Infectious organisms

There are many diseases spread by food which differ from microbial food poisoning in that the food, or water, acts merely as a means of transport for the organisms and not as a medium for growth. Small numbers of the organisms may be sufficient to cause infection, and examples can be found among the protozoa (toxoplasmosis), the bacteria (typhoid fever, paratyphoid fever, dysentery, tuberculosis, brucellosis), the viruses (Q fever, poliomyelitis, infectious hepatitis), and the parasitic worms (trichinosis).

Certain organisms of the genus *Salmonella* in addition to causing food poisoning also cause enteric fevers such as typhoid and paratyphoid fevers. These are true infections in the sense that the organisms invade the body tissues and become systemic. These infections usually arise from the pollution of water, milk or other foods by sewage containing enteric organisms from human excretors.

It has long been suspected that food can act as a vehicle of virus infection for diseases such as poliomyelitis and infectious hepatitis. Other virus particles might accumulate in the same way and be responsible for some incidents of food poisoning.

Trichinosis is a food-borne illness which can be fatal and is caused by a parasitic worm *Trichinella spiralis*. It is transmitted to humans through eating infected, undercooked meat in which the cysts survive.

Toxoplasmosis is another food borne illness which is caused by ingestion of a protozoan parasitic organism *Toxoplasma gondii* in undercooked infected meat. It can also be transmitted through eating contaminated soil on, for example, unwashed vegetables.

There are other parasitic worms and protozoan infections which may also be transmitted by foods.

The best method of preventing any food-borne disease – bacterial, viral, parasitic worm or protozoan – is by controlling the source of infection, and preventing the contamination of soil, food and water. The following precautions, however, help to prevent food borne disease:

- pasteurization of milk, egg, cream;
- sedimentation, filtration and chlorination of water;
- efficient sewage removal and its effective treatment;
- education of the operatives in food hygiene;
- protection of raw foods – such as vegetables – from fecal contamination.

(from: Parry-Pawsey, *Principles of Microbiology for students of food technology*, Hutchinson Educ.)

1 *Answer these questions about* Infectious organisms.

a. How does food poisoning differ from food borne infections? • **b.** What are some examples of food-borne infections? • **c.** What disease besides salmonellosis may *Salmonella* cause? • **d.** What are typhoid and paratyphoid fevers due to? • **e.** What diseases may be caused by food-borne virus infection? • **f.** What is trichinosis? • **g.** How can it be transmitted? • **h.** What is toxoplasmosis? • **i.** How can it be transmitted? • **j.** How can food-borne diseases be prevented? • **k.** How should milk, dairy products and eggs be treated to prevent food-borne disease? • **l.** How should drinkable water be treated?

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