at your Center?
2. Are you due for a screening? What was the date of your last physical exam?

For answers or guidance refer to the calendar insert and www.ohp.nasa.gov/healthcalendar.



Mercury Program



FEBRUARY • 2011

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
JANUARY S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	MARCH S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1	2	3 ●	4	5
6	7	8	9	10	11 ◐	12
13	14 Valentine's Day	15	16	17	18 ○	19
20	21 Presidents' Day (Federal holiday)	22	23	24 ◐	25	26
27	28	<i>American Heart Month</i>				

Heart Health

www.americanheart.org www.nhlbi.nih.gov

Your heart's optimal function depends on coordinated actions of three systems:

Electrical - The Sinoatrial node (SA Node) in the heart generates the electrical impulse.

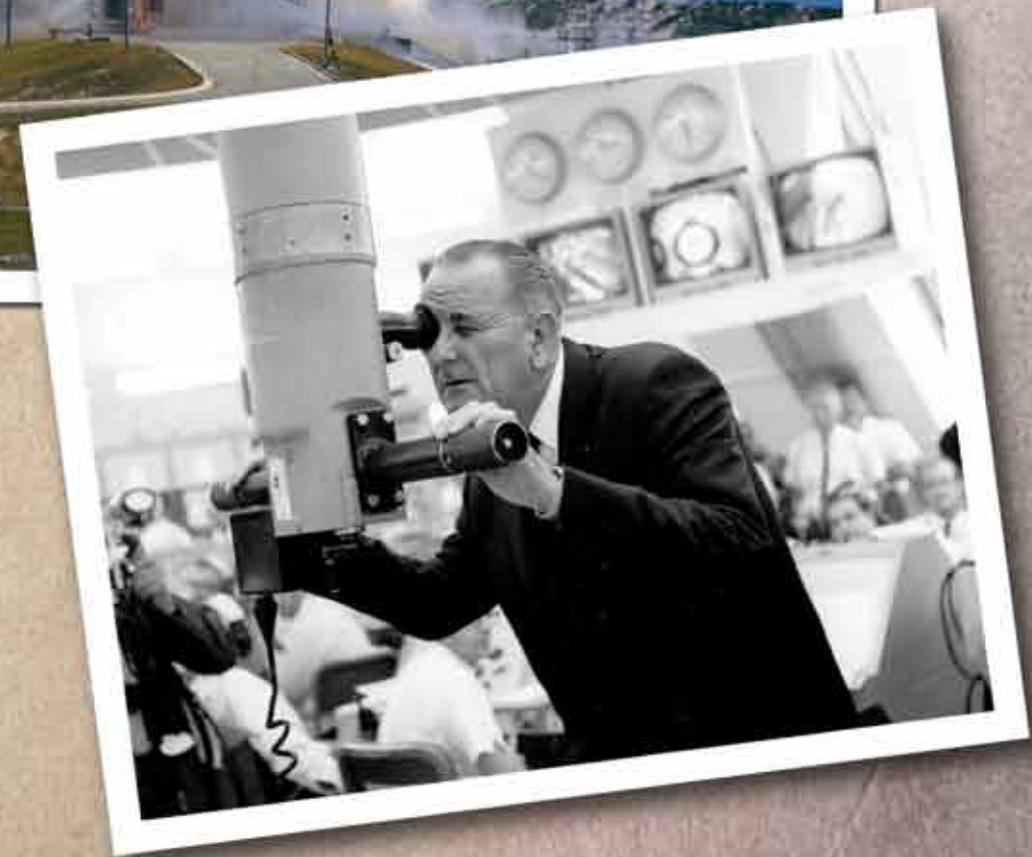
Mechanical - The heart muscle responds to the electrical impulse with the mechanics of pumping to circulate the blood.

Vascular - Blood circulates in the body through a series of vessels. Arteries carry oxygen-rich blood away from the heart and veins deliver oxygen-depleted blood back to the heart. Coronary arteries supply the heart muscle with oxygenated blood.

Cardiovascular disease is caused by failure of one, or a combination, of the three systems.

Question/Activity:

1. Diseases of the heart are often preventable and mostly treatable. Can you name three cardiac conditions, explain which of the three functional systems is (are) involved, and why?
2. Where is the location of the nearest AED to your office?
3. February is Heart Health Month. What actions are you taking to secure your heart health? Follow some or all of our suggestions.



Gemini Program

MARCH • 2011

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6	7	8	9 Ash Wednesday	10	11	12 ◐
13 Daylight Savings Time Begins	14	15	16	17 St. Patrick's Day	18	19 ◉
20 Spring Begins	21	22	23	24	25	26 ◐
27	28	29	30	31	National Nutrition Month National Sleep Awareness Week: March 7-13	

The Way We Sleep

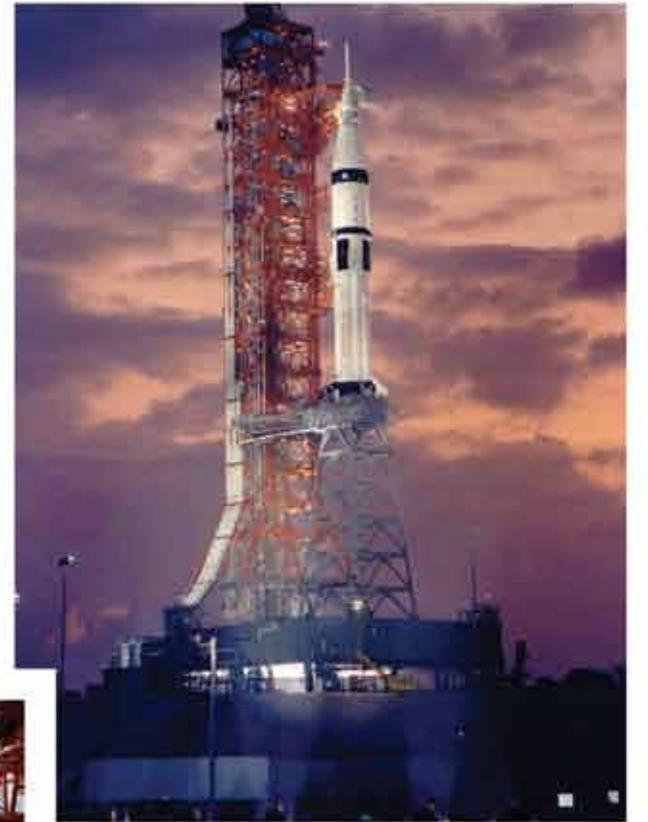
Basal sleep is the amount of sleep our bodies need regularly for optimal performance. Sleep debt is the accumulated loss of sleep due to poor habits or medical conditions such as sleep apnea. Poor sleep habits are also associated with reduced safety on the job and health problems like high blood pressure. Sleep quality and duration are affected by such factors as age, gender, obesity, and certain medical conditions like asthma.

www.sleepfoundation.org

Question/Activity:

1. What health risks are associated with sleep apnea or poor sleep habits?
2. Are you ready to use Diabetes PHD, a risk assessment tool?

For answers or guidance refer to the calendar insert and www.ohp.nasa.gov/healthcalendar.



Saturn
Rocket

APRIL • 2011

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
MARCH S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	MAY S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	<i>National Alcohol Awareness Month</i> <i>March for Babies Month</i>			1	2
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10	11 ◐	12	13	14	15	16
17 Palm Sunday	18 ○	19 Passover	20	21	22 Good Friday	23
24 Easter	25 ◐	26	27 Administrative Professionals Day	28	29	30

ABCs of Healthy Pregnancy

About half of all pregnancies are unplanned. Many birth defects happen very early in pregnancy, sometimes before a woman knows she is pregnant. Although not all birth defects can be prevented, women can increase their chance of having a healthy baby by following some simple steps.

Avoid exposure to toxic substances and chemicals such as cleaning solvents, some insecticides, and paint.

Be sure to consult your health care provider regarding prenatal care and breastfeeding.

Cigarette smoking during pregnancy increases the chances of premature birth, low birth weight, miscarriage, certain birth defects, and infant death.

For the complete A-Z list visit www.cdc.gov and www.osha.gov.

Question/Activity:

1. How much weight gain is healthy during pregnancy?
2. Identify three work practice guidelines that are protective of your health and the health of your fetus.

4x5 FILM



220 EPC SSO



Apollo Program

MAY • 2011

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29	30 Memorial Day (Federal holiday)	31	National Stroke Awareness Month National High Blood Pressure Education Month		APRIL <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> </table>	S	M	T	W	T	F	S						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	JUNE <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td></tr> <tr><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td></tr> <tr><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td></td><td></td></tr> </table>	S	M	T	W	T	F	S					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
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Hypertension: The Silent Killer

One third of adults in the Nation have hypertension or high blood pressure (BP). It is especially prevalent in the overweight, the diabetic, or those with sleep apnea. It is called the silent killer because there are often no symptoms. Hypertension responds positively to modifications in diet and physical activity. Recent findings focus more attention on the importance of systolic blood pressure as a major risk factor for cardiovascular disease, especially for people over 50 years of age.

Normal BP: 120/80 or lower
 Pre-hypertension Range: 120 - 139/80 - 89
 Hypertensive: 140/90 or higher

www.americanheart.org www.nhlbi.nih.gov

Question/Activity:

1. Does salt intake affect blood pressure?
2. What are the five Sudden Stroke Warning Signs?
3. Can you name a few protective industrial hygiene activities or programs at your worksite?



spacewalk (EVA)



Saturn 1B



Orbital Workshop



Astronauts of skylab 3



JUNE • 2011

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12	13	14	15 ○	16	17	18
19	20	21	22	23 ●	24	25
Fathers' Day		Summer Begins				
26	27	28	29	30	National Safety Month National Men's Health Week: <i>June 13-19</i> Lightning Safety Week: June 20-26	

Aggressive Driving vs. Road Rage

www.nsc.org www.nhtsa.dot.gov

Aggressive driving is a Traffic Offense. Road rage is a Criminal Offense.

Aggressive driving is a progression of unlawful driving actions such as speeding, improper or excessive lane changing, or improper passing. Road Rage is assault with a motor vehicle or other dangerous weapon by the operator or passenger(s) of a motor vehicle, or an assault precipitated by an incident that occurred on a roadway.

Many traffic incidents occur during the workday or during the work commute. Every 12 minutes someone dies, every 10 seconds someone is injured, every 5-8 seconds a crash occurs.

Question/Activity:

1. How can unsafe driving practices be reduced or stopped?
2. Is it true that the posted speed limit applies to the slow lanes only?

Implementation of Public Health Principles Through Worksite Occupational Health Services at NASA

Public Health Laws	NASA Occupational Health Program	NASA Occupational Health Services	Questions/Activities/Answers									
JANUARY - US Preventive Services Task Force (USPSTF)												
<p>Occupational Safety and Health Programs in Federal Agencies 29 CFR 1960 establishes basic OS&H program elements for Federal Agencies. 5 U.S.C. 7901 authorizes Federal Agencies to establish limited health service programs by contract or as otherwise stated.</p>	<p>OCHMO advocates for Agency-wide worksite OH services and establishes program requirement via NPR 1800.2, NPR 1800.1C, and NPR 8715.1.</p>	<ul style="list-style-type: none"> • Worksite Occupational Health Clinics • Employee Assistance Program (EAP) • Worksite Fitness Facilities • Federal Workers' Compensation • Environmental Health 	<p>Question</p> <ol style="list-style-type: none"> If you injure yourself at home but the injury starts to bother you at work can you use the services of the worksite OH Clinic at your Center? <ul style="list-style-type: none"> • In this situation, where a non-occupational injury or illness is exacerbated at work, the services of a worksite OH Clinic can be utilized to reduce pain and discomfort, to ensure the condition is not contagious, and at the least to provide medical assessment, consultation, and referral. • Worksite OH Clinics are designed to: <ul style="list-style-type: none"> • Proactively address the effects of workplace hazards on employee health through screening and surveillance measures. • Engage in a variety of health education and disease prevention programs. • Reduce time away from productive work due to illness and injury. Are you due for a screening? What is the date of your last physical exam? January is: <ul style="list-style-type: none"> • Cervical Cancer Awareness Month – Schedule a pap smear • Thyroid Awareness Month – Obtain a blood test for TSH • Glaucoma Awareness Month – Schedule an eye exam to check pressure in eye 									
FEBRUARY - Heart Health												
<p>Public Access Devices (PAD) Legislation The PAD legislation encourages greater acquisition, deployment, and use of Automated External Defibrillators (AED) at work sites and in communities. The goal of PAD legislation is to reduce the number of deaths associated with sudden cardiac arrest. The American Heart Association estimates that at least 20,000 lives could be saved annually by using an AED.</p>	<p>OCHMO requires, advocates for, and monitors the use of AEDs in conjunction with CPR and rapid entry into the community Emergency Medical System (EMS). Trained non-medical personnel can use AEDs. OCHMO monitors Center OH compliance with this directive.</p>	<p>Each NASA Center has a specific policy for management, maintenance, and use of AEDs.</p>	<ol style="list-style-type: none"> Diseases of the heart are often preventable and mostly treatable. Can you name three cardiac conditions, explain which of the three functional systems is (are) involved, and why? <ul style="list-style-type: none"> • Sudden Cardiac Arrest (SCA) - The heart abruptly stops beating because of an abnormal rhythm called ventricular fibrillation (Vfib). If not immediately treated by using an AED and initiating the chain of survival, SCA can lead to death. This is a disease of the electrical system. • Cardiomyopathy - The heart muscle becomes enlarged, thick, or rigid. The heart is less able to pump blood or to maintain a normal electrical rhythm. Heart failure, arrhythmia, and heart valve problems ensue. Fluid can build up in the lungs, ankles, feet, legs, or abdomen. This is a disease of the mechanical system. • Atherosclerosis - Plaque builds up inside the arteries, narrowing them over time, and limiting the flow of oxygen-rich blood. This can lead to problems including heart attack, stroke, or even death. This is a disease of the vascular system. Where is the location of the closest AEDs to your office? <ul style="list-style-type: none"> • Each Center has designated its own locations for AEDs. If you are unable to easily locate AEDs at your Center, contact the onsite OH Clinic to identify their placement. February is Heart Health Month. What actions are you going to take to secure your heart health? Follow some or all of our suggestions. <ul style="list-style-type: none"> • Visit www.nasahealthieryou.com, a Mayo Clinic empowered web portal, and complete the Health Assessment. Registration is required and it takes less than five minutes. • Get screened. Do you know what screening test is appropriate for your gender and age? Visit www.hearthis.org for answers. • Visit your Center's onsite OH Clinic if you are eligible for a health maintenance exam. All NASA Federal employees are eligible to do so. 									
MARCH - The Way We Sleep												
<p>Occupational Safety and Health Act of 1970 Williams-Steiger Occupational Safety and Health Act, Public Law 91-596, was enacted on December 29, 1970 and amended several times. Goal - to assure a safe and healthful workplace. Enforcement - by OSHA. Some states have developed more stringent rules such as California.</p>	<p>Through a structured review process, NASA OCHMO ensures compliance with all applicable regulations and requirements at all NASA centers for the OH disciplines and programs.</p>	<p>OCHMO advocates for an effective injury reduction program that goes beyond the traditional models by greatly emphasizing health education and engaging personnel in lifestyle management strategies.</p> <p>Years of validated and reliable research has shown an association between higher occurrence of occupational injuries with certain personal and lifestyle risk factors such as smoking, excess weight, and alcohol abuse.</p>	<ol style="list-style-type: none"> What health risks are associated with sleep apnea and poor sleep habits? <ul style="list-style-type: none"> • Poor sleep habits can lead to stroke, heart attack, congestive heart failure, excessive daytime sleepiness, worksite and driving accidents, etc. • Sleep apnea is often associated with people who are overweight. When an individual's abdomen, chest, and neck area increase from weight gain, the condition can lead to respiratory compromise during sleep. • Those suffering from sleep apnea may be less motivated to diet or exercise because daytime sleepiness lowers their energy levels and makes it difficult to commit to an exercise and/or diet program which would in turn improve both their weight and sleep apnea. This vicious cycle where one condition leads to the other and impedes the individual from seeking treatment for both is a slippery slope. • Seek treatment for the condition that brings about the most immediate and positive change. In this case, when effectively treated for sleep apnea you will feel restored and inclined to exercise. Are you ready to use Diabetes PHD, a risk assessment tool? <ul style="list-style-type: none"> • Diabetes PHD (Personal Health Decisions) is a powerful risk assessment tool for exploring the effects of a wide variety of health care interventions on your overall health status including losing weight, stopping smoking, and taking certain medications. • In order to provide the most accurate health information, Diabetes PHD will ask you to create a personal health record by entering certain information such as height, weight, last dilated eye exam, current medications, A1c number, etc. • In a short time, Diabetes PHD determines a personalized Results Overview showing your current risk for diabetes, heart attack, stroke, kidney failure, and foot and eye complications. By changing certain variables in your profile you will see how these changes would positively affect your future health. <p>To access the tool visit: http://www.diabetes.org/living-with-diabetes/complications/diabetes-phd/</p> 									
APRIL - ABCs of Healthy Pregnancy												
<p>Reproductive Health Reproductive hazards affect the ability of couples to have healthy children including but not limited to infertility, miscarriage, and birth defects. OSHA's Hazard Communication Standard (Right-to-Know/Hazcom) compliance is one of the regulations that protects all employees. Employees (especially those contemplating pregnancy or who are pregnant) have a need and a right to know their work hazards and any protective measures that should be implemented to ensure their health and well-being.</p>	<p>NASA protects the reproductive health of all employees, students, and visitors from exposures, known or suspected, including protection of the fetus. NASA accomplishes this through a comprehensive Environmental Health program including Industrial Hygiene and Health Physics.</p>	<p>Workplace training is one part of meeting the Hazcom standard. Most NASA employees participate in at least some level of safety and health education, training, and health monitoring program. The level of participation depends on their job responsibilities, level of potential/actual exposures to hazardous materials, and other criteria dictated by Federal, state, and local regulation.</p>	<ol style="list-style-type: none"> How much weight gain is healthy during pregnancy? <ul style="list-style-type: none"> • In general, you should gain about 2 to 4 pounds during your first three months of pregnancy and 1 pound a week for the remainder of your pregnancy. This may differ slightly if you are expecting multiple births. To help your baby grow you need about 300 additional calories per day. Consult your healthcare provider about how much weight you should gain during pregnancy. There is no one right answer and your pre-pregnancy weight is a determinant. Identify three work practice guidelines that are protective of your health and the health of your fetus. <ul style="list-style-type: none"> • The answer varies depending on what you do and the identified workplace hazards. Examples are wearing respiratory or other protective equipment when doing a particular task, an ergonomic assessment, and medical surveillance. Speak with your company's safety and EH representative. 									
MAY - Hypertension: The Silent Killer												
<p>Industrial Hygiene 29 CFR 1960 establishes the basic program elements for Federal employee OS&H program and calls for extensive coordination between the many partnering disciplines.</p>	<p>The Environmental Health component of NASA OH includes Health Physics, Industrial Hygiene (IH), and Food Services Sanitation.</p>	<p>Industrial hygienists are out among the employees in their work place evaluating the hazards of the environment or work process including chemical, physical, and biological. Key components of a successful IH Program are proactive in nature. They are:</p> <ul style="list-style-type: none"> • Anticipation and recognition of the hazard or stressor, • Evaluation, and • Control for the hazard through reduction or elimination. 	<ol style="list-style-type: none"> Does salt intake affect blood pressure? <ul style="list-style-type: none"> • Yes, excessive salt intake can raise BP. Our daily diet tends to contain adequate sodium. Anytime we sprinkle the salt shaker or resort to canned or processed foods we are taking in the added sodium we don't need. The chemical term for salt is sodium chloride and it is the sodium content that we are referring to when discussing salt in diet. The USDA Recommended Daily Allowance (RDA) for sodium/salt intake: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Condition</th> <th>USDA RDA Sodium (milligrams)</th> <th>USDA RDA Salt (grams)</th> </tr> </thead> <tbody> <tr> <td>Healthy adult</td> <td>2,400</td> <td>6</td> </tr> <tr> <td>Hypertensive</td> <td>1,500</td> <td>3.7</td> </tr> </tbody> </table> <ul style="list-style-type: none"> • In the US, data shows that adults ingest 7-10 grams of salt per day, which is over the recommended level of 3.7- 6 grams. What are the five Sudden Stroke Warning Signs? <ul style="list-style-type: none"> • Sudden numbness or weakness on one side of the body or face. • Sudden confusion, trouble speaking or understanding. • Sudden trouble seeing in one or both eyes. • Sudden trouble walking, dizziness, loss of balance or coordination. • Sudden, severe headache with no known cause. Can you name a few industrial hygiene programs and/or activities at your center? <ul style="list-style-type: none"> • Ergonomics • Hearing Conservation Program • Confined Space • Indoor Air Quality and Ventilation • Personal Protective Equipment (PPE) Program • Toxicology 	Condition	USDA RDA Sodium (milligrams)	USDA RDA Salt (grams)	Healthy adult	2,400	6	Hypertensive	1,500	3.7
Condition	USDA RDA Sodium (milligrams)	USDA RDA Salt (grams)										
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JUNE - Aggressive Driving vs. Road Rage												
<p>Motor Vehicle Safety Many public health laws on the Federal, state, and local level support motor vehicle safety. These include but are not limited to performance and crash standards for cars, standards for roads and highways, seat belt laws, child safety seats, speed limit laws, and drivers license regulations.</p>	<p>Transportation and Traffic Safety are not part of NASA OH program requirements. However, NASA has specific traffic safety requirements as set forth in NPR 6200.1C and 8715.3.</p>	<p>NASA OH clinic services include the provision of physical examinations for NASA related occupations requiring commercial driver's license certification. Employees are encouraged to familiarize themselves with NASA NPRs if driving personal or government owned vehicles while doing business for NASA.</p>	<ol style="list-style-type: none"> How can unsafe driving practices be reduced or stopped? <ul style="list-style-type: none"> • The National Highway Traffic Safety Administration (NHTSA) sponsored a national survey of 6,000 drivers over the age of sixteen on the enforcement of unsafe driving. The survey result showed that the public supports increased enforcement including cameras, increasing sanctions, increasing intervention by vehicle occupants, and increasing public awareness of risks. Is it true that the posted speed limit applies to the slow lanes only? <ul style="list-style-type: none"> • The posted speed limit is a law that applies to all traffic lanes. Technically speaking, there is no fast or slow lane. In at least 21 states, slower traffic is expected to keep right. Emergency vehicles are permitted to exceed the posted speed limit but only when their lights and sirens are on. 									

Implementation of Public Health Principles Through Worksite Occupational Health Services at NASA

Public Health Laws	NASA Occupational Health Program	NASA Occupational Health Services	Questions/Activities/Answers																																
JULY - Radiation in Everyday Life																																			
<p>Health Physics 29 CFR 1910 supported by 10 CFR 20 (Standards for Protection Against Radiation) establish the basic elements of a radiation safety program and radiation exposure limits.</p>	<p>The health of NASA's workforce is maintained by eliminating or minimizing occupational exposures to ionizing and non-ionizing radiation. This is accomplished by establishing firm management controls based on sound principles, safe operating procedures, and a comprehensive surveillance and monitoring program.</p>	<p>Essential components of a successful Health Physics Program are proactive in nature. They include but are not limited to the following:</p> <ul style="list-style-type: none"> Management including authorization and permitting, appointment of a Radiation Safety Officer (RSO), and creation of a radiation safety committee. Measurements including monitoring and instrument calibration. Recordkeeping including radioactive material and device inventories and waste management. Training and Information including radiation safety manual and education of workers and public. Enforcement including internal annual program reviews and regulatory inspection. 	<ol style="list-style-type: none"> Ultraviolet (UV) rays are non-ionizing radiation. Name two sources of UV rays and appropriate measures against excessive exposure. <ul style="list-style-type: none"> The sources of UV radiation can be natural sunlight or indoor artificial rays. Excessive UV light is reflected off sand, water, or pavement and damages the eyes leading to cataracts, lesions, and tumors. Wearing proper eye protection at an early age is essential. So is wearing adequate amounts and types of sun-block lotion and reapplying it frequently. Indoor tanning beds are another source of UV radiation exposure sometimes producing UV many times higher than the sun. Wearing properly designed goggles is essential as well as limiting exposure time. Radioactivity and x-rays are ionizing radiation. Name two occupational illnesses that soon surfaced after their discovery. <ul style="list-style-type: none"> Radioactivity and x-rays were discovered in the 1890s. Unfortunately, due to poor understanding of the nature of radiation and the lack of personal protective equipment (PPE) such as shields, occupational hazards became apparent shortly after, such as skin cancer and leukemia in scientists and physicians. Another example are the women radium dial painters and cases of bone cancer. They ingested radium because they wet their brushes on their tongues to get a good "point" for painting radium on watch dials. Name three health physics activities or programs at your worksite. <ul style="list-style-type: none"> Nuclear power source for space craft Deep space communication Diagnostic medicine x-ray at the onsite OH clinics 																																
AUGUST - Organ Donation																																			
<p>Organ and Tissue Donation In 1984, Public Law 98-507, the National Organ Transplant Act (NOTA), established the framework for an organ procurement and transplant network within the U.S. including government oversight. Since then there have been many other Federal, state, and local laws relevant in certain situations such as the Universal Anatomical Gift Act (UAGA), Organ Donor Leave Act, 42 CFR Part 121, and Organ Donation Recovery Improvement Act (ODRIA).</p>	<p>Most religions support organ and tissue donation as a charitable act of love and giving. NASA, in recognition of and with respect for such diversity of beliefs, facilitates blood drives at its Centers. Blood drives are not part of the Agency's OH program requirements.</p>	<p>Consulting is an important part of NASA OH services. All NASA OH disciplines offer consulting services as a means of outreach, education, and awareness. Employees may consult with the clinic healthcare providers related to blood donation or other health questions.</p>	<ol style="list-style-type: none"> To receive a perfect match, does the patient need an organ donated from his/her own racial and ethnic group? <ul style="list-style-type: none"> It is possible to find a good match in ethnicities other than the patient's own. Eighty percent of U.S. donors are Caucasian but nearly half of those on the organ transplant waiting list are minority. What preventive measures are recommended to promote health and/or to reduce the harm already done by an existing medical condition? Can NASA Clinics help in anyway? To best answer this question we must understand the three steps of prevention: <ul style="list-style-type: none"> Primary refers to activities that decrease the likelihood of an event occurring in the first place such as eating 5-9 servings of fruits and vegetables a day, maintaining an ideal weight, adding flouride to water, or iodine to salt. Secondary refers to early detection and treatment and includes activities that reduce the likelihood the event will continue or reoccur such as getting a pap smear or completing an annual physical exam. Tertiary refers to activities that lessen the harm already done by the event such as receiving rehabilitation after a stroke. Receiving regular checkups, screening tests, and immunizations are all important preventive measures but all of them are part of secondary prevention. They don't prevent the occurrence of a disease, they merely detect it in an early stage or prevent it from expanding. If you have high risk factors, for example a disease has been running in your family for many generations, you should consider screening at a younger age or more often. You may also need to have specific health screenings while others don't. NASA worksite OH Clinics offer medical examinations, screenings, and counseling as part of their services. Consult with your respective center clinic about what is right for you. 																																
SEPTEMBER - Nutrition Myths																																			
<p>Concerns with quality and safety of foods and medicines have been an issue since the beginning of civilization. In 1927, the Bureau of Chemistry was reorganized into two separate entities. Regulatory functions were located in the Food, Drug, and Insecticide Administration. Non-regulatory research was located in the Bureau of Chemistry and Soils. In 1930, McNary-Mapes Amendment authorized standards of quality and fill-of-container for canned food, excluding meat and milk products. The name of the Food, Drug, and Insecticide Administration was shortened to Food and Drug Administration (FDA) under an agricultural appropriations act.</p>	<p>Food sanitation is a constituent element of NASA OH Environmental Health services which also includes industrial hygiene and health physics. Food sanitation means protecting food from contamination by establishing processes and control measures in temperature control, hygiene and personal practices, proper food handling, and manufacturing controls.</p>	<p>NASA OH food sanitation mitigates potential food safety hazards by establishing a primary prevention approach. Food safety is accomplished through the implementation of Hazard Analysis Critical Control Point (HACCP) principles, risk-based inspections and controls, and FDA-recommended program standards.</p>	<ul style="list-style-type: none"> Educate yourself about cholesterol by taking this brief quiz: http://nhlbisupport.com/chd1/how.htm Educate yourself about food safety by taking this brief quiz: http://www.fsis.usda.gov/factsheets/Food_Safety_Quiz/index.asp 																																
OCTOBER - Mental Health																																			
<p>Drug-Free Workplace Legislation 5 U.S.C. 7361-7362 requires Federal Agencies to develop appropriate prevention, treatment, and rehabilitation services for drug abuse, alcohol abuse, and alcoholism among employees. Executive Order 12564, September 15, 1986, establishes the goal of a Drug-Free Federal Workplace including education, training, drug testing, and Employee Assistance Programs (EAPs). 5 U.S.C. 7901, Health Service Programs, authorizes expansion of agency EAPs to address other employee issues such as family, financial, and marital problems.</p>	<p>NASA's drug-free workplace is under the direction of the NASA Office of Human Capital Management (OHCM). OCHMO works collaboratively with OHCM in the implementation of this policy. NPR 3792 details NASA's comprehensive drug free policy and prevention program. The requirement for NASA contractors to institute and maintain a drug-free workplace program is detailed in 48 CFR 1852.223.</p>	<p>NASA EAP providers play significant roles in NASA's drug-free workplace. EAP services are short-term, private, confidential and free of charge.</p>	<ol style="list-style-type: none"> Have you been experiencing any of these feelings or exhibiting any of these behaviors in the past few weeks? <ul style="list-style-type: none"> Feeling sad or empty Drinking more than planned Alternating between feelings of high and low Constantly worrying and feeling anxious Deeply troubled by a traumatic event If you answered yes to one or more of these questions, consider contacting your Center or Corporate Employee Assistance provider. 																																
NOVEMBER - The Air We Breathe																																			
<p>Smoke Free workplace Executive Order 13058 became effective on August 09, 1997 prohibiting the smoking of tobacco products in all interior spaces owned, rented, or leased by the executive branch of the Federal Government, as well as in any outdoor areas in front of air intake ducts. GSA 41 CFR Part 101-39.300(d), prohibits smoking in Government-Owned-Vehicles.</p>	<p>The head of Agencies may establish more protective policies on smoking in their Federal workplace. As a general rule in NASA, smoking is restricted at doorways and in courtyards. Although the smoke free workplace policy is not under the auspices of OCHMO, OH services include smoking cessation programs.</p>	<p>There is no Agency wide approach to smoking cessation. Every smoking cessation offering is originated at the Center level as a collaborative effort between the Center Clinic and the EAP. Tobacco dependence is a chronic condition that often requires repeated interventions that are multi-modal in nature. Because tobacco use is one of the leading causes of preventable morbidity and mortality in the U.S. NASA OH pays particular attention to this issue.</p>	<ol style="list-style-type: none"> What is the leading cause of cancer death in the United States? <ul style="list-style-type: none"> Lung cancer is the leading cause of cancer deaths in the United States, among both men and women. Lung cancer claims more lives each year than colon, prostate, ovarian, lymph and breast cancers combined. People who smoke have the greatest risk of lung cancer. If you quit smoking, even after smoking for many years, you can significantly reduce your chances of developing lung cancer. Risk factors for lung cancer include: <ul style="list-style-type: none"> Smoking and exposure to secondhand smoke. Exposure to radon gas. Radon is produced by the natural breakdown of uranium in soil, rock, and water that eventually becomes part of the air you breathe. Unsafe levels of radon can accumulate in any building, including homes. Radon testing can determine whether levels are safe. Exposure to asbestos and other chemicals. Workplace exposure to asbestos and other substances known to cause cancer — such as arsenic, chromium, nickel, and tar — can also increase your risk of developing lung cancer, especially if you're a smoker. Family history of lung cancer. People with a parent, sibling or other first-degree relative with lung cancer have an increased risk of the disease. Certain lung diseases. People with certain lung diseases, such as chronic obstructive pulmonary disease, may have an increased risk of lung cancer. 																																
DECEMBER - Communicable Diseases and Hand Hygiene																																			
<p>Personal Protective Equipment (PPE) 29 CFR 1910.132 addresses PPE as an added protection for preservation of life and limb. These include protection for the eyes, face, head, and extremities through proper use of protective clothing, respiratory devices, and protective shields and barriers.</p>	<p>NASA employs a systematic and comprehensive approach to exposure assessment in order to anticipate, recognize, evaluate, and control health hazards in the workplace per NPR 1800.1C.</p>	<p>The hierarchy of controls in IH requires removal of workplace hazards through engineering or administrative controls. PPE is used as a last measure of control. Exposures can occur through absorption, inhalation, or physical contact. Workplace safety practices can easily be applied to the home environment and all life activities.</p>	<ol style="list-style-type: none"> Name three workplace and three day-to-day hazards as well as their associated control measures including PPE. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Workplace Hazard</th> <th>Engineering Controls</th> <th>Administrative Controls</th> <th>PPE</th> </tr> </thead> <tbody> <tr> <td>Hazardous Noise</td> <td>Equipment engineered to produce less noise</td> <td>Modified work shifts to control exposure time</td> <td>Ear plugs and/or ear muffs</td> </tr> <tr> <td>Chemical</td> <td>Less or nontoxic alternative</td> <td>Education programs</td> <td>Respirators, gloves, goggles</td> </tr> <tr> <td>Physical</td> <td>Robotics or computer operated machines</td> <td>Proper manual technique training</td> <td>Gloves, steel-toed boots, hard hats</td> </tr> <tr> <th>Day-to-Day Hazard</th> <th>Engineering Controls</th> <th>Administrative Controls</th> <th>PPE</th> </tr> <tr> <td>Traffic Accidents</td> <td>Automobiles with safety equipment</td> <td>Obey traffic laws and avoid distractions</td> <td>Seatbelts</td> </tr> <tr> <td>Exposure to UV Radiation</td> <td>Shielding installed</td> <td>Limited sun exposure</td> <td>Sunscreen, eye glasses, hats</td> </tr> <tr> <td>Kitchen Fires</td> <td>Stoves and ovens with shut off switches and heat sensors</td> <td>Safe cooking practices</td> <td>Fire extinguisher, kitchen safety tools</td> </tr> </tbody> </table> 	Workplace Hazard	Engineering Controls	Administrative Controls	PPE	Hazardous Noise	Equipment engineered to produce less noise	Modified work shifts to control exposure time	Ear plugs and/or ear muffs	Chemical	Less or nontoxic alternative	Education programs	Respirators, gloves, goggles	Physical	Robotics or computer operated machines	Proper manual technique training	Gloves, steel-toed boots, hard hats	Day-to-Day Hazard	Engineering Controls	Administrative Controls	PPE	Traffic Accidents	Automobiles with safety equipment	Obey traffic laws and avoid distractions	Seatbelts	Exposure to UV Radiation	Shielding installed	Limited sun exposure	Sunscreen, eye glasses, hats	Kitchen Fires	Stoves and ovens with shut off switches and heat sensors	Safe cooking practices	Fire extinguisher, kitchen safety tools
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Moon Landing



JULY • 2011

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>JUNE</p> <p>S M T W T F S</p> <p>1 2 3 4</p> <p>5 6 7 8 9 10 11</p> <p>12 13 14 15 16 17 18</p> <p>19 20 21 22 23 24 25</p> <p>26 27 28 29 30</p>	<p>AUGUST</p> <p>S M T W T F S</p> <p>1 2 3 4 5 6</p> <p>7 8 9 10 11 12 13</p> <p>14 15 16 17 18 19 20</p> <p>21 22 23 24 25 26 27</p> <p>28 29 30 31</p>	<p>UV Safety Month</p> <p>Eye Injury Prevention Month</p>			1 ●	2
3	4 Independence Day (Federal holiday)	5	6	7	8	9 ○
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31						

Radiation in Everyday Life

www.epa.gov

Depending on the dose received, radiation can be beneficial or harmful. There are two types of radiation:

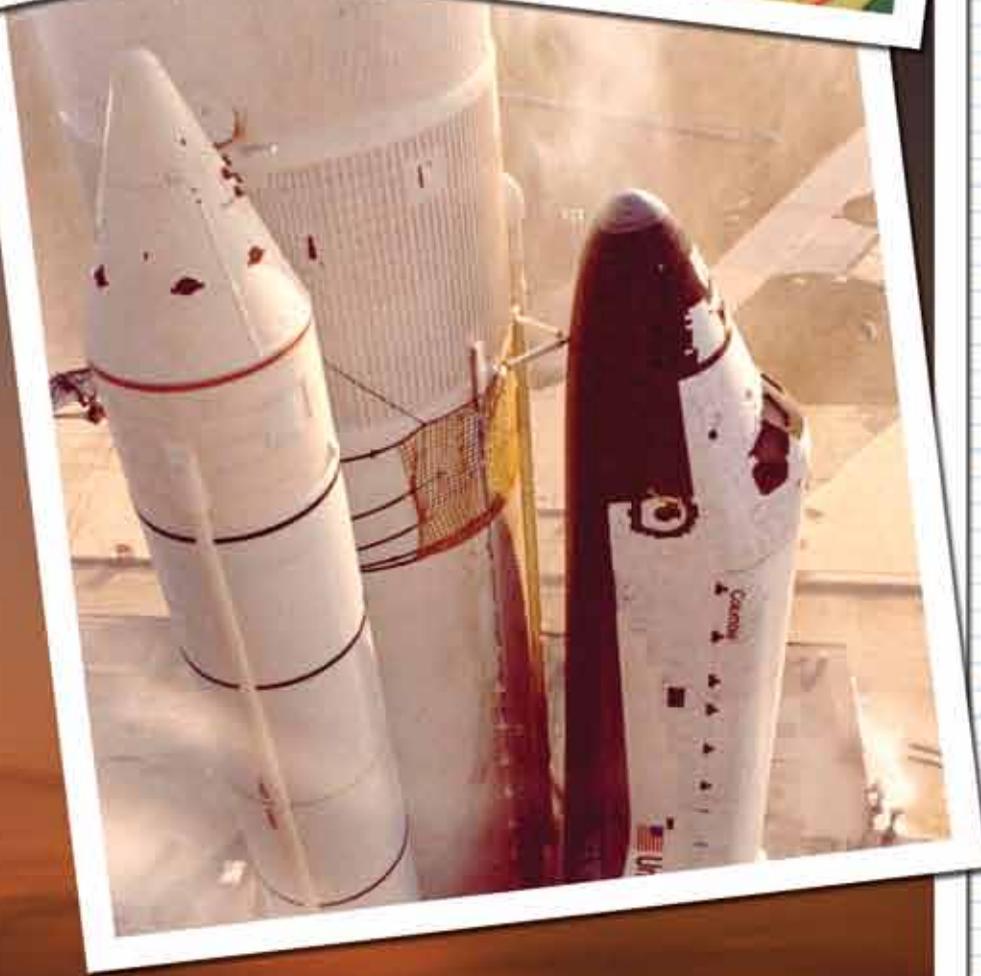
1. Non-ionizing radiation doesn't change the structure or function at the cellular level.
2. Ionizing radiation has enough energy to change the structure and functionality at the cellular level.

The principle of "as low as reasonably achievable (ALARA)" is used in controlling exposures to ionizing radiation. Since ALARA is the standard, everyone should try to keep exposures to ionizing radiation to a minimum.

Question/Activity:

1. Ultraviolet (UV) rays are non-ionizing radiation. Name two sources of UV rays and appropriate measures against excessive exposure.
2. Radioactivity and x-rays are ionizing radiation. Name two occupational illnesses that soon surfaced after their discovery.
3. Name three health physics activities or programs at your worksite.

Space Shuttle



AUGUST • 2011

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																												
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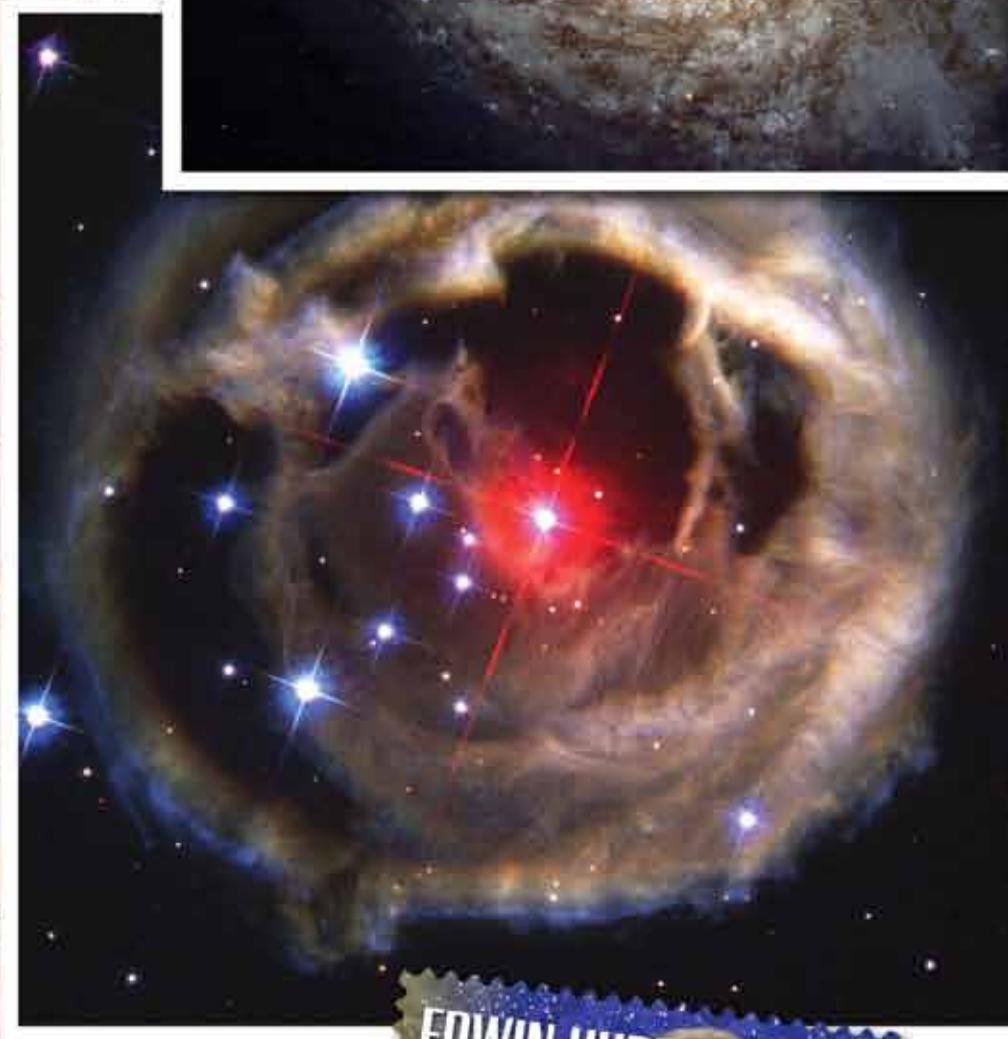
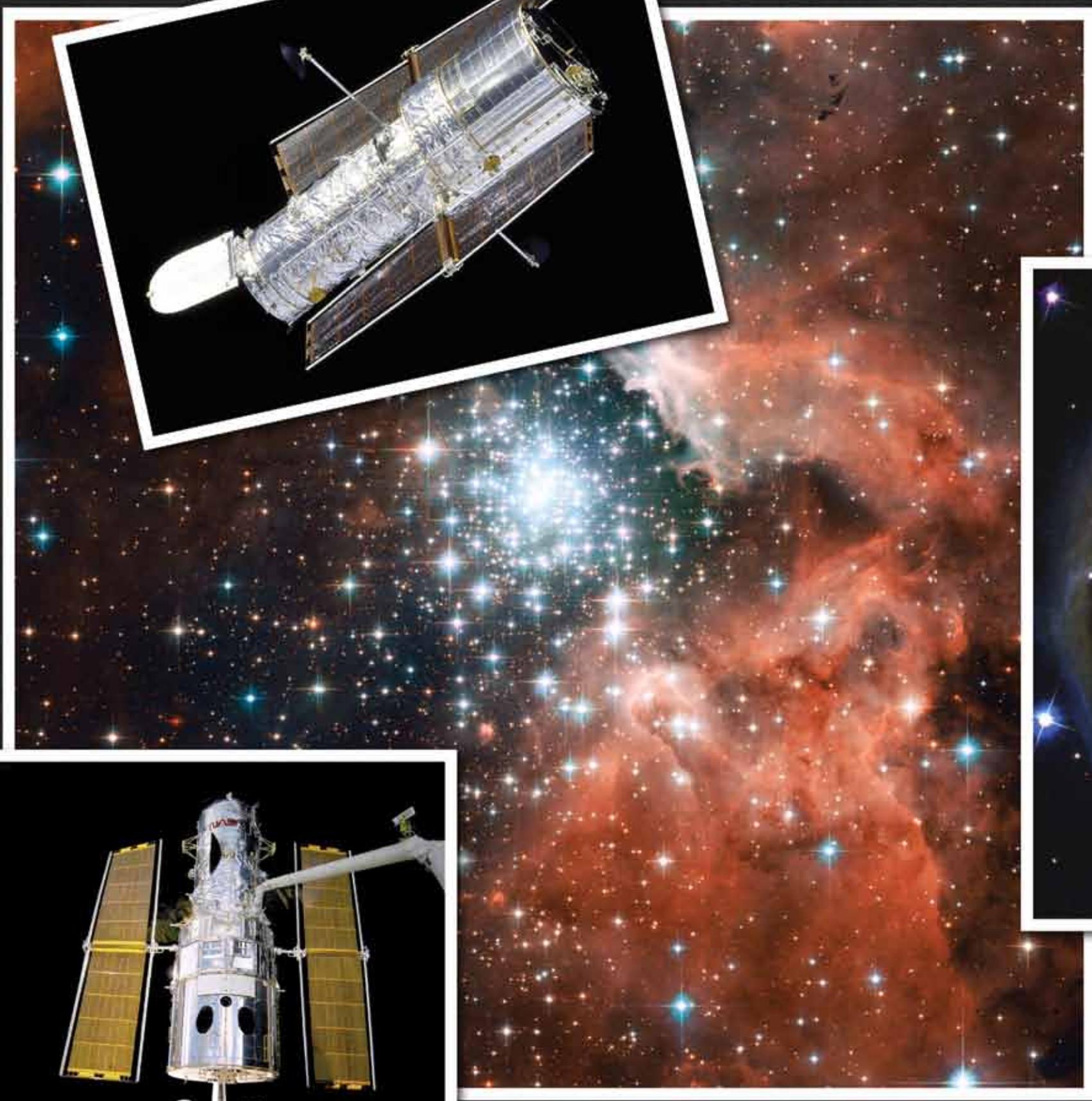
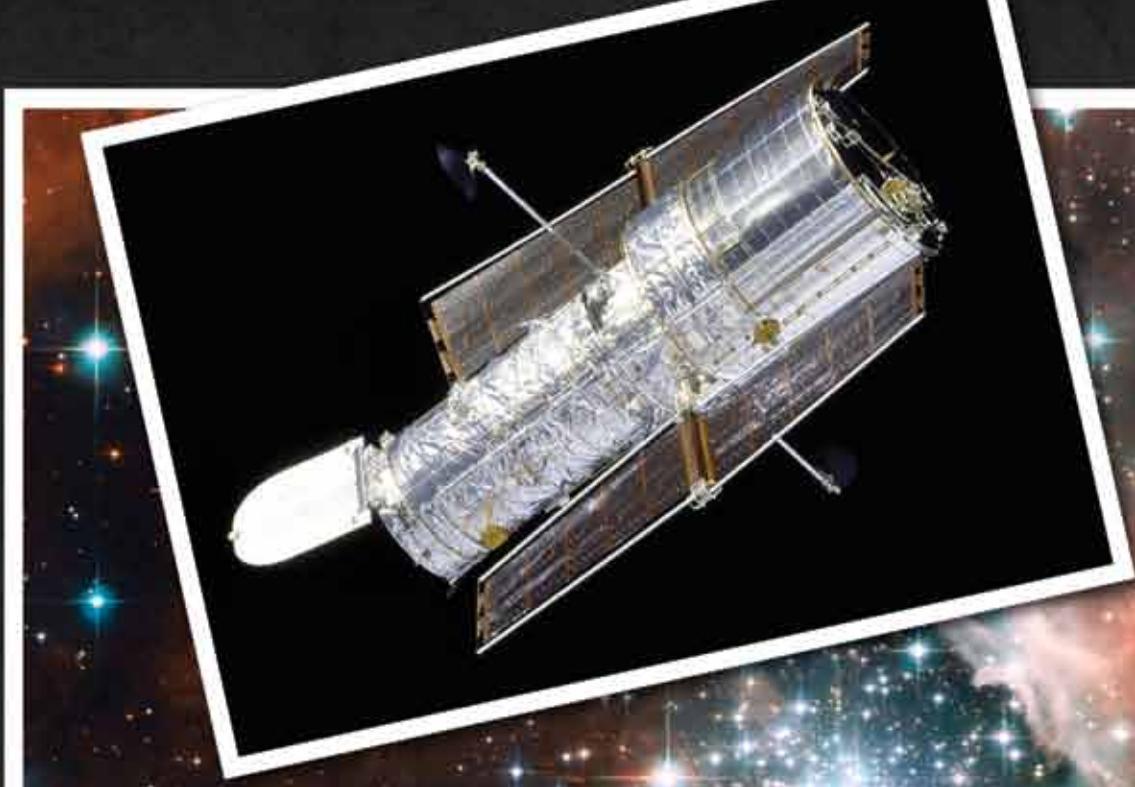
Organ Donation

It is important to dispel myths associated with organ donation and transplantation. More than 80,000 people in the U.S. are on a waiting list for organ transplant. Many health conditions leading to a transplant are preventable. Diabetes, chronic hepatitis, and cirrhosis of the liver are poignant examples. Using preventive measures reduces the overall need for transplantation and other curative and costly treatments.

www.minorityhealth.hhs.gov www.organdonor.gov

Question/Activity:

1. To receive a perfect match, does the patient need an organ donated from his/her own racial and ethnic group?
2. What preventive measures are recommended to promote health and/or to reduce the harm already done by an existing medical condition? Can NASA Clinics help in any way?



Hubble Space Telescope

SEPTEMBER • 2011

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4	5 Labor Day (Federal holiday)	6	7	8	9	10
11 Patriot Day	12	13	14	15	16	17
18	19	20	21	22	23 Autumn Begins	24
25	26	27	28	29 Rosh Hashanah	30	

Nutrition Myths

www.hhs.gov www.calorieking.com www.nutritiondata.com

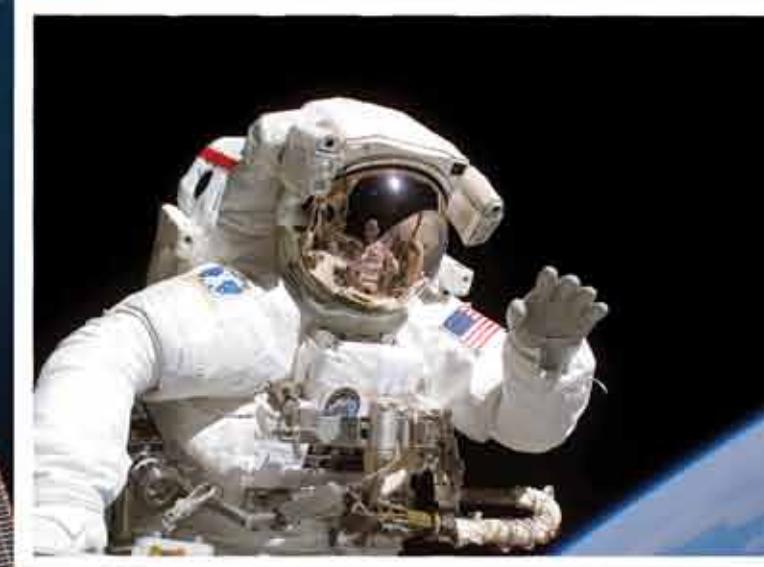
Red meat is bad for health. Some studies have associated red meat with increased risk of certain diseases such as heart disease. The association is due to the saturated fat content. Poultry, fish, and turkey are naturally lower in saturated fat; however, a lean cut of beef has less saturated fat than the same serving size of chicken with skin or one that is deep fried.

Brown sugar is better than white sugar. Brown sugar is slightly higher in certain minerals such as calcium and potassium but the difference is not significantly higher unless you eat huge amounts of brown sugar every day. The color comes from the added molasses.

Brown eggs are more nutritious than white eggs. The white and brown colored eggs are alike in nutrition content.

Question/Activity:

1. Educate yourself about cholesterol by taking this brief quiz: <http://nhl-bisupport.com/chd1/how.htm>
2. Educate yourself about food safety by taking this brief quiz: http://www.fsis.usda.gov/factsheets/Food_Safety_Quiz/index.asp



International
Space Station

OCTOBER • 2011

Launch a HealthierYou by taking the Mayo Clinic Health Assessment: www.nasahealthieryou.com

Read more and complete the calendar evaluation: www.ohp.nasa.gov/healthcalendar



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
SEPTEMBER S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	NOVEMBER S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	National Depression Education and Awareness Month National Drug-Free Work Week					1
2	3	4	5	6	7	8	
						Yom Kippur	
9	10	11	12	13	14	15	
	Columbus Day Observed (Federal holiday)						
16	17	18	19	20	21	22	
National Boss' Day							
23	24	25	26	27	28	29	
	Halloween						
30	31						

Mental Health

One in four persons is diagnosed with a mental health disorder ranging from mild to severe. Mental illness affects one's thoughts, physical well-being, feelings, behaviors, judgments, and self-awareness, but not character. With cancer or heart disease, patients willfully seek treatment. In mental illness, such as depression, judgment is also affected, making the person resistant to seeking treatment or staying in an existing program of treatment. This creates a vicious cycle for patients and their families in managing the condition.

www.mayoclinic.com

Question/Activity:

- Have you been experiencing any of these feelings or exhibiting any of these behaviors in the past few weeks?
 - Feeling sad or empty,
 - Drinking more than planned,
 - Alternating between feelings of high and low,
 - Constantly worrying and feeling anxious,
 - Deeply troubled by a traumatic event.

If you answered yes to one or more of these questions, consider contacting your Center or Corporate Employee Assistance provider.



Experimental
Craft

NOVEMBER • 2011

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
OCTOBER S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	DECEMBER S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1	2	3	4	5
6 Daylight Savings Time Ends, Eid Al Adha	7	8 Election Day	9	10	11 Veterans Day (Federal holiday)	12
13	14	15	16	17	18	19
20	21	22	23	24 Thanksgiving Day (Federal holiday)	25	26
27	28	29	30	<i>Lung Cancer Awareness Month</i> <i>The Great American Smokeout: Nov 17</i>		

The Air We Breathe

First-hand smoke is inhaled directly by the smoker. People who smoke have the greatest risk of lung cancer.

Second-hand smoke is exhaled by the smoker and inhaled by others. It increases the number and severity of respiratory attacks such as asthma in children as well as respiratory problems in non-smokers.

Third-hand smoke is the nicotine residue from second-hand smoke that absorbs onto indoor surfaces, such as walls, drapes, and furniture and reacts with other chemicals. Scientists are studying the potentially negative effects of third-hand smoke on health.

Question/Activity:

1. What is the leading cause of cancer death in the United States?

For answers or guidance refer to the calendar insert and www.ohp.nasa.gov/healthcalendar.



Into the Future...

DECEMBER • 2011

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www.nasahealthieryou.com

Read more and complete the calendar evaluation:
www.ohp.nasa.gov/healthcalendar



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
NOVEMBER S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	JANUARY 2012 S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	National Hand Washing Awareness Week: 4-10		1	2 	3
4	5	6	7 Pearl Harbor Remembrance Day	8	9	10 
11	12	13	14	15	16	17
18 	19	20	21 Hanukkah Winter Begins	22	23	24 
25 Christmas Day	26 Christmas Day Observed (Federal holiday) Kwanzaa Begins	27	28	29	30	31

Communicable Diseases and Hand Hygiene

Control of infectious diseases has resulted from clean water, improved sanitation, discovery of antimicrobial therapies, and personal protective equipment (PPE) such as gloves, face masks, and N95 respirators. The most effective measure of controlling the spread of infection is hand washing. Poor adherence to hand hygiene results from lack of time, ease of access to or lack of supplies, lack of knowledge or education about cross-contamination, and skin irritation from antibacterial soap or alcohol-based rubs. Hand hygiene is required regardless of whether gloves are used or changed.

www.cdc.gov

Question/Activity:

1. Name three workplace and three day-to-day hazards and their associated control measures including PPEs.

For answers or guidance refer to the calendar insert and www.ohp.nasa.gov/healthcalendar.

Image Gallery Historical Facts

Just as with any family, NASA has its own history of triumphs and losses. But unlike other families, NASA's story belongs to this Nation and is shared, almost instantly at times, through images, and the spoken and written word.

The images selected for this year's calendar depict a historical timeline of events while telling the story of the Agency's adventures, experiments, travels and triumphs by recognizing every employee and person who has given selflessly to it from inception to the present.

January

Early Program, 1950-1958

With the notable exception of Dr. Robert H. Goddard's pioneering work with liquid propellant rockets in the 1920s and 1930s, America's interest in rocketry and space exploration prior to World War II was restricted to amateur rocket clubs and the fertile outpourings of science fiction writers. In 1946, the U.S. Army began testing V-2s which were developed by German scientists and technicians and headed by Dr. Wernher von Braun. An Army team from White Sands, NM, conducted the first rocket launch from Cape Canaveral, FL, on July 24, 1950. The rocket was called Bumper 8.

By the mid-1950s, rocket technology in the United States had reached the stage where serious consideration was being given to proposals to launch Earth satellites. The Army team, directed by Dr. Kurt H. Debus, launched the Explorer 1 satellite into orbit on January 31, 1958. America was in space. Explorer 1, built for the Army by the Jet Propulsion Laboratory of the California Institute of Technology, made up in quality what it lacked in size.

NASA was established on October 1, 1958, absorbing some 8,000 personnel and the laboratories of the 43-year-old National Advisory Committee for Aeronautics. Shepard's flight was the Nation's initial manned space flight effort but even more ambitious undertakings were planned by the United States. In May 1961, President John F. Kennedy fired the public's imagination by announcing that the country would fly men to the moon and back within the decade.

The challenge elicited congressional support for a program which required rockets far more powerful than any then available, and spacecraft designed to protect men from the hostile environment of space. The program was Apollo, and the vehicle that would launch the Apollo spacecraft and its three-man crew to the moon was the Saturn V.

February

The Mercury Project, 1958-1963

Project Mercury was the United States' first man-in-space program. The objectives of the program, which made six manned flights from 1961 to 1963, were specific:

- To orbit a manned spacecraft around Earth.
- To investigate man's ability to function in space.
- To recover both man and spacecraft safely.

March

The Gemini Program, 1962-1966

The second U.S. manned space program was announced in January 1962. Its two-man crew gave it its name, Gemini. The program launched 12 flights, including two unmanned flight tests of the equipment. Like the Mercury program, its major objectives were clear-cut:

- To subject man and equipment to spaceflight up to two weeks in duration.
- To rendezvous and dock with orbiting vehicles and to maneuver the docked combination by using the target vehicle's propulsion system.
- To perfect methods of entering the atmosphere and landing at a preselected point on land. Its goals were also met, with the exception of a land landing, which was cancelled in 1964.

The first true mission patch was designed at the request of the Gemini 5 crew, Command Pilot L. Gordon Cooper Jr., and Pilot Charles Conrad Jr., as a means of personalizing their flight since naming the spacecraft had been disallowed after Gemini 3. The design included a covered wagon, symbolizing the pioneer spirit of space exploration. Designs for patches have come from many sources, most frequently from ideas and even sketches created by the crew, their families, and friends. All manned missions since Gemini 5 have had mission patches designed by the crew, and a number of robotic missions over the years have also followed the practice. In the early days of the program, patches were sketched and painted by hand. Now the design is done on computers.

The idea of a mission or crew patch came from the military, particularly the tradition of squadron patches used in air units of the various services, as most of the early astronauts were active or former military aviators.

April

Saturn, 1961-1975

The Saturn rocket was involved in both manned and unmanned flights. The manned missions included the Apollo launches on Saturn V, Skylab, and the Apollo-Soyuz Test Project. Early years of Saturn launched from Launch Complexes 37 and 34. In the later years Saturn launched from Launch Complex 39.

May

Apollo 1968-1972

Project Apollo's goals went beyond landing Americans on the moon and returning them safely to Earth. It was intended to:

- Establish the technology to meet other National interests in space.
- Achieve preeminence in space for the United States.
- Carry out a program of scientific exploration of the moon.
- Develop human capability to work in the lunar environment.

Apollo was a three-part spacecraft and the boosters for the program were the Saturn IB for Earth orbit flights and the Saturn V for lunar flights.

June

Skylab Mission, 1973-1974

Skylab was America's first experimental space station. The Program's objectives were to prove that humans could live and work in space for extended periods, and to expand our knowledge of solar astronomy well beyond Earth-based observations. SkyLab was successful in all respects despite early mechanical difficulties. Three, three-man crews occupied the Skylab workshop for a total of 171 days and 13 hours. The empty Skylab spacecraft returned to Earth on July 11, 1979, scattering debris over the Indian Ocean and the sparsely settled region of Western Australia.

July

Moon Landing, 1969-1972

Apollo 11, atop a Saturn V rocket, launched toward the moon on July 16, 1969 at 9:32 a.m. EDT, from Launch Complex 39 carrying Commander Neil A. Armstrong, Lunar Module Pilot Edwin "Buzz" E. Aldrin, Jr., and Command Module Pilot Michael Collins. Apollo 11 was in lunar orbit for 8 days, 3 hours, 18 minutes, and 35 seconds, with a splashdown on July 24, 1969. Lunar landing occurred July 20, at 4:17 p.m. EDT, with the first step on the moon at 10:56:15 p.m. EDT. "Houston, tranquility base here. The eagle has landed."

The last mission to the moon was Apollo 17, which launched on December 7, 1972 with a splashdown on December 19, 1972. "We came in peace for all mankind." Apollo 15 carried the first lunar rover.

August

The Space Shuttle, 1981-Present

On April 12, 1981, space shuttle Columbia lifted off from Kennedy Space Center, FL, at 6 a.m. CST (12:00 GMT) to begin the first shuttle mission, STS-1. The primary mission objectives for STS-1 were to accomplish a safe ascent into orbit, check out all the systems on the space shuttle and to return to Earth for a safe landing. All of these objectives were met successfully. Over the years, the external fuel tank, or ET has evolved to increase the overall efficiency of flight and processing. The first two ETs were painted white and only used on STS-1 and STS-2. NASA ceased painting the external tanks beginning with STS-3, leaving the rust-colored spray-on insulation bare, saving approximately 272 kg or 600 lbs of weight.

September

The Hubble Space Telescope, 1990-present

Space shuttle Discovery's mission STS-31 launched on April 24, 1990, at 8:33:51 a.m. EDT. The mission featured the deployment of the Hubble Space Telescope, the first of NASA's Great Observatories to reach orbit. Several servicing missions have followed since its deployment in 1990. Hubble has surpassed its initial 20-year lifespan. The observatory has and will continue to benefit from technological advances. The Hubble Space Telescope is the first observatory designed for extensive maintenance and refurbishment in orbit. Features such as handrails and foot restraints are built into the telescope to help astronauts perform servicing tasks in the shuttle cargo bay as they orbit Earth at 17,500 mph.

October

The International Space Station, 1998-present

The first space shuttle mission dedicated to the assembly of the International Space Station was launched from Pad 39A on December 4, 1998, at 3:36 a.m. EST. During the mission, the STS-88

crew joined the 12.8-ton Unity connecting module to the Zarya control module already on orbit. The International Space Station is an orbiting laboratory and construction site that synthesizes the scientific expertise of 16 nations to maintain a permanent human outpost in space. It floats 240 miles (390 kilometers) above Earth's surface and has hosted a rotating international crew since November 2000. The station has been under construction since November of 1998. In that year the first piece of its structure, the Zarya Control Module, was launched into orbit with a Russian Proton rocket.

November

The future holds great promise for further space exploration and commerce. This vision however requires overcoming significant challenges and continued development of the technology and concept flight vehicles. No challenge is too insurmountable for this Agency as we have a proven record. As with any great achievement, a strategic roadmap to test and prove the vehicles and systems will be needed.

December

NASA's mission is to pioneer the future in space exploration, scientific discovery and aeronautics research.

Sources

www.nasa.gov

www.science.nationalgeographic.com

References

All We Did Was Fly to the Moon by Dick Lattimer

Carrying the Fire by Michael Collins

<http://genedorr.com/patches/Intro.html>, for depictions of artwork for mission patches.

<http://io.jsc.nasa.gov/app/browse.cfm?cid=2755>, for high resolution versions of Shuttle patches as well as information on the design of the patches.

Spaceport Visioning, Concept Study, October 2002



Office of the Chief Health and Medical Officer

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