



## MEDIA RELEASE

**EMBARGOED TILL 4.00 PM ON 27 NOVEMBER 2015**

### **ADVISORY ISSUED ON CONSUMPTION OF RAW FISH**

*Food operators must source raw fish from suppliers with proper cold chain management and handling; Consumers advised to exercise caution*

**Singapore, 27 November 2015** – The National Environment Agency (NEA), Agri-Food & Veterinary Authority of Singapore (AVA) and Ministry of Health (MOH) have investigated the spike in local Group B Streptococcus (GBS) infections reported in July 2015.

#### **Investigation and Findings**

2 MOH's investigation established an association between the consumption of Chinese-style ready-to-eat (RTE) raw fish dishes and Type III GBS disease, specifically due to Sequence Type (ST) 283.

3 Since mid-July 2015, following the advisory issued by NEA to licensed retail food establishments to temporarily stop the sale of RTE raw fish dishes using *Song* fish (also known as Asian Bighead Carp) and *Toman* fish (also known as Snakehead fish), the number of GBS cases notified to MOH has decreased to the usual baseline of less than 5 per week and continued to remain low. The cause of these baseline infections remains unknown.

4 Food handlers are unlikely to be the source of the bacteria which caused the spike in GBS infections. The stool samples of 82 food handlers and fishmongers from retail food establishments, market stalls, and wholesalers were tested. None of them carried the Type III GBS ST283 strain. GBS is typically found in the gut of about 15% to 30% of adults without causing disease.

5 Between August and October, AVA and NEA tested fish samples from retail food establishments, wet markets, fresh produce section of supermarkets, and fishery ports. GBS was detected in 20.1% of these samples, and 4.1% were confirmed positive for Type III GBS ST283, which is the GBS strain associated with the consumption of Chinese-style RTE raw fish dishes. The contamination of the fish could have occurred along the food supply chain.

#### **Advisory on the Consumption of Raw Fish**

6 Following the investigations, NEA advises that all retail food establishments that sell RTE raw fish dishes are to source such raw fish from suppliers that adopt proper cold chain management and hygienic handling practices of the fish (*see Annex A for good hygiene practices and proper handling of RTE raw fish*). Such practices should be adopted by all suppliers and retail food establishments, who should also practise proper segregation of fish intended for raw consumption from other raw food ingredients intended for cooking. Specifically, in the interest of public health, all food stalls or food shops currently selling

Chinese-style RTE raw fish dishes (including *Song* fish and *Toman* fish) are to stop the sale of all types of RTE raw fish until they can comply with the practices required for RTE raw fish as stipulated in Annex A. NEA will not hesitate to take enforcement action against errant food operators.

7 Most fish sold at Singapore’s general markets and fishery ports are intended for cooking, and should not be eaten raw. Depending on the quality of the waters in which they were bred in, harvested from, or transported in, fish could carry a number of parasites or naturally occurring bacteria. Proper cooking would ensure such bacteria or parasites are killed. Should one choose to consume raw fish, the risk of food borne illness can be reduced by procuring fish that are intended for raw consumption. Such fish are typically bred or harvested from cleaner waters, and are stored and distributed according to appropriate cold chain management practices. The fish must then be handled hygienically and kept separated from other fish intended for cooking, to avoid cross contamination.

8 However, members of the public should note that there are always risks involved in consuming raw food as harmful bacteria may be present. They are reminded that cooking raw food is still the most effective way to kill the bacteria. As a general precaution, vulnerable groups of people, especially young children, pregnant women, elderly persons, or people with chronic illness such as diabetes, should exercise caution by avoiding the consumption of raw food.

9 As we usher in the Christmas, New Year and Lunar New Year festive seasons, members of the public who wish to purchase RTE raw fish are advised to do so from retail food establishments that have separate processes to handle RTE raw fish from other raw food meant for cooking, such as by having counters dedicated for the sale of RTE raw fish.

**27 NOVEMBER 2015**  
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## **GOOD HYGIENE PRACTICES AND PROPER HANDLING OF READY-TO-EAT RAW FISH**

The National Environment Agency (NEA) would like to remind all retail food establishments that wish to sell dishes with any RTE raw fish to ensure that the food sold is prepared hygienically and safe for consumption. The risks involved in the consumption of raw fish are widely known. As there is no cooking process to kill any food-borne pathogens present in the raw fish, retail food establishments intending to prepare and sell RTE raw fish should ensure good hygiene practices and proper handling of such RTE raw fish.

On 25 September 2015, NEA issued a general advisory to retail food establishments on “Good Hygiene Practices and Proper Handling of Ready-to-Eat (RTE) Food”. This current advisory is customised for the preparation and retail sale of RTE raw fish, and includes the relevant sections from the earlier advisory.

All retail food establishments that wish to sell dishes with any RTE raw fish (including *Song* fish and *Toman* fish) should observe the following:

### **1. Purchase and receipt of fish intended for raw consumption**

Most fish sold at the general markets and fishery ports are not intended for raw consumption. Depending on the quality of the waters in which they were bred in, harvested from, or transported in, fish could carry a number of parasites or naturally occurring bacteria. Retail food establishments should consider the following when purchasing fish intended for raw consumption.

- a) Purchase from suppliers who can show the quality of the fish, e.g. by providing a valid health certificates (or HACCP certificate/equivalent) by the relevant authority of the country of origin.
- b) Fish to be consumed raw should be packed independently in a clean and hygienic environment to avoid cross-contamination.
- c) Transportation of raw fish should be chilled at below 5°C.
- d) Upon receipt, check the temperature of the fish using a temperature gauge/temperature gun and that the fish remains fresh, wholesome and of good quality. Indications to look out for in fish may include firm, shiny flesh with no discolouration, clear eyes, bright red gills free from slime and lack of fishy odour.

## **2. Cold storage of fish intended for raw consumption**

As there is no cooking process to kill any harmful bacteria present in RTE raw fish, it is important for RTE raw fish to be kept at the correct temperature to prevent multiplication of any harmful bacteria present, to unsafe levels.

- a) Once received, fish for raw consumption must be kept chilled at below 5°C.
- b) Fish for raw consumption should be stored separate from other raw food intended for cooking.
- c) Adopt “first-in-first-out” principle for storage.
- d) Monitor the chiller and freezer temperatures regularly (e.g. twice daily). As a good practice, retain records of temperature monitoring and verify the chiller and freezer temperatures with a temperature monitoring devices regularly (e.g. weekly). All temperature monitoring devices should be calibrated annually.

## **3 Adopt proper and hygienic handling practices**

It is important for food handlers and operators to practise good hygiene standards when preparing raw fish for raw consumption. The need for proper segregation of food intended for raw consumption from other raw food ingredients intended for cooking is critical to prevent cross-contamination.

- a) Where possible, designate a separate area and sink to prepare fish for raw consumption. Where there is space constraint, prepare the raw fish for raw consumption before any preparation of raw fish intended for cooking to prevent cross-contamination.
- b) Use designated separate chopping boards, knives and other implements to prepare whole fish for raw consumption and slicing the fish fillet into RTE raw fish slices.
- c) When handling whole fish for raw consumption, ensure that de-scaling, degutting and de-boning are done properly to reduce the possibility of cross-contamination from inherent bacteria on the surface and in the gut of the fish.
- d) When handling plastic-wrapped fish fillet, do not place the plastic packaging on the clean chopping board intended to prepare RTE raw fish and ensure proper handling to prevent cross-contamination from the external surface of the plastic-wrapper.
- e) When slicing the fish fillet into RTE raw fish slices, use a separate set of clean and sanitised chopping board, knife and other implements.\*
- f) Use clean disposable gloves, tongs and other implements to handle RTE raw fish.

- g) Clean and sanitise sinks, chopping boards, knives and other implements thoroughly before use and in between tasks.

#### **4 Personal hygiene of food handlers**

- a) Wear clean attire and disposable gloves when handling fish for raw consumption and RTE raw fish. Do not wear accessories or jewellery as dirt trapped could potentially contaminate the food.
- b) Keep hands clean. Wash hands frequently with soap and water, especially before and after handling RTE raw fish and particularly after going to the toilet.
- c) Cover cuts or sores on hands and fingers with brightly-coloured waterproof dressing.
- d) Do not handle food if unwell or if suffering from vomiting and/or diarrhoea and for 48 hours after symptoms have stopped.

#### **5 Retail display and sale of dishes with RTE raw fish**

- a) RTE raw fish on retail display must be kept chilled at below 5°C.
- b) All food in display cabinets must be stored in covered food-grade containers or properly wrapped with clean food-grade material.
- c) After use, all plates, containers and covers should be cleaned and sanitised.
- d) Front-line staff to be trained to advise consumers to consume the RTE raw fish as soon as possible upon purchase; or to refrigerate immediately if it is not intended to be consumed soon after purchase.
- e) Where possible, retail food establishments should consider indicating RTE raw fish for direct consumption and the proper storage conditions (where applicable).

#### **Regulatory Guidance**

**Please note that NEA-licensed retail food establishments shall be liable for enforcement under the Environmental Public Health (Food Hygiene) Regulations should they fail to comply with the requirements as listed in para 2 (a) & (b); 3 (b), (e), (f) & (g); 4 (a), (b) & (c); 5 (a), (b) & (c).**