When I think of my favorite snack or meal I sometimes think about the invisible foodborne pathogens in some of them. These pathogens cause health issues and even death. But what if I could detect these contaminants before they reach my plate? I had a friend who stayed in the hospital for weeks due to food poisoning. I sometimes imagine a world where food safety is a guarantee. Thanks to technology, that world is now within our grasp. Food contamination detection sensors can monitor and manage food safety, and in this essay, we will explore the game- changing potential of these innovation sensors.

Food contamination causes many problems which includes the following:

* foodborne illness ranging from mild to severe, even life threatening
* health risks which can be dangerous to the elderly, pregnant women and young children.
* severe foodborne illness can result to hospitalization and even death
* foodborne illness can result to closed businesses.
* It can damage brand reputation
* loss of consumer trust in food industry
* increased healthcare cost
* emotional distress and trauma for affected individuals and families.

The aim or purpose of the food contamination detector is to help people detect food contamination thereby improving health and standard of living.

**System design**

Size: It will be built the size of a palm, for easy mobility

Food type: Liquid e.g. milk, juice, water and solid e.g. meat

Consumer type: For all individuals

power source: Rechargeable batteries

sensors:

Bio sensors to detect enzymes such as bacteria’s e.g. salmonella E. coli and viruses e.g. Norovirus

Chemical sensors to detect heavy metals and pesticides

Data analysis and integration: Machine learning algorithms for pattern recognition and integration with food safety management software.

**Working principles**

The food contamination detector will use food detection sensors. These sensors will be programed to detect harmful substances in food not easily seen with the human eyes. It will have an opening where food will be placed for tasting. The sensors will then verify if the food is safe for consumption or unfit for consumption. The detector will have a red and green light. The green light for safe to eat and the red light for contaminated. Once used the user will clean (wash with water) the detector so as not to contaminate other food placed for tasting.

Benefits of food contamination detector

1. Protection of vulnerable populations
2. Improved food safety
3. Reduced foodborne illness
4. Enhanced consumer trust
5. Reduced healthcare cost
6. Cost saving

If I could invent something new I would invent a food contamination detector to improve food safety. It will be a guardian over our plates, ready to sound an alarm against foodborne pathogens. Now we can all eat our food with confidence, not scared of a belly bite or diarrhea. It is now the era of food safety and with it, a world of peace of mind, one bite at a time.

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