KIMS HOSPITALS™

NEWSLETTER ON WELLNESS

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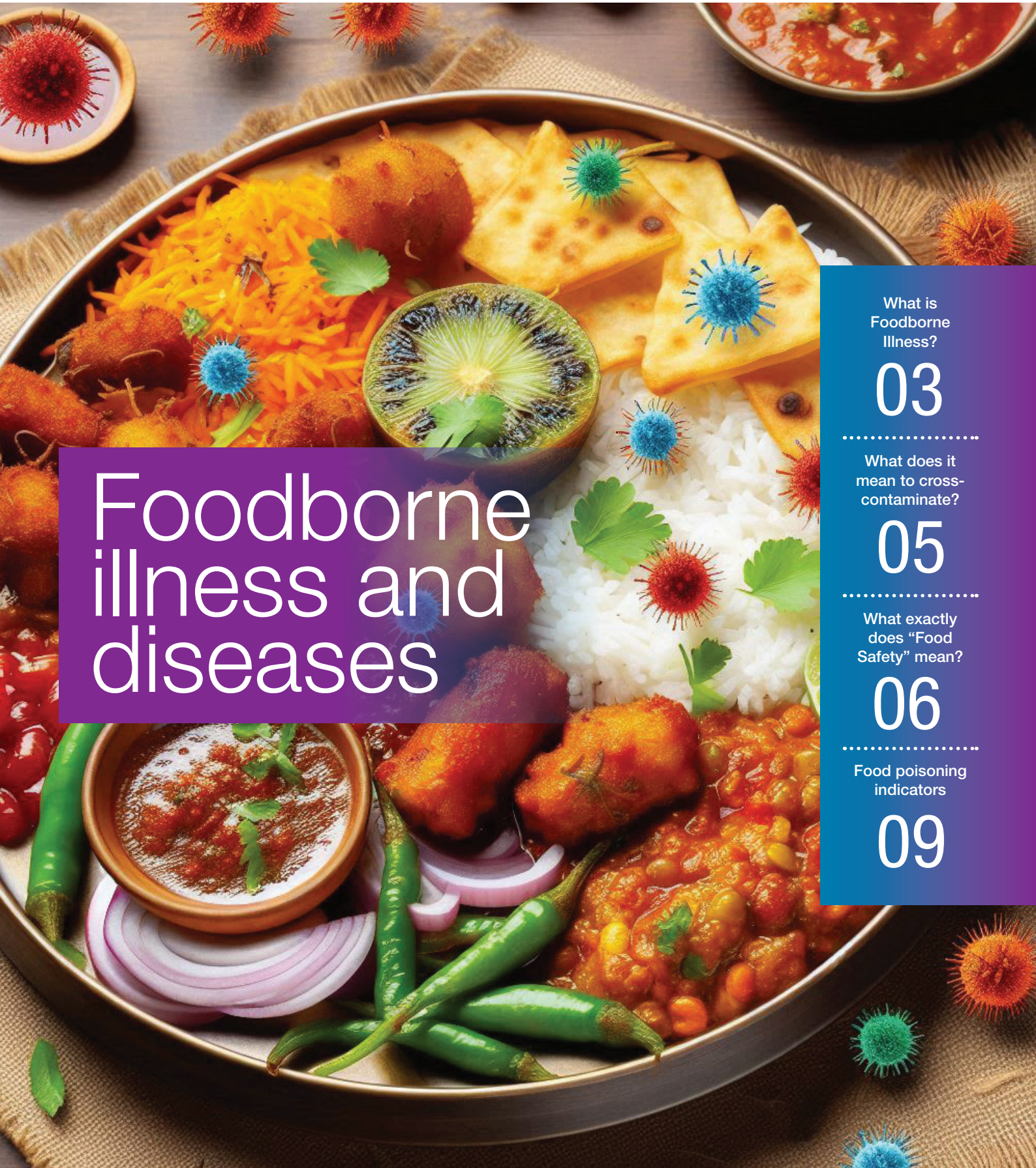


Foodborne illness and diseases

Editor's Desk

Dear Reader,

Here you are with the eleventh edition of the KIMS e-newsletter focused on health and wellness.

We frequently hear or read about shocking occurrences involving food safety and foodborne illnesses that impact large populations. Food's deliciousness often overshadows the numerous risks associated with it. Food safety and hygiene are paramount in a restaurant or at home.

Improper food handling and preparation can pose numerous threats. Foodborne illness occurs when harmful bacteria, pathogens, and germs contaminate food, causing consumers to suffer from food poisoning. Food-borne illnesses have become an important concern for everyone who takes food for granted and fails to practice safe handling and storage. Depending on the food, the handling and storage practices, several types of foodborne illnesses can occur. This newsletter discusses typical foodborne illnesses and how to avoid them.

All foods naturally contain small amounts of harmful bacteria. However, poor handling of the food preparation, along with improper cooking or storage, can multiply bacteria and cause illness. People who do not wash their hands systematically can introduce microbes into food. Repetitive use of raw food products contaminates most kitchen tools and their surfaces. Furthermore, leaving cooked food at room temperature for more than a few hours can rapidly multiply bacteria. Most bacteria grow undetected because they do not change the color or texture of food or produce a noxious odour. Freezing and refrigeration slow down or stop bacteria growth, but they do not destroy it completely. When you take out and thaw the food, the microbes can reactivate. There are recommended temperatures for cooking, refrigeration, and freezing food items. Safe food reduces the risk of people contracting foodborne diseases and food poisoning after consuming it. We discuss these aspects in this newsletter for our readers' benefit.

I hope you enjoy and find this newsletter useful, which is about the vital subject of food safety.

Dr. Bhujanga Rao Vepakomma
Chief Editor

Foodborne illness and diseases

- Cotton candy, a beloved treat among children, has been banned in several states due to the discovery of potentially harmful coloring agents.
- Prohibition of Manchurian in Goa was implemented due to the use of synthetic color in the dish and concerns regarding cleanliness. (source: timesofIndia.indiatimes.com)
- Private reverse osmosis cum packaged water supply plants have been sealed by the Guntur Municipal Corporation due to concerns about the water's pH level, which does not meet the prescribed standard for consumption. This action was taken in response to an outbreak of diarrhoea. (source: The Hindu Newspaper)
- An International brand's Dairy milk chocolate has been found to be contaminated with white worms and webs, making it unsafe for consumption. (source: Telanganatoday.com)

  OMG! There are numerous everyday stories like this. People often read health articles but tend to overlook their importance. The individuals must maintain a vigilant watch on the foods that they consume, determining which ones are beneficial to their health and which ones are not.

What is Foodborne Illness?

There are approximately 100 million cases of foodborne disease and 120,000 fatalities that occur annually in India. Foodborne illness, which is commonly referred to as food poisoning, is a difficult public health problem that may be avoided. This sickness occurs because of contaminated food and water. It is possible for symptoms to appear anywhere from minutes to weeks after the commencement of the illness. These symptoms frequently resemble those of the flu, since the individual who is unwell will have symptoms such as nausea, vomiting, diarrhoea, or fever. The contamination of food by pathogenic bacteria, viruses, or parasites, as well as prions (the agents of mad cow disease), and toxins such as aflatoxins found in peanuts, toxic mushrooms, and several kinds of beans that have not been cooked can lead to the development of foodborne illnesses.

Symptoms

Depending on the underlying reason, symptoms might differ. In addition to the symptoms of nausea, vomiting, fever, and pains, they may also have diarrhoea. Vomiting episodes might be repeated with a significant amount of time passing in between each one. This is because even if the infected food was removed from the stomach during the initial bout, infections such as bacteria can still migrate through the stomach and enter the intestines, where they can also begin to grow. There are situations when the contaminants remain intact within the gut. The symptoms of contaminants that need an incubation period, may not appear for several hours to several days, depending on the origin of the contamination and the amount of the substance that was consumed. The longer the incubation period, the more likely that people who are affected may incorrectly ascribe the symptoms to gastroenteritis since they will not be able to correlate the symptoms with the substance that they have eaten.

The incubation period is the amount of time that passes between the eating of contaminated food and the manifestation of the initial symptoms of an ailment before the sickness manifests itself. Depending on the agent and the amount that was ingested, this might take anything from a few hours to many days (and even months in some cases).

During the period of incubation, microorganisms go from the stomach into the intestine, where they attach themselves to the cells that line the intestinal walls and begin to multiply. Certain kinds of microorganisms can remain in the gut, others can produce toxins that are absorbed into the circulation, and yet others are able to directly penetrate the deeper tissues of the body.

Depending on the type of microorganism, the symptoms will vary.

Additionally, foodborne sickness can be caused by a variety of chemicals, including pesticides, pharmaceuticals, and natural harmful compounds like vomitoxin, chemicals released from deadly mushrooms, or reef fish. These are only some of the chemicals that can cause foodborne illness.

Within the natural environment that we live in, there are thousands of different kinds of bacteria. The term “pathogen” refers to microorganisms that can cause illness. It is possible for some microorganisms to cause food-borne illnesses if they are allowed to infiltrate the food supply.

What causes bacteria to live in food?

For all uncooked raw materials or food products, there is a possibility that that they may include microorganisms. For instance, boneless chicken, breasts and ground beef that are wrapped in plastic were formerly part of living birds or cattle or products that are not sterile which include raw meat, poultry, shellfish, and eggs. Similarly, fresh vegetables including lettuce, tomatoes, sprouts, and melons etc. also are not free from bacteria. Not all microorganisms are harmful. If food products are contaminated with pathogenic microorganisms, they may cause illness.

Inappropriate handling, preparation, or storage of food is the primary cause of the introduction of dangerous microorganisms into culinary products. Before, during, and after the preparation of food, it is important to practice proper hygiene to lessen the likelihood of receiving an infection.

Infants, young children, pregnant women and their unborn babies, older adults, and persons with compromised immune systems (such as those with HIV/AIDS, cancer,

diabetes, renal disease, and transplant patients) are among the individuals who are at high risk. Children under the age of five contributes to forty percent of the burden of food-borne illnesses. It is estimated that around fifty percent of malnutrition is not caused by a lack of food or a poor diet, but rather by low-quality or contaminated food with unclear sanitation and water sources, as well as unsanitary habits that lead to life-threatening diseases and illnesses such as diarrhoea.

When it comes to foodborne illness, infants are particularly susceptible all around the world. The World Health Organization has given certain guidelines about producing, using, and storing prepared food formulae. When it comes to protecting against foodborne diseases, breastfeeding continues to be the mosteffective preventative practice.

Bacteria	Associated Foods	Symptoms and Potential Impact
Campylobacter jejuni	Contaminated water, unpasteurized milk, and undercooked meat, poultry, or shellfish.	Diarrhoea (sometimes bloody), cramping, abdominal pain
Clostridium botulinum	Improperly canned foods, garlic in oil, vacuum-packed and tightly wrapped food.	Produce a nerve toxin causing illness, affects the nervous system. Symptoms may progress to cause muscle paralysis and even death
Clostridium perfringens (cafeteria germ)	Meats & meat products left for long periods in steam tables or at room temperature.	Intense abdominal cramps, nausea, and diarrhoea may appear 6 to 24 hours after eating; usually lasts about 1 day, but for immune comprised individuals, symptoms may last 1 to 2 weeks. Complications and/or death can occur very rarely.
Cryptosporidium	Soil, food, water, contaminated surfaces from recreational sources, (e.g., a swimming pool or lake).	Dehydration, weight loss, stomach cramps or pain, fever, nausea, and vomiting; respiratory problems.
Escherichia coli O157:H7	Uncooked beef, unpasteurized milk and juices contaminated raw fruits and vegetables, or water.	Severe diarrhoea (often bloody diarrhoea), abdominal cramps, and vomiting. Usually little or no fever. Acute kidney failure in children under 5 by developing hemolytic uremic syndrome (HUS).

Listeria monocytogenes	Ready-to-eat foods such as hot dogs, luncheon meats, soft cheeses. Smoked seafood and salads made in the store.	Fever, muscle aches, nausea and diarrhoea. If infection spreads to the nervous system, symptoms such as headache, stiff neck, confusion, loss of balance, or convulsions can occur .
Salmonella (over 2300 types)	Eggs, poultry, and meat that are raw or undercooked; milk and juice that has not been pasteurised; cheese and shellfish; and newly harvested fruits and vegetables that have been infected.	Diarrhoea, fever, and abdominal cramps In people with weakened immunity, the infection may be more severe.
Shigella (over 30 types)	Person-to-person by fecal-oral route; fecal contamination of food and water, especially salads, prepared and handled by workers using poor personal hygiene.	Disease referred to as "shigellosis" or bacillary dysentery. Diarrhoea (watery or bloody) , fever, abdominal cramps;
Staphylococcus aureus	Commonly found on the skin and in the noses of up to 25% of healthy people and animals. Person-to-person through food from improper food handling.	Severe nausea, abdominal cramps, vomiting, and diarrhoea recovery longer if severe dehydration occurs.
Vibrio vulnificus	Uncooked or raw seafood (fish or shellfish); oysters	Diarrhoea, stomach pain, and vomiting. May result in a blood infection and death for those with a weakened immunity particularly with underlying liver disease.

Source: https://www.fsis.usda.gov/food-safety/foodborne-illness-and-disease#:~:text=Foodborne%20Bacteria%20Table&text=Contaminated%20water%2C%20raw%20or%20unpasteurized,eating%3B%20may%20last%207%20days.

What does it mean to cross-contaminate?

The term “high-risk foods” refer to foods that are already prepared for consumption and serve as a breeding ground for potentially deadly pathogenic germs. For avoiding the possibility of cross-contamination, it is essential to handle and store high-risk foods in a different location from processed goods.

It is possible for foods, including those that have been cooked properly and are ready to consume, to become cross-contaminated with pathogens that have been transferred from raw egg products and raw meat, poultry, and fish products and their juices, as well as from other contaminated items, or from food handlers who have poor personal hygiene. By properly heating or processing food to eliminate germs, it is possible to avoid most cases of illnesses that are transmitted by food.

Through the utilization of innovative approaches to risk assessment, the World Health Organization (WHO) collaborates closely with the Food and Agricultural Organization of the United Nations (FAO) to address concerns regarding food safety throughout the entirety of the food supply chain, from production to consumption. These techniques offer effective instruments that are founded on scientific principles to enhance food safety, yielding benefits not just for public health but also for economic growth.

Cleanliness Helps Prevent Food borne Illness

The prevention of food-borne illnesses is aided by cleanliness.

All the items that come to touch with food must be kept clean always to ensure that food is handled in a safe manner.

Every year, the United States of America is responsible for an estimated 48 million illnesses and 3,000 fatalities.

Even though the United States has one of the healthiest food sources in the world, the prevention of illnesses that are caused by food continues to be a significant concern for public health. By adhering to these four simple measures, you can avoid becoming sick from food: Clean (be sure to wash your hands and surfaces often), Separate (avoid contaminating each other), Cook food at appropriate temperature and finally hill the food properly by refrigeration.

What exactly does “Food Safety” mean?

Assurance that consuming a product will not result in any adverse effects for the customer is what we mean when we talk about food safety. When we talk about food safety, we are referring to the practice of minimizing the existence of safety dangers, whether they are acute, chronic, or one-time, that might potentially cause harm to the health of the consumer. The term “food safety” also refers to the process of manufacturing, managing, storing, and preparing food in such a manner as to avoid the spread of illness and contamination throughout the food production chain. Additionally, it helps to guarantee that the quality and fitness of food are preserved to keep people healthy.

As a result, to guarantee the safety of food, it is essential that we are aware of and comprehend the risks that are associated with each stage of food handling, as well as our duties. Furthermore, we must demonstrate that we are making reasonable efforts to guarantee that our food products are always safe, so that we can prevent any adverse incidents from occurring to our customers.

There are several common areas in the kitchen where germs that might cause illness can persist. These places include your knives, your hands, your utensils, your cutting boards and your counters. Food safety refers to the process of ensuring that food should not be consumed in a manner that might result in the transmission of foodborne illnesses.

Perspective of the consumer

In accordance with the Food Safety and Standards, 2006, the Food Safety and Standards Authority of India (FSSAI) has been created. This authority is responsible for consolidating the many acts and directives that have been in place up to this point to address food-related concerns across a variety of Ministries and Departments. It is the responsibility of the customer to ensure that food is handled in a safe manner once it has been purchased. We may take several actions to assist in the prevention of food-borne illnesses caused by the safe handling of food at each stage as suggested below.

Some of the situations in which you should wash your hands with warm, soapy water for twenty seconds:

- Before and after handling food;
- After using the washroom;
- After changing a diaper and after handling pets;
- After attending to a sick person;
- After blowing your nose, coughing or sneezing;
- After handling undercooked eggs or raw meat, poultry or fish

It is imperative that you always use clean disposable gloves if you have any form of skin injury or illness on your hands. If you are not wearing gloves, wash your hands with warm soap water.

Taking the necessary precautions to prevent food poisoning

Before you eat, you should always disinfect your hands with hand sanitizer or wash them with soap. It is important to apply hand sanitizer even when you are only eating a light snack, especially if you have not cleansed your hands with soap already.

Wash your hands in the appropriate manner.

Scrub the backs of your hands, between your fingers, and under your nails for at least twenty seconds using normal soap and water.

Use a clean towel or paper napkin to dry your hands once you have rinsed them. Always remember to wash your hands, especially at these crucial moments when germs are most likely to spread. It is important to think about whether it is more hygienic to eat with your hands or to use the silverware/disposable ware that is provided at the restaurant.

Taking care of surfaces and vessels

Prior to going on to the subsequent phase in the process of food preparation, it is imperative to thoroughly clean with hot, soapy water all surfaces that come into touch with raw meat, poultry, fish, and eggs. When cleaning surfaces in the kitchen, you could choose to utilize paper towels. It is recommended that dish clothes be washed often in the hot cycle of your washing machine if they are used. Other surfaces, such as faucets and counter tops, should be cleaned by washing them with hot water that has been sprayed with soap.

Maintaining a clean cutting board requires washing it in hot, soapy water after each use, followed by rinsing it and allowing it to air dry or patting it dry with clean paper towels. Sanitizing cutting boards can be accomplished by using a solution consisting of one tablespoon of liquid chlorine bleach that is completely odourless for every gallon of water. Once the surface has been saturated with the bleach solution, let it sit for a few minutes before rinsing it off and allowing it to air dry or patting it dry with clean paper towels.

It is possible to use a dishwasher to clean boards made of non-porous materials such as acrylic, plastic, glass, and solid wood. However, laminated boards include the potential to break and split. Eventually, even plastic boards will become worn out. When cutting boards have gotten overly worn or have developed grooves that are difficult to clean, it is time to replace them.

Managing food in an outdoor setting

Bring many clean utensils with you if you go on a picnic or cook outside. You should have clean, dry, moist, and soapy towels with you so that you may clean your hands and surfaces. Since germs may be found anywhere, sanitation is an essential component in the prevention of food-borne illnesses. By ensuring that everything that comes into touch with food is kept clean, customers may have peace of mind that they are contributing to the effort to ensure that food is safe to consume. Always, attempt to steer clear of the mouthwatering street food.

Managing food that have been left over

Sometimes, whether we dine at home or at a restaurant, we end up with leftovers. Keep in mind that the meal should be prepared at a safe temperature and that the leftovers should be refrigerated as soon as possible to guarantee that they are safe to consume. The most common causes of food-borne illness are undercooked food that has not been cooked to an appropriate temperature and food that has been left out at an inappropriate temperature. When it comes to decreasing the risk of food-borne disease, taking care of leftovers is essential. To securely handle leftovers, it is important to follow the advice provided by the Food Safety and Inspection Service (FSSAI). It is important to rapidly pack leftovers in shallow containers and place them in the refrigerator so that they may cool down quickly.

The 2-2-4 rule for leftovers: With a time, limit of no more than two hours, transfer the meal from the oven to the refrigerator. To expedite the chilling process, the food should be stored in the refrigerator at a level of approximately two inches. Either consume within four days or freeze it.

Cook to the Right Temperature.

The interior temperature of food must be hot enough to destroy bacteria that might potentially cause illness for it to be considered safe for consumption.

You can ensure that your food is safe to eat by using a food thermometer. When you believe that the meal is ready, insert the food thermometer in the thickest portion of the food, ensuring that it does not meet any bone or fat.

When you want to make sure that your food has reached a temperature that is safe to eat. (Seek consulting the chart of minimum cooking temperatures below)

S. No.	Food Products	Minimum Internal Cooking Temperature
1	Poultry(whole or ground chicken, turkey)	75˚C for 2 minutes
2	Stuffing/Stuffed Meats	75˚C for 2 minutes
3	When including previously cooked, potentially hazardous ingredients in the dish	75˚C for 2 minutes
4	When including raw potentially hazardous ingredients in the dish	75˚C for 2 minutes
5	Ground Meats (pork, other meat or fish)	75˚C for 2 minutes
6	Pork, Tender Loin, Veal, Lamb Steaks/Chops	75˚C for 2 minutes
7	Pork, Tender Loin, Veal, Lamb Roasts	75˚C for 2 minutes
8	Fish	75˚C for 2 minutes
9	Shell Eggs For Immediate Service	75˚C for 2 minutes
10	Shell Eggs That Will Be Hot-Held	75˚C for 2 minutes
11	Fruit or Vegetables That Will Be Hot-Held for Service	75˚C for 2 minutes
12	Commercially Processed, Ready-to-Eat Food That Will Be Hot-held for Service (Includes cheese sticks, deep-fried vegetables, chicken wings, etc.)	75˚C for 2 minutes

Source: https://fostac.fssai.gov.in/doc/module%204%20-%20production.ppt https://www.statefoodsafety.com/Resources/Resources/cooking-times-and-temperatures-poster

After cooking, ensure the food is hot at a temperature of at least 140 deg F.

Use a heat source such as a chafing dish, warming tray, or slow cooker to keep food out of the temperature danger zone (between 40- and 140-degrees Fahrenheit), which is where bacteria develop fast. If you are not serving the food immediately after it has been cooked, you should keep it out of this zone.

Food should be microwaved until it reaches 165 deg F or above.

While microwave cooking, it is important to follow the instructions on the food label if it states, “Wait for x minutes after cooking.” This is because allowing food that has been microwaved to rest for a few minutes assists the food to be cooked effectively since cooler parts absorb heat from hotter places. Some professionally prepared frozen foods are not intended to be stirred while they are being heated, therefore it is important to follow the instructions on the packaging.

Cook the dish until it reaches an internal temperature that is safe.

A minimum internal temperature of 145 degrees Fahrenheit should be reached by all raw beef, hog, lamb, and veal steaks, chops, and roasts before they are removed from the heat source. This temperature should be tested with a food thermometer. Allow the meat to rest for at least three minutes before cutting it or eating it. This will ensure that it is both safe and of high quality. The decision to cook meat at higher temperatures may be made by customers for reasons related to their own personal preferences.

Cook all raw ground beef, pork, lamb, and veal to an internal temperature of 160 °F as measured with a food thermometer.

Cook all poultry to a safe minimum internal temperature of 165 °F as measured with a food thermometer.

Maintain hot cooked food at 140 °F or above.

When reheating cooked food, reheat it to 165 °F. Refrigerate and Freeze Food Properly.

Refrigerate perishable foods within 2 hours.

Between 40- and 140-degrees Fahrenheit, the bacteria that cause food poisoning proliferate at the fastest rate.

Your refrigerator should be set at 40 degrees Fahrenheit or below, and your freezer should be set to 0 degrees Fahrenheit or lower. If you want to be certain, use a thermometer for appliances.

It is imperative that perishable items are never left out of the refrigerator for longer than two hours.

If the food is exposed to temperatures above 90°F (like a hot car or summer picnic), refrigerate it within 1 hour. Never thaw or marinate foods on the counter. The safest way to thaw or marinate meat, poultry, and seafood is in the refrigerator.

The freezing process does not eliminate hazardous bacteria, but it does ensure that food is safe to consume until it can be cooked.

What is the FDA 2 hour rule for food storage?

When it comes to putting things that require refrigeration out at room temperature, the “two-hour rule” should be the standard. You should never let meat, poultry, fish, eggs, produce, or any other food that must be refrigerated

remain out at room temperature for more than two hours. If the air temperature is higher than 90 degrees Fahrenheit, you should only let it stay out for one hour.

Food poisoning indicators

In cases of food poisoning, dehydration is the most common and deadly consequence that can occur. Depending on the individual, various forms of food poisoning might result in potentially life-threatening consequences. These include the following: illness with listeria can cause a miscarriage if it occurs early in pregnancy, but it can also cause stillbirth, preterm delivery, or even a potentially deadly illness in the infant after birth if it occurs later in pregnancy. If an infant survives a Listeria infection, there is a possibility that they will suffer from irreversible brain impairment and delayed development. Escherichia coli strains can cause a serious complication called hemolytic uremic syndrome.

Food poisoning, or gastrointestinal poisoning can also be called acute gastroenterocolitis, is a health problem caused by ingestion of water or food contaminated by bacteria.

Botulism is a serious neuroparalytic disease caused by the action of a potent toxin produced by the bacterium Clostridium botulinum (C botulinum). The foods most involved are, canned vegetables, especially handmade ones (heart of palm, pickles, pequi); handmade, cured and smoked meat products (sausage, ham, fried meat preserved in fat – "corned meat"); smoked, salted and fermented fish; cheeses and cheese paste and rarely in processed canned foods.

Think before you eat raw fruits and veggies

It is essential to steer clear of fruits and vegetables that have not been properly washed or prepared. The restaurants frequently use tap water to rinse their raw materials, for the simple reason that, as was indicated before, tap water includes several different microorganisms.

Since many juice beverages and fruits appear so appetizing, it can be rather challenging to refrain from purchasing fruits from vendors located all throughout India. However, for the benefit of your own well-being, you should not. In India, one of the most common causes of stomach flu and food poisoning is the consumption of vegetables and fruit that have not been cooked.

The following general rules should be followed in the event of a food borne illness:

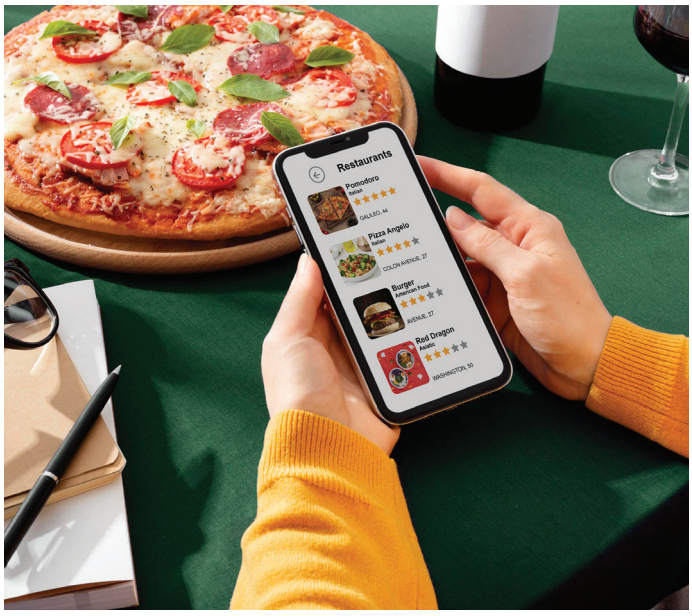
Don't throw away the proof. If there is a piece of the food that is under suspicion, properly wrap it, label it with the word "DANGER," and then freeze it. Keep all the materials that were used for packing, such as cans and cartons. It is important to record the type of food, the date, any other identifying markers that are present on the packaging, the amount of time that was ingested, and the time when symptoms first appeared. Keep any goods that are similar and have not been opened.

Seek rapid medical attention if the sufferer is in the "at risk" group. In a similar vein, you should contact your physician if your symptoms continue or become severe (for example, if you have bloody diarrhoea, extreme nausea and vomiting, or a high temperature). If the food in question was served at a big gathering, if it came from a restaurant or another food service facility, or if it was a commercial product, you should contact the local health authority.

Buying Food Online Is Convenient, but Is It Safe?

Using social media promotions, online food sales have been increased drastically in the past few years. The consumer should understand the basics of food safety when placing an order online. While food safety cannot be guaranteed the following actions should be taken:

- Please go through website and vendor credibility
- Look at the seller's history
- Read the online reviews & ratings
- Check the packaging integrity after delivery
- Discourage supplying hot food in plastic bags
- Use of aluminum foil to be encouraged or non-toxic eco-friendly alternative for food packing / storage at room temperature, but not for reheating food.



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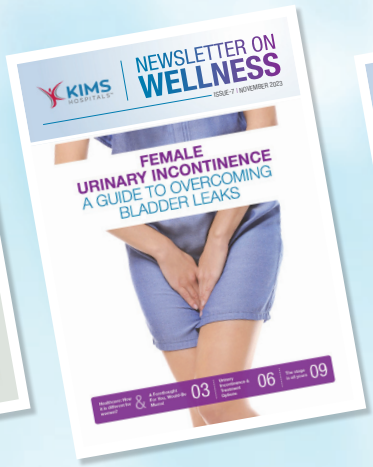

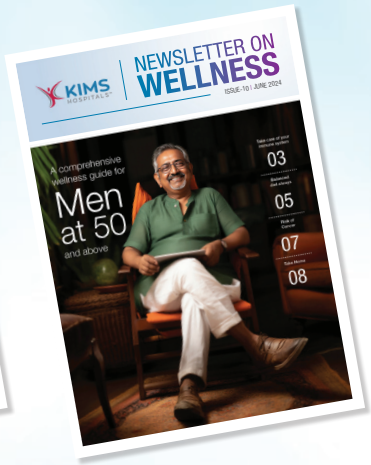

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