



Bord Iascaigh Mhara  
Irish Sea Fisheries Board

## **Information Note**

### **Hygiene Requirements when Handling Seafood**

## Hygiene Requirements when Handling Seafood

Good Hygiene is essential for the safe handling and preparation of Seafood.  
The Personal hygiene of staff and the cleaning and disinfecting of equipment and the workplace is of the utmost importance to prevent the contamination of food by the person that handles that food.  
People who do not maintain an appropriate degree of personal cleanliness, who have certain illnesses or conditions or who behave inappropriately, can contaminate food and transmit illness to consumers.

Most importantly, it is a Legal Requirement that staff must have the highest possible standards of cleanliness

It is the responsibility of all food manufacturers to take all reasonable precautions to prevent and control the risk of food contamination in locations or premises directly under their control.

To ensure the safety of food, it is necessary that employees, including temporary employees, are certified as medically fit to work in a food company, are adequately trained in hygiene and hygiene practices and wear clean suitable protective clothing

### Contamination

Contamination is classed as anything on or in a product that is not supposed to be there e.g bacteria, dirt, pieces of metal, oil, grease from equipment etc  
This contamination can be biological, chemical or physical

### Cross-Contamination

Cross-Contamination is the transfer of biological or chemical contaminants to food products from raw foods, food handlers, or the food handling environment

The type of cross- contamination most frequently implicated in foodborne illness occurs when disease causing bacteria or viruses are transferred to ready to eat foods

### Categories of Foods

Foods are classed as High Risk/Low Risk or Medium Risk Foods.  
In determining the level of control that is required to protect the consumer from food borne illness, foods including food ingredients can be categorized into: High Risk, Low Risk and Medium Risk Foods

**High Risk Foods**-These are foods which are a potential source of pathogenic (disease causing) microorganisms and are either intended for consumption by the consumer without a cooking step prior to consumption, which is adequate to kill

pathogenic organisms or foods which are intended for consumption by people with low immunity such as infants, the elderly and hospital patients. Also, if it is intended for use as an ingredient in the pharmaceutical/medical industry

### **Typical raw or ready to eat seafood that will not be cooked before it is eaten**

- Smoked Fish
- Sushi
- Seafood Salads
- Shellfish that is eaten raw

This type of food will not undergo a further cooking step before being eaten and if contaminated, poses a risk to the person consuming the food

**Medium Risk Foods-** These are foods which are a potential source of pathogenic microorganisms and are intended for consumption by the consumer, with a cooking step immediately prior to consumption, which is adequate to kill pathogenic microorganisms

**Low Risk Foods-** These are foods not previously known to be a source of pathogenic organisms and in which harmful residues or chemicals have rarely been found

### **High Risk Processing Areas in your premises**

High Risk Processing Areas are defined as all areas where high risk foods are exposed if the subsequent processing does not contain a step which effectively destroys all harmful microorganisms or areas where high risk foods are exposed after they have undergone a processing step which effectively destroys harmful microorganisms. Unprocessed food can cause contamination of processed food by personnel who can act as carriers.

Precautions must be taken to ensure that personnel are not a source of contamination from other areas. Access to high risk processing areas must be restricted to designated personnel who should wear readily identifiable protective clothing and footwear.

Personnel must gain access only through a changing room where they are required to change their footwear and protective clothing and to wash their hands

### **Sources of Contamination**

There are 3 common sources of contamination

- The Environment- Includes all areas of the factory, the air inside, the equipment you work with and the factory itself
- The Product Handler- e.g Seafood Handler or other Plant Personnel
- The Product itself - e.g Raw Fish can be heavily contaminated

## **Examples of Food Contamination**

### **Biological Contamination**

Almost all food poisoning is caused by contamination with certain germs called bacteria. Food can also become contaminated with other small organisms such as viruses, moulds, yeasts and parasites

### **Chemical Contamination**

Antibiotics, pesticides, chemicals used for cleaning, oil and grease, rat bait and other vermin control chemicals

### **Physical Contamination**

Slivers of metal, pieces of glass, wire, nails, plasters, jewellery, bones, scales etc

Although food can be physically and chemically contaminated, the major safety concern for the food industry is biological contamination.

### **Bacteria**

Bacteria live everywhere; in the air, water, soil, on the hands, on cleaning cloths, equipment and work surfaces.

Bacteria can live in certain parts of the body including hair, nose, mouth, throat, bowel and also in sores. They can also be found in contaminated food, food handlers, waste material and pests.

The more complex the process in your premises, the greater the risk of contamination by food poisoning bacteria and subsequent growth of these organisms if delays occur at any of the processing stages. Basically, as far as food hygiene is concerned, bacteria are found everywhere

## **The Importance of Hygiene in Combating Contamination**

Cleanliness of the premises and machinery and the personal hygiene of the staff must be of the highest standards in maintaining a hygienic environment.

### **Routes of contamination by Food Handlers**

Direct contamination involves the transfer of microorganisms from people to the food product by direct physical contact. e.g. through the skin, hands, hair, mouth, nose, eyes and ears. Faecal material also contains very high numbers of bacteria, some of these may be pathogens. Where workers have been ill with food poisoning, they will excrete the infective organism for some time after the symptoms cease.

## **Carriers**

Food Handlers can carry infectious agents in their gastrointestinal tract without having any obvious symptoms; such persons are termed carriers. Spread of contamination is either directly from the hands following poor toilet hygiene or indirectly as faecal material collects in the anal region and is spread to clothing.

## **Indirect Route of Contamination**

Indirect contamination involves people acting as a vector, transferring contamination from one area or surface to another. Footwear and clothing contaminated with pathogens has the potential to contaminate other surfaces when operatives move around the factory.

Other examples of indirect contamination by personnel include chopping boards, dishcloths, knives which can become contaminated by not being cleaned properly. These can contaminate other surfaces which subsequently come into contact with food.

## **Prevention of Contamination by Personnel**

Prevention of contamination by personnel depends on everyone being aware of the potential risks associated with bad hygiene practices. People are a potential source of disease producing microorganisms, as these microorganisms live in certain parts of the body. All food handlers must be regarded as a potential source of pathogenic organisms, and must therefore be trained in good hygiene practices.

## **The Human Body as a Source of Contamination**

### **Skin**

The epidermis or outer layer of the skin contains cracks, crevices and hollows that provides a favourable environment for microorganisms. Skin surfaces also have hairs and sweat glands and the skin maintains itself by depositing, perspiration, oil and dead cells on the outer surface. As skin secretion build up and the bacteria present continue to grow, the skin may become irritated and by scratching the area bacteria are transferred to food by the food handler.

Levels of bacteria found on the skin ranges from approximately 100 to 10,000,000/cm<sup>2</sup>. In healthy workers the majority of these microorganisms are resident on the skin and are not pathogenic.

### **Hair**

Hair is a significant source of contamination and hair density and oil secretions enhance the growth of microorganisms.

Examples of organisms isolated from hair include *Staphylococcus aureus*, *E. coli*

Direct infection by hair is via hair loss and deposition into the product.  
Indirect transfer occurs when microorganisms are transferred to product from the hands after scratching the scalp.

### **The Mouth, Nose and Throat**

Large numbers of bacteria are present in the mouth and dental plaque can contain as many as 100,000 million bacteria /gm. Brushing teeth regularly prevents a build up of plaque and reduces the degree of contamination that might be transmitted to a food product if an employee gets saliva on the hands or sneezes. Up to 40% of the adult population can carry *Staphylococcus aureus* in their nasal cavities. Occasionally, microorganisms can penetrate the mucous membranes overlying the surfaces within the nose, sinuses, pharynx and oesophagus and establish themselves in the throat and respiratory tract. Direct contamination from the nose and mouth to food products is via coughs, sneezes and spitting. Indirect contamination is via touching or wiping the mouth or nose and then touching food, either through scratching or via eating and smoking.

### **The Eyes and Ears**

Healthy ears can carry *S.aureus* and *Streptococci*. The eye is usually free of bacteria but mild bacterial infections may develop. Bacteria can then be found on the eye lashes and at the indentation between the nose and the eye. Contamination of food can occur indirectly if these organs are scratched

### **Preventing contamination of Food**

To prevent contamination of food by personnel, Food Handlers must be aware of the risks associated with bad hygiene practices. Food handlers not washing and drying their hands effectively is one of the major causes of food poisoning.

### **Staff Requirements**

All staff members (including temporary staff) must be examined by a medical practitioner prior to employment and certified as fit to work in a food company. Staff members suffering from respiratory tract infections or infectious illness (particularly gastrointestinal disorders, vomiting, diarrhoea) should not work in areas where food is exposed or where they can come in contact with food.

### **Reporting Illness**

If you are feeling unwell, report this to your supervisor and particularly if you feel unwell following a trip abroad, you must not handle food when suffering from any of the following, cold sores, sore throat, cuts which may be septic

## **Cuts and Skin Infections**

When the skin is cut or broken, foreign bacteria can enter the skin where they can multiply. The body reacts to this by forming pus. Pus can carry millions of dangerous germs. It is essential that food is protected from these bacteria. Cuts must be cleaned and then covered with a waterproof dressing. This dressing should preferably be blue in colour so that it may easily be seen should it fall into food. The part of the bandage covering the cut as well as that which sticks to the skin must also be waterproof.

## **Protective Clothing**

It is a Legal Requirement that every person working in a food handling area must maintain a high degree of personal cleanliness and shall wear suitable, clean and where appropriate, protective clothing. Protective Clothing is designed to protect food from contamination. All persons entering a processing area including visitors and sub-contractors must wear clean protective clothing. Maintenance staff and contractors must be checked to ensure that they do not carry dirt on the clothing into production areas, where product can be contaminated.

Clean overall, coats must be worn by all personnel entering or working in the production area. Coats or overalls should have no external pockets above the waistline and should be securely fastened. studs or velcro should ideally be used for this purpose. Do not use protective clothing outside the factory or on factory grounds and do not wear it to and from work.

## **Hair Covering**

Humans lose about 100 hairs every day so effective hair covering is essential. To be effective, all head hair must be completely contained, this includes beards. Wearing a cap or tying a scarf on the head is totally inadequate.

## **Use of Gloves**

Gloves which are new and in good condition can be a help in restricting the spread of bacteria. Worn gloves which have become roughened through use, may become porous and split. In this state, worn gloves become a hazard and harbour large numbers of bacteria on their surface

## **Re-usable/Disposable Gloves**

Re-usable gloves should be washed and disinfected regularly, both inside and out, and discarded once they begin to deteriorate. Disposable gloves are recommended where direct handling of food cannot be avoided. If not used properly, gloves can be a means of cross-contamination

## **Footwear**

Footwear is a potential vehicle for moving pathogens from one risk area of a factory to another. Footwear must be clean and workers should have separate footwear for use in the factory. This is to protect the food against the introduction of pathogenic microorganisms such as Salmonella and Listeria. At the low risk/high risk barrier, footwear must be either decontaminated or changed for footwear that is 'captive' to i.e. remains in, the high risk area.

## **Jewellery and other Requirements**

No jewellery, with the exception of plain wedding rings and sleeper earrings/studs should be worn. This also includes watches and bangles, which can be a source of mould or glass. Smoking can only be permitted in designated areas which should not include production areas or toilets. Chewing gum, sweets or food of any kind must not be brought into the production area.

## **Lockers**

Lockers should be maintained in a clean condition to ensure that they are not a site for the habourage of insects or rodents. Precautions should be taken that damp clothing or stale food does not remain in lockers as this can lead to the growth of moulds.

## **Hand Washing and Care of Hands**

Disinfection of food surfaces is possible but hands cannot be disinfected to the same degree, therefore hands are a potentially important means of distributing microorganisms. These microorganisms can be transferred from hands to food or from food to food via the hands. Maintaining a high level of personal hygiene includes keeping the hands and nails clean, nails short and free of nail varnish and not using excessive perfume.

Thorough hand washing will remove transient microorganisms, mainly bacteria, picked up temporarily from the environment e.g. E.coli and Salmonella which can pass from toilet paper on to the hands. These should be removed by thorough washing of the hands.

## **When to Wash Hands**

Hands must be washed :

- Before starting work
- After handling raw product
- After coughing, sneezing or using a handkerchief
- After using tobacco, eating or drinking
- After touching the face or hair
- After handling waste
- Hands must be washed after using the toilet facilities.



Also, Hands must be washed:

- After handling soiled equipment or utensils
- During food preparation, as often as necessary to reduce contamination
- When changing from one task to another

### **Hand Washing Procedure**

- Wet the hands and Apply soap
- Rub the hands to spread the soap over the hands
- Wash hands thoroughly. Start with palm to palm then interlacing the fingers,
- Wash the back of each hand with the palm of the other hand then each thumb clasped in the opposite hand and each wrist clasped in the opposite hand.
- Brush the nails and other areas where dirt is difficult to dislodge
- Rinse hands and rub to check that all the lather has been removed. Rinse again and Dry thoroughly

### **Hand Sanitising**

Hand disinfection facilities may be provide. These can provide some additional protection but only if appropriate hand washing has been carried out first.  
e.g Alcohol gel dispensers and dipping in sanitisers.

### **Drying Hands**

To dry hands, paper towels with easily cleanable waste receptacles for used towels, cabinet roller towels, or air hand driers should be provided adjacent to wash hand basins.

Air hand driers should not be used in sensitive production areas, to avoid the possible spread of bacteria.

### **Staff Facilities**

Facilities must be kept in good condition and cleaned regularly.

Canteen or rest rooms should not lead directly into the processing area

Adequate toilet facilities and associated hand washing facilities must be provided

Toilets should not lead directly into the processing area

Wash hand basins in both toilet and processing areas should be supplied with either warm or hot and cold water

Hand sanitising solutions or sanitising liquid soap in appropriate dispensers, should be provided at each hand washing point

## **Summary**

- All personnel have the potential to act as a source of contamination, be it biological, physical or chemical.
- Personal hygiene applies to everyone and this includes, management, visitors, contractors, engineers, maintenance and any other person who visits the premises.
- The same rules apply to everyone.
- Sound employee hygiene has been proved to Reduce Product Contamination.

## **Disclaimer**

This information note does not purport to be comprehensive or to be a legal interpretation or to constitute legal or other professional advice.

Changes to the legislation may be expected that will necessitate this information note to be further updated.