



RESEARCH



Non-Fire Cooking Burn Injuries

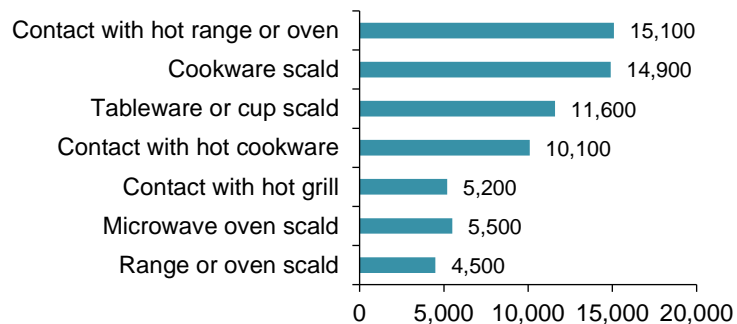
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Non-fire cooking burn injuries

Cooking is the leading cause of reported home fires and home fire injuries in the US, as well as a leading cause of home fire death. In 2014–2018, fire departments responded to an estimated average of 172,900 [home structure fires caused by cooking](#). These fires resulted in an average of 550 civilian fire deaths and 4,820 civilian injuries annually.¹ Yet the number of cooking fire injuries is far exceeded by non-fire cooking burns caused by contact with hot equipment, hot cooking liquids, or hot food.

Estimates of emergency department visits for burns associated with such items from the Consumer Product Safety Commission’s (CPSC’s) National Electronic Injury Surveillance System (NEISS) show the frequency of non-fire cooking burns in 2015–2019.² See Figure 1.

Figure 1. Non-Fire Cooking Burns Seen at Emergency Departments 2015–2019 Annual Averages



Source: CPSC’s NEISS. Accessed April 2020.

Ranges or ovens were the most common cooking equipment involved in non-fire cooking burns. Only 13% of thermal burns involving ranges or ovens were caused directly by fire or flame. In many cases, cookware (pots and pans) were involved in these range and oven burns. People of all ages were burned when they unintentionally touched a hot stove or pan or spilled a hot liquid. Some were scalded by hot grease when moving a flaming pan. Similarly, some of the microwave scalds occurred when food or beverages (in tableware or cookware) were taken out of the microwave and others were caused by items that had already been removed but were still hot.

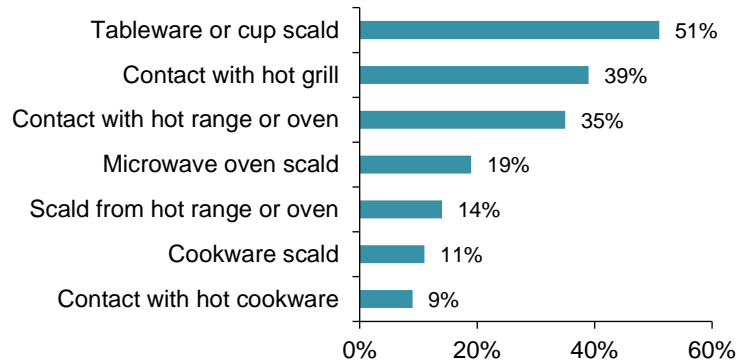
The examples from the NEISS data may sound familiar to many readers.

Examples of non-fire cooking burn injuries from NEISS

- A mother held her 1-month-old daughter as she put a pan in the oven. The infant kicked out, burning her leg when it touched the hot oven.
- A 9-month-old boy was crawling nearby and the hot oven door was open. His fingertips were burned when he tried to use the oven door to pull himself up.
- A 15-month-old girl ran into her mother as the woman took a pan of rice from the stove. The rice spilled on the child and burned her chest.
- A 15-month old boy was strapped into a car seat but was still able to pull a tablecloth, causing a boiling cup of noodles to fall on him and burn his thigh.
- A 16-month old girl pulled a cup of hot coffee from the kitchen counter, scalding her chest, shoulder, and arm.
- A 22-month-old boy pulled a pot of boiling water from the kitchen stove, burning his face, neck, chest, and shoulder.
- A 2-year-old girl touched the hot glass stove top after her father finished cooking.
- A 2-year old boy opened a microwave oven and removed a cup of hot coffee, spilling it on his face.
- A 5-year-old girl went to remove removed noodles from the microwave, spilled some, and scalded her thigh.
- A 9-year-old boy suffered second-degree burns as he tried to remove an egg he microwaved. The egg’s contents sprayed his face.
- When a 12-year-old girl’s father was kissing her goodbye, a travel mug of hot tea spilled and burned her elbow and torso.
- A 15-year-old suffered facial scalds from the steam coming from a bag of microwaved popcorn.
- A 17-year-old male spilled hot grease on his hand when he moved a pan off the stove.
- A 68-year old man burned his hand when he inadvertently touched the roasting pan he was taking out of the oven.
- An elderly woman was taking lasagna out of the oven when it spilled and burned her leg.

Children under five face a higher risk of non-fire cooking burns than burns from fire. Young children account for 6% of the population but a much larger percentage of non-fire burn injuries from cooking equipment; tableware, such as bowls and cups; and cookware, such as pots and pans. See Figure 2.

Figure 2.
Percent of Non-Fire Cooking-Related Burns
Seen at Emergency Departments in 2015–2019
Incurred by Children under Five



Source: CPSC's NEISS. Accessed April 2020.

To prevent these injuries, NFPA's Educational Messages Advisory Committee (EMAC) provides advice on how to prevent cooking fires and burns. To prevent burns to young children, EMAC suggests the following:

- Have a kid-free zone of at least 3 ft (1 m) around the stove and areas where hot food or drink is prepared or carried.
- Never hold a child while you are cooking, drinking a hot liquid, or carrying hot foods or liquids.
- Never heat a baby bottle in a microwave oven, as it heats liquids unevenly. Heat baby bottles in warm water from the faucet.³

Microwave oven scalds were also an issue for older children. Twenty-four percent of these scald victims were between five and nine years of age, and 14 percent were between 10 and 14 years old. NFPA's EMAC has two suggestions for microwave scald prevention.

- Place or install microwave ovens at a safe height within easy reach of all users. If possible, the face of the person using the microwave oven should be higher than the front of the microwave oven door to reduce the risk of a scald.
- Always supervise children when they are using the microwave oven.

In 2018, the standards technical panel for UL 923, *Standard for Microwave Cooking Appliances*, approved a new requirement for child-resistant doors on microwave ovens sold in the United States to reduce the risk of scalds to young children.⁴

¹ Ahrens, Marty. *Home Cooking Fires*. Quincy, MA: NFPA, publication pending.

² Consumer Product Safety Commission. National Electronic Injury Surveillance System. NEISS Online Database, 2000-2019, released April 2020. Generated in April 2020 at <https://www.cpsc.gov/cgibin/NEISSQuery/home.aspx>. Datasets were downloaded to obtain more detail. Thermal burns in which fire involvement was coded as 0 (no fire or no flame/smoke spread) were grouped with non-fire contact burns.

³ NFPA Educational Message — 2018 Edition: *Desk Reference for the Fire Service and Fire and Life Safety Educators*. Quincy, MA: NFPA, 2018. Accessed nfpa.org/-/media/Files/Public-Education/Resources/Educational-messaging/EMAC/EducationalMessagesDeskReference.pdf in April 30, 2020.

⁴ Robinson, Marla, et al. "621 Successfully Advocating to Make Microwave Ovens 'Child-Resistant' to Protect Young Children from Severe Scalds." *Journal of Burn Care & Research*, Volume 41, Issue Supplement 1, Page S154, March 2020. Accessed at <https://doi.org/10.1093/jbcr/iraa024.245>.