

## LISTERIOSIS and VULNERABLE GROUPS

The Institute of Food Science & Technology, has authorised this Advisory Statement, dated May 2009, as an IFST contribution to National Food Safety Week, which runs from 15-21 June 2009, organised by the Food Standards Agency.

### SUMMARY

***Listeriosis is a foodborne disease caused by eating food contaminated with *Listeria monocytogenes*. This organism causes serious illness in vulnerable groups such as the elderly, pregnant women, individuals with weakened immune systems and the newborn. *Listeria monocytogenes* is well-suited to growth and survival in foods, even if these are stored in the refrigerator, and is a major concern in ready-to-eat foods. *Listeria* are common in the environment and can be introduced into food by contact with contaminated surfaces or kitchen utensils. Here we offer pointers for minimising the risk to vulnerable consumer groups in relation to ready-to-eat foods.***

### WHAT IS THE CONCERN?

Listeriosis is a relatively rare but serious foodborne disease that is of concern because of the severity of illness caused and the high mortality rate. It particularly affects people with reduced immunity (immuno-compromised), including the elderly, pregnant women and unborn or newborn infants. In these vulnerable groups, immunity (natural defences in the body) is often suppressed and the microorganism responsible for causing illness, *Listeria monocytogenes*, is able to cause infection in other parts of the body, resulting in serious conditions including meningitis, encephalitis, blood poisoning and liver abscesses.

During the 1990's, listeriosis affected between 90-130 people per year in the UK. In recent years (2003-2007), the number of cases has increased to around 180-240 cases per year. This increase in cases has been linked to one group of vulnerable individuals, the elderly (those aged 60 years and over). Similar recent increases in cases of listeriosis in this age group have been reported in other countries in Europe but the reasons for this increase are not known. There is no evidence of increasing prevalence in foods.

It is recognised that most cases of listeriosis, including sporadic cases (affecting individuals and not linked to outbreaks) and those linked to common-source outbreaks are caused by eating food contaminated with *Listeria monocytogenes*. The incubation time for listeriosis varies from 11-70 days and this means it is often difficult or impossible to identify the particular food that caused illness. However, using information from listeriosis outbreaks, it has been possible to identify the key types of foods responsible. These are predominantly ready-to-eat, long shelf-life delicatessen products such as certain meat products and soft cheeses.

### WHERE CAN *LISTERIA MONOCYTOGENES* BE FOUND?

*Listeria monocytogenes* can be found in many natural environments, including soil, water, vegetation, sewage and farm environments. It can also be found in food manufacturing environments, in foods and in food preparation environments such as the home, e.g. worktops in the kitchen, sinks, cloths used for cleaning, and inside refrigerators. Contamination of foods can occur in food processing environments, after they are processed (such as cooking) but before

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they are packaged, and also when handling these foods in shops (e.g. on slicing machines, delicatessen counters), in the home and in catering establishments.

### MINIMISING RISK

*Listeria monocytogenes* is destroyed by normal cooking processes (e.g. reaching at least 70°C at the centre of the food for 2 minutes), but can survive and grow at refrigeration temperatures. It is this characteristic of being able to multiply at low temperatures that enables *Listeria* to grow to levels that are high enough to cause infection.

Since many ready-to-eat foods are stored in the refrigerator before consumption and are not cooked before eating, they can be a potential vehicle for listeriosis. It is therefore very important that foods are stored at the correct temperature and that they are not kept in refrigerators for periods long enough to allow growth of *Listeria*.

Vulnerable groups can prevent *Listeria* infection by avoiding certain long shelf-life, ready-to-eat delicatessen products and by handling food properly. The European Food Safety Authority<sup>1</sup> has identified the following such ready-to-eat foods as priorities: smoked fish, meat products and soft cheeses.

The maximum time that ready-to-eat foods should be kept is indicated by law on the label (the “use by” date), together with the storage conditions needed to allow that date to be met (e.g. actual temperature or “keep refrigerated”). Some foods are packed in special gas mixtures that allow the safe life of the **unopened** product to be extended. However, this does not change the way the food will deteriorate (“go off”) after opening the pack; in this case, the label also carries essential, additional instructions (e.g. “eat within 2 days of opening”).

### Always follow these four simple rules:

1. Never eat food after the use by date.
2. Always read the label and follow storage instructions, e.g. “keep refrigerated”; “eat within 2 days of opening”.
3. Keep your fridge at the right temperature - no more than 5°C (40°F).
4. If in doubt, throw it out.

### And ... always follow the basic rules on general food hygiene:

- Wash hands, knives and surfaces thoroughly and frequently, and especially after handling uncooked foods
- Prevent contamination of ready-to eat foods by keeping them separate from uncooked foods
- Cook foods properly, to reach at least 70°C (158°F) at the centre for 2 minutes
- Keep hot foods hot (above 63°C. 145°F)

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<sup>1</sup> *Listeria monocytogenes* in ready-to-eat foods, Scientific Opinion of the Panel on Biological Hazards, EFSA; adopted by the BIOHAZ Panel on 6 December 2007. Available at: [http://www.efsa.europa.eu/EFSA/efsa\\_locale-1178620753812\\_1178680093176.htm](http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1178680093176.htm)

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Competence, integrity, and serving the public benefit lie at the heart of IFST philosophy. At all times IFST aims to:

- Benefit the public supply of safe, wholesome, nutritious, tasty and attractive food through the application of sound science and technology;
- Improve public knowledge and awareness of important issues relating to the supply, production, safety and quality of food;
- Develop and communicate the knowledge underlying food science and technology, and further the education of food scientists and technologists;
- Safeguard the public by defining, promoting, and upholding professional standards of competence, integrity and ethical behaviour; and
- Maintain these standards by encouraging members to continue their professional education and development throughout their careers.

In serving the public benefit IFST takes into account the many elements that are important for the efficient and responsible supply, manufacture and distribution of safe, wholesome, nutritious, and affordable foods with due regard for the environment, animal welfare and the rights of consumers.

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