

# Salmonella

Salmonella is a bacterium which is one of the commonest causes of food poisoning worldwide. There are over 2,000 different types of salmonella, but with the exception of the few which cause typhoid or paratyphoid fever, the illness they cause is similar. Salmonella are widespread in cows, poultry, pigs, pets and wild animals.

## *Salmonella food poisoning*

The commonest salmonella infection is due to the presence of the bacteria in food. After contaminated food has been eaten the bacteria multiply in the intestines and within 12-36 hours usually cause diarrhoea, stomach cramps and sometimes vomiting and fever. The symptoms continue for several days and then, in most people, they cease. Salmonella infection may rarely result in a very severe illness or even death, particularly in the elderly, the very young, or someone who is already suffering from another disease. Even when all the symptoms have disappeared the bacteria may remain in the gut and thus in the faeces. When this occurs the people are called carriers and they may pass the infection on to others unless their hygiene practices are good. The vast majority of people whose diarrhoea has settled down are not a risk to others and hence repeated testing of their faeces is not necessary.

Only those in the following categories need to take advice from Environmental Health officers or Consultant in Communicable Disease Control (CCDC): food handlers whose work involves touching unwrapped food to be consumed raw or without further cooking; health-care, nursery or other staff who have direct contact, or contact through serving food, with patients very susceptible to infection or persons in whom a salmonella infection would have particularly serious consequences; children aged less than five years attending nurseries, play groups, nursery schools etc; older children or adults who are unable to implement good standards of personal hygiene eg the mentally ill or handicapped or the infirm aged.

Food poisoning is a notifiable disease and doctors should inform their local CCDC. Investigations are carried out by telephone or a visit by Environmental Health Officers enquiring on risk factors and offering advice on hygiene and the prevention of future infection. For the majority of patients with a salmonella infection, antibiotic treatment is not required. The inappropriate use of some antibiotics may encourage and prolong the carrier state. However, antibiotics may be beneficial for some patients, such as those with a severe systemic illness, the elderly and very young, or those with a damaged immune system.

## *How do the salmonella bacteria spread?*

Food is the commonest source of salmonella for humans. The food may have been contaminated because the source, animal or bird, was infected. Salmonella is common among chickens, studies in 1990 showing that about 50% of frozen and fresh chicken contain the bacteria. Infections in dairy herds may lead to contamination of milk, which if not adequately pasteurised may be consumed directly or used in the preparation of milk products e.g. babies' dried milk feeds and cause infection.

Adequate cooking should eradicate salmonella in food. However salmonella may be spread in a kitchen from contaminated to non-contaminated food if hygiene and catering practices are substandard. Food should be stored in refrigerators to prevent the bacteria multiplying at room temperature. Food may also be contaminated by the hands of infected food handlers if they do not wash them properly after going to the toilet. If food prepared for a party or gathering is contaminated an outbreak of salmonella food poisoning may occur. Individuals nursing or caring for persons with salmonella diarrhoea may contaminate their hands with microscopic amounts of faeces which are carried to their mouths. This is the main reason for secondary cases within a family or in health-care workers.

### ***How is information about salmonella obtained?***

Salmonella infections are diagnosed by growing the bacteria from the faeces of infected persons. Almost all the salmonellas obtained are sent to the Central Public Health Laboratory, Colindale, for full identification. The information on the patient, the bacterium and the possible source is collated by the Communicable Disease Surveillance Centre of the Public Health Laboratory Service.

In 1981, just over 10,000 salmonellas from humans in England and Wales were examined. The numbers rose to more than 20,000 in 1998. The majority of infections are sporadic and the source of infection is unknown.

*Salmonella enteritidis* phage type 4 was uncommon in 1981, but is now the commonest salmonella causing infections in England and Wales. During 1998, 50% of all salmonella infections were due to this bacterium. *Salmonella enteritidis* phage type 4 is still overwhelmingly associated with poultry and eggs.

### ***Prevention of salmonella infections***

Salmonella infections usually result from a combination of contaminated foods, poor kitchen hygiene and inadequate cooking. Attention to good kitchen practices including thorough cooking of potentially contaminated foods, especially chicken, should be followed by both the housewife

and the chef. The Chief Medical Officer advises against the use of recipes with uncooked or lightly cooked eggs. However, adequate cooking of eggs, until the yolk is set, kills salmonellas. Care must also be taken to ensure that food does not become contaminated after cooking. The breeding and maintenance of salmonella free chickens and dairy herds would reduce the number of salmonella infections. Dairy produce can be rendered safe by pasteurisation as shown in Scotland by the dramatic fall in milk associated salmonella infections following the ban on the sale of raw milk. Person to person spread is reduced by good personal hygiene and in particular by thorough hand washing after going to the toilet or handling clothes soiled with faeces.

This leaflet has been compiled using information from the Association of Medical Microbiologists.



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