Fire Safety and Burn Prevention Knowledge and Practice Assessment

1. Most home fires start in the
   A. Bedroom  
   B. Chimney  
   C. Kitchen  
   D. Living room  
   **Answer C:** Most home fires start in the **kitchen**. The National Fire Protection Association reports that 1 out of every 3 home fires begin in the kitchen.

2. The leading causes of home fires include:
   1) Smoking materials  
   2) Cooking and heating equipment  
   3) Misuse of fire by children  
   4) Arson  
   5) Individual actions  
   **Answer D:** The leading causes of home fires include: **All of the above** (smoking materials, cooking and heating equipment, misuse of fire by children, arson and individual actions). About 85% (4 out of 5) deaths from fires occur in the home. Cooking-related fires are the most common cause of home fires, while smoking-related fires are the most common cause of fatal home fires. Surprisingly to some people, arson is also a leading cause of home fires in the United States.

3. Populations at high risk for fire and burn injuries and deaths include:
   A. Smokers and the people who live with them  
   B. Children  
   C. Older adults  
   D. People with disabilities  
   E. B and D  
   F. All of the above  
   **Answer F:** Populations at high risk for fire and burn injuries and deaths include: **All of the above** (smokers and the people who live with them, children, older adults, and people with disabilities). Disabilities (physical, emotional, and/or cognitive), use of alcohol or other substances including some medications, and age-related limitations also increase a person’s risk for fire and burn injuries and deaths. According to the United States Fire Administration (USFA), the relative risk of individuals dying in a fire compared to the general population is: children <5 years old are ~ 1.5 times as likely; adults >65 years old are 2 times more likely; and adults >85 years old are more than 4 times as likely.

4. Most residential fire deaths (at the scene) are due to:
   A. Thermal injury to the skin  
   B. Suffocation/asphyxiation or inhalation of poisonous gases  
   C. Associated trauma  
   D. A and C  
   E. None of the above  
   **Answer B:** Most residential fire deaths (at the scene) are due to **suffocation/asphyxiation or inhalation of poisonous gases**. As a general rule, people do not “burn to death” in residential fires. Many are already dead from the inhalation of super heated air and gases and toxic byproducts of incomplete combustion of the room furnishings before the fire contacts the skin. The rate of death from smoke inhalation is more than double that of cutaneous burn injury alone.
5. **Most fatal** home fires start in the
   A. Bedroom
   B. Chimney
   C. Kitchen
   D. Living room
   E. All of the above

   **Answer A:** Most fatal home fires start in the **bedroom**. Half of all home fire deaths result from incidents reported between 11:00 p.m. - 7:00 a.m. One-quarter (25%) of all home fire deaths were caused by fires that started in the bedroom.

6. **At a minimum, correct placement of smoke alarms in the home include:**
   A. In every sleeping area
   B. Outside each separate sleeping area
   C. On every level of the home including the basement
   D. At least 6-12 inches away from corners
   E. A, C and D
   F. All of the above

   **Answer F:** At a minimum, correct placement of smoke alarms in the home include: **All of the above** (in every sleeping area, outside each separate sleeping area, on every level of the home including the basement and at least 6-12 inches away from corners). Additional smoke alarms should be considered for basement stairwells and in all rooms where people smoke. For the best protection, interconnect all smoke alarms throughout the home and make sure they have battery back-up in case of power failure (i.e. when one alarm sounds, they all sound). Wireless, battery-operated interconnected smoke alarms are now available.

7. **The National Fire Protection Association (NFPA) recommends replacing the batteries in your smoke alarm (unless you have long-life / 10-year-batteries):**
   A. Every 6 months. Change your clocks change your batteries.
   B. Annually unless it chirps prior to that
   C. Only when it chirps
   D. Every time it alarms
   E. A and C

   **Answer B:** The NFPA recommends replacing the batteries in your smoke alarm (unless you have long-life batteries): **Annually unless it chirps prior to that.** The recommendation to “Change your clocks change your batteries” started 25 years ago by Energizer and the International Association of Fire Chiefs (IAFC) to remind people to change the batteries in smoke alarms and carbon monoxide detectors every 6 months. Prior to passage of the Energy Policy Act of 2005 the length of time between changing from Daylight Saving Time to Standard Time was approximately 6 months. Since then the change to Daylight Saving Time takes place at 2 a.m. on the 2nd Sunday in March and reverts back to standard time at 2 a.m. on the 1st Sunday in November. The time between the two is now 8 months and 4 months ---- not 6. Battery technology has changed and they are designed to last longer than they did ¼ century ago. Unless they are inserted in an alarm device that gets a lot of use, batteries should last at least 1 year. Batteries in your smoke alarms and carbon monoxide alarms should be changed annually unless they chirp prior to that.

   Many newer smoke alarms are sold as “long-life” or “ten-year battery” alarms and often contain non-replaceable batteries. These are designed to last for up to 10 years ---- however, there is no guarantee that they will function effectively for that long. Therefore it is important to regularly test these smoke alarms and replace the alarm (not just the battery) when testing indicates it is not functioning properly or when the alarm chirp reveals that the battery is low. For the sake of the environment, please recycle or dispose of used batteries appropriately.

8. **Smoke alarms should be replaced:**
   A. Never. Only the battery needs to be replaced.
   B. Annually
   C. Every 5 years
   D. Every 10 years or sooner if they do not respond appropriately when tested.
Answer D: Smoke alarms should be replaced: Every 10 years or sooner if they do not respond appropriately when tested. According to the USFA, a working smoke alarm reduces the risk of dying in a home fire by half.

9. A “combination” smoke alarm means the alarm:
   A. Will detect both smoke and high levels of CO
   B. Uses both ionization and photoelectric technology to detect smoke and fires
   C. Uses both ionization and photoelectric technology to detect fires plus detects high levels of CO
   D. None of the above
   E. I don’t know and I don’t want to just guess

Answer: B: A “combination” smoke alarm means the alarm: Uses both ionization and photoelectric technology to detect smoke and fires. Ionization alarms are generally more responsive to flaming fires. Photoelectric alarms are generally more responsive to smoldering (smoky) fires. For the best protection in your home, install and maintain a “dual sensor smoke alarm” that uses both ionization technology to respond to flaming fire and photoelectric technology to detect smoke. Neither type warns of increased levels of carbon monoxide (CO), therefore it is recommended that you also install a CO alarm.

10. Homes with hardwired smoke alarms (those that are connected to a home’s electrical system) should have battery back-up or additional battery operated smoke alarms.
    A. True
    B. False

Answer A: Homes with hardwired smoke alarms (those that are connected to a home’s electrical system) should have battery back-up or additional battery operated smoke alarms: True. In the event of an electrical fire or other power outage, battery back-up is necessary to alert residents to a fire.

11. A home fire escape plan should include:
    A. Location of smoke alarms, doors, windows and stairs
    B. Two ways out of each room if possible
    C. A safe meeting place outside where everyone will meet
    D. A and B
    E. All of the above

Answer E: A home fire escape plan should include: All of the above. Location of smoke alarms, doors, windows and stairs; two ways out of each room if possible; and a specific safe meeting place outside where everyone will meet.

12. Fire escape plans for older adults should include:
    A. Smoke alarms that will vibrate or have strobe lights for people with hearing and visual impairments
    B. All caregivers
    C. Accessible, realistic escape routes
    D. B and C
    E. All of the above

Answer E: Fire escape plans for older adults should include: All of the above (smoke alarms that will vibrate or have strobe lights for people with hearing and vision impairments, involves all caregivers, and has accessible, realistic escape routes). Fire escape planning should include discussion regarding pets, because pets are often the most important thing in the lives of many older adults and they will refuse to escape without attempting to rescue the pet. They need to understand that most pets are low to the ground and if able, will run to the door if it is left open. Older adults, like everyone else, need to know the importance of escaping quickly.

13. Poverty contributes to an increased number of fire injuries and deaths due to:
    A. Increased use of security bars or gates
    B. Lack of education / illiteracy
    C. Inability to afford smoke alarms, batteries, utilities and telephones
    D. Large numbers of people living together with a disproportionately large number of children to adults
    E. None of the above
    F. All of the above
Answer F: Poverty contributes to an increased number of fire injuries and deaths due to: All of the above (increased use of security bars or gates; lack of education / illiteracy; inability to afford smoke alarms, batteries, utilities and telephones; and large numbers of people living together with a disproportionately large number of children to adults). Security bars or gates are often installed more frequently in low income, high crime areas to keep burglars out. These bars and gates delay escape from the inside and will hinder firefighters’ ability to rescue occupants quickly. Security bars and gates need to have quick release latches.

14. Factors that may contribute to children getting burned include:
A. Lack of, or inadequate, supervision
B. Danger is not perceived by the caregiver
C. Responsibility above their ability
D. Abuse or neglect
E. A and D
F. All of the above

Answer F: Factors that may contribute to children getting burned include: All of the above (lack of, or inadequate, supervision; danger is not perceived by the caregiver; responsibility above their ability; and abuse or neglect). Supervision may be absent or inadequate (e.g. by an inappropriate or immature sibling or sitter, a substance-impaired adult, sleeping caregivers, infrequent observation, etc.). A caregiver may be ignorant or inexperienced in recognizing potential dangers or anticipating potentially dangerous situations (e.g. leaving matches or lighters within reach of a child, leaving a burning candle unattended and/or in reach of a child, carrying hot liquids or food while holding a child, etc.). A child may be given responsibility above their ability (e.g. bathing or caring for a sibling, cooking at a young age, burning trash/brush/weeds, lighting cigarettes or BBQ grills for parents, etc.).

15. The leading cause of home fires that kill children under 5 years old is:
A. Heating appliances
B. Cooking or kitchen related incidents
C. Children (self or others) misusing fire
D. Inappropriate use of smoking related materials by adults

Answer C: The leading cause of home fires that kill children under 5 years old is: Children (self or others) misusing fire. The child who misuses fire is not only a danger to him/herself, but also puts everyone else in the home at risk. Too often, a younger sibling or child in the home is unable to escape a fire caused by an older child. Younger children are more likely to set fires inside a home (frequently in a bedroom), while older children and teenagers are more likely to set fires outside. Matches and lighters must be securely stored/locked out of sight and up high out of reach of a child.

16. The leading cause of burns to infants and children under the age of five is:
A. Flame
B. Scald
C. Electrical
D. Chemical

Answer B: The leading cause of burns to infants and children under the age of five is: Scald burns. Unintentional tap water scalds are common in infants and young children. Tap water scalds are also prevalent in cases of child abuse. Food and beverage related scald burns increase as a child becomes more mobile and independent. Care must be taken to keep hot foods and liquids out of the reach of children. Never carry or hold a child while eating or drinking hot liquids. The average cup of freshly poured coffee is approximately 180 degrees and can cause very deep burns (i.e. third degree or full thickness) almost instantaneously. For more information on preventing scald burns to all ages, visit http://www.ameriburn.org/preventionEdRes.php

17. The leading cause of burns to children age 5 to 14 years is:
A. Flame
B. Scald
C. Electrical
D. Chemical
Answer A: The leading cause of burns to children age 5 to 14 years is: **Flame injury.** Older children have less supervision, more access to matches and lighters at school and at home, increased fascination with fire, more peer pressure to “play” with fire, and the manual dexterity to actually light a match or lighter. This results in increased clothing ignition to the child or someone the child is with, increased outdoor or structure fires that the child may try to extinguish to avoid getting in trouble, or structure fires that can trap a child.

18. **Home water heaters should be set no higher than:**
   A. 120 degrees F / 48.9 degrees C
   B. 130 degrees F / 54.4 degrees C
   C. 135 degrees F / 57.2 degrees C
   D. 140 degrees F / 60 degrees C

   **Answer A:** To prevent tap water scalds **in the home,** water heaters should be set no higher than: **120 degrees F / 48.9 degrees C.** At 120 degrees F/49 degrees C, it will take 5 minutes or more for a serious burn to occur, even to young children or older adults who have thinner skin. At 140 degrees F, it only takes about 3-5 seconds. At 155 degrees, it takes 1 second or less.

   An easy method to test your water temperature at the tap is to allow hot water to run for 3 to 5 minutes, then test with a candy, meat, or water thermometer. If the reading is higher than 120º F / 48º C, adjust the temperature of the water heater and wait a full day to allow the temperature in the tank to adjust. Retest and adjust again as needed.

   Tap water scalds are essentially preventable through a combination of behavioral and environmental changes. To learn more about tap water scald prevention check websites such as the American Burn Association ([www.ameriburn.org](http://www.ameriburn.org)), Safe Kids Worldwide ([www.safekids.org](http://www.safekids.org)), or Consumer Product Safety Commission ([www.cpsc.gov](http://www.cpsc.gov)).

   There is concern that water at 120 degrees F / 48.9 degrees C will not destroy the bacteria that cause Legionnaires’ Disease. It is important for adults to make informed decisions about the risks associated with each water temperature setting for themselves and their homes. Recommendations for hospitals, nursing homes, and some public buildings, may require lower temperatures. Know the code regulations for your specific location as some cities, states, provinces, hospitals, nursing homes and public buildings may require different water temperature limits.

19. **The safest temperature for bathing infants and young children is:**
   A. 95 degrees F / 35 degrees C
   B. 100 degrees F / 37.8 degrees C
   C. 110 degrees F / 43.3 degrees C
   D. 120 degrees F / 48.9 degrees C

   **Answer B:** The safest temperature for bathing young children is: **100 degrees F / 37.8 degrees C.** Temperatures even several degrees less than body temperature can result in hypothermia with prolonged exposure. For comparison, a hot tub/Jacuzzi is often set at 102-104 degrees F (i.e. more than plenty warm for bathing).

20. **Which fabric is the most resistant to ignition by a small flame source and should be used for children’s sleepwear?**
   A. 100% cotton
   B. Poly-cotton blends
   C. 100% polyester
   D. Wool

   **Answer C:** **100% polyester** is the fabric most resistant to ignition by a small flame source and should be used for children’s sleepwear. This answer surprises many people. Polyester does burn deeply as it melts, but it self-extinguishes when the flame source is removed. Cotton, on the other hand, continues to burn after the flame source has been removed, resulting in large deep burns. Polyester melts downward, sparing the face and respiratory tract while cotton burns upwards towards the face.

21. **The safest way to extinguish a grease fire in a pan on the stove is:**
   A. Remove the pan from the stove
   B. Pour water on the fire
C. Slide a lid or baking sheet over the pan and turn off the burner
D. Pour salt or baking soda on the fire

**Answer C:** The safest way to extinguish a grease fire in a pan on the stove is: **Slide a lid or baking sheet over the pan and turn off the burner.** Stay in the kitchen when cooking on the stove and keep a lid nearby. If a small grease fire starts in a pan, turn off the burner. Smother the flames (remove the oxygen) by carefully sliding the lid over the pan. Leave the lid on and do not move the pan until the fire is extinguished and the pan has completely cooled. Never put water or flour on a grease fire, as the fire will likely spread. Pouring baking soda or salt on the fire is also not recommended. These products are often located in a cabinet above or next to the stove, forcing the person to reach over the fire to get them and increasing the risk of clothing ignition.

22. The technology to produce fire safe cigarette (cigarettes that will self-extinguish when not being puffed) has been available for over 20 years. All cigarettes sold or manufactured in my state/province are required to be fire safe:
   A. True
   B. False
   C. I don’t know

**Answer A:** True. All 50 states in the U.S. now require that all cigarettes sold, manufactured, or imported into that state meet established cigarette fire safety performance standards. New York was the 1st state to enact this legislation in 2004. Wyoming was the 50th state to implement this law in July 2011. Canada was the first country to implement nationwide cigarette ignition propensity regulations in 2005. Many lives will be saved and injuries prevented as the result of these laws. For more information see the Coalition for Fire Safe Cigarettes at [www.firesafecigarettes.org](http://www.firesafecigarettes.org)

23. Sparklers can burn at temperatures greater than ____ degrees F. and can cause serious contact burns and ignite clothing.
   A. 600 degrees F / 315 degrees C
   B. 800 degrees F / 426 degrees C
   C. 1200 degrees F / 648 degrees C
   D. 2000 degrees F / 1093 degrees C

**Answer C:** Sparklers can burn at temperatures greater than **1200 degrees F / 648 degrees C** and can cause serious contact burns and ignite clothing or hair.

24. Regarding residential fire sprinklers, which of the following statements is true:
   A. Accidental sprinkler discharges are common
   B. On average, home sprinkler systems increase the cost of new home construction by more than $3 per square foot
   C. Only the sprinkler(s) closest to the fire will activate in most cases
   D. If there is a fire, all sprinklers in that room will activate at once

**Answer C:** Only the sprinkler(s) closest to the fire will activate. Sprinklers protect lives and property by keeping fires small. Sprinklers activate quickly and work by reducing heat, smoke, and flames to allow people more time to escape. This also decreases the extent of overall destruction that a fire can cause. Up to 90% of fires are contained by the operation of just one sprinkler. Accidental discharges are rare.

According to the Fire Protection Research Foundation the cost of installing home fire sprinklers in new construction averages about $1.61 per sprinkled square foot. The death rate per 1,000 reported home fires was 83% lower when wet-pipe sprinklers were present compared to homes without automatic residential fire sprinklers. For more information about home fire sprinklers visit [www.homefiresprinkler.org](http://www.homefiresprinkler.org).