

Deployment Health & Family Readiness Library

Burning Trash and Human Waste Exposures

For Service Members and their Families

Important facts:

- Under most conditions, breathing smoke from burning trash and human waste does <u>not</u> result in any significant risk to short- or long-term health.
- Smoke exposure that doesn't interfere with the ability to breathe or require medical treatment may result in a temporary cough and redness/stinging of the eyes, but usually doesn't cause any lasting effects.
- Whenever possible, you should minimize prolonged breathing of smoke, and especially heavy smoke, (from outdoor sources) by moving upwind of the smoke or moving inside enclosed spaces.

How might I be exposed to burning trash or human waste?

While open burning of trash and human waste is the least preferred method of disposal, it may be necessary, because other options, such as trash hauling, incineration, sewage disposal and treatment, or use of a landfill are not readily available during deployment operations.

What are the health and safety concerns related to exposure to the smoke resulting from burning trash or human waste?

Fire-related injuries (burns) and the inhalation of heavy amounts of smoke (smoke inhalation, a medically diagnosed condition) can be serious. Smoke inhalation usually interferes with normal breathing. When this occurs, medical attention is usually required, including the administration of oxygen. Smoke inhalation that doesn't interfere with the ability to breathe or require medical treatment usually doesn't have any lasting ill effects.

Exposure to smoke can cause mild, temporary irritation resulting in all or some of the following conditions:

stinging eyesrunny nose

coughingshortness of breath

scratchy throatirritated sinusesheadaches

The use of highly flammable materials such as gasoline to ignite and burn waste poses an explosive or burn hazard to those in the vicinity. These highly flammable materials should

<u>not</u> be used for this purpose! JP-8 aviation fuel, however, is not as flammable, and can be used, but general precautions for its safe handling from a health, safety, and environmental standpoint must be followed. Find more health and safety information about smoke from burning trash and human waste in the Deployment Library's <u>Open Pit Burning</u> fact sheet.

Burning human waste in a "burnout" latrine (a type of field latrine where waste is collected in a metal bin or other reusable container, which is periodically emptied by burning) generally eliminates the potential for infection and disease. As long as someone is not breathing heavy amounts of the smoke, there are few, if any, health risks. However, unprotected skin, eye, and clothing contact with human waste (or other infectious wastes, such as medically-generated waste) could result in the accidental transmission of some disease-causing agents. Individuals disposing of human waste should be provided and wear appropriate protective clothing (gloves, coveralls, goggles, etc.) to prevent waste from contacting skin, eyes, mouth, nose, or clothing. They should also thoroughly wash their hands, any other contaminated skin, and their clothing following the disposal of human waste.

What substances are usually found in the smoke? Smoke from burning trash or human waste is usually made up of heated gases including carbon monoxide and dioxide, water vapor, and fine particulate matter and hydrocarbons.

Are there materials that should not be burned in an open pit because they pose an increased health or safety risk?

Yes, certain materials, if burned in an open pit with personnel in the vicinity, can pose an increased risk of illness or injury (e.g., if the material is toxic or explosive). They can also cause unacceptable environmental contamination. The following materials should be separated from other materials to be burned and alternate means of disposal identified:

automotive/marine batteries

compressed gas containersasbestos-containing materials

pesticides

explosives

automotive oils

- fuels and fluids

 electrical equipment such as transformers and capacitors,

(shingles, siding, insulation)

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- solvents
- paint thinners and strippers
- rubber tires
- preserved (treated) wood

televisions, radios, stereos, cameras, VCRs, computers, microwave ovens

How will I know if I am being harmed by toxic substances in smoke as a result of burning materials?

The health effects associated with the smoke from burning trash and human waste range from no effects at all (most common), to mild irritation of the eyes and respiratory tract (occasional), to potentially more serious effects, including severe smoke inhalation that could lead to chronic lung disorders (rare). The possibility of health problems due to smoke from burning trash or human waste will usually depend on the type and amount of material burned, the concentration and composition of the smoke, the length and frequency of exposure, and any individual pre–existing medical conditions or sensitivity to smoke. As long as heavy amounts of smoke are not breathed for prolonged periods, it usually does not present a significant health risk.

What can I or others do to prevent/reduce exposure to smoke from burning trash and human waste?

- Personnel involved in burning operations should be appropriately protected from the fire, heat, smoke and in the case of human waste, also from direct contact with human waste to prevent contact with germs that can cause illness or disease.
- Responsible persons should plan the burn to minimize impact to those who may be in the vicinity and downwind from the fire. When possible, burning operations should be located where prevailing winds blow the smoke away from people.
- Avoid inhaling heavy smoke and when out of doors, stay upwind from the smoke whenever possible.
- Consult medical personnel experienced in environmental health if you are concerned about the smoke you may breathe, and ask about measures you should take to prevent exposure.

- Individuals working in close proximity to fire and smoke should use appropriate personal protective equipment (e.g., goggles to protect eyes and insulated, fire retardant work gloves when handling hot or sharp materials). Use of fire-retardant protective clothing, including footwear and headgear, may also be needed.
- Living and working locations of personnel potentially affected by the smoke should be far enough away from burn operations so as to prevent routine exposure to smoke that either presents a health hazard or is a source of significant discomfort. Burn operations should be routinely located downwind from the largest concentrations of people.
- Personal can minimize smoke inhalation from outside sources by shutting windows, doors and closing tent flaps.

In most cases, civil engineers or supporting medical personnel (environmental health, industrial hygiene, or bioenvironmental) will ensure that hazardous materials are not being burned in a manner that poses a risk to personnel. If there is a possibility of harm due to exposure to the smoke, medical or command personnel will inform personnel and will take the necessary steps to further control exposures.

Will I need any health monitoring if I have been exposed to smoke?

Deployed personnel receive pre- and post-deployment medical screening. Health monitoring and medical follow-up is <u>not</u> necessary for routine exposure to smoke from burning trash and human waste. However, persistent smoke exposure or unusual conditions may require medical evaluation. If you have a question regarding a specific situation where you think you may have been exposed to heavy amounts of smoke or to toxic substances, you should consult a medical professional.

Where Do I Get More Information?

DoD Deployment Health Clinical Center (DHCC)

Phone: (866) 559-1627 http://www.pdhealth.mil/

U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)

Phone: (800) 222-9698

http://chppm-www.apgea.army.mil

DoD Force Health Protection and Readiness (FHP & R)

Phone: (800) 497-6261 http://fhp.osd.mil

Navy and Marine Corps Public Health Center (NEHC)

Phone: (757) 953-0700

http://www-nmcphc.med.navy.mil

USAF School of Aerospace Medicine

Phone: (888) 232-3764

Air Force Institute for Operational Health

