



Seafood Health Facts: Making Smart choices Balancing the Benefits and Risks of Seafood Consumption *Resources for Healthcare Providers and Consumers*

Microbes and Food Borne Illness: Microorganisms and Foodborne Illness [1]

Epidemiology of Seafood-Associated Infections in the U.S. [2]

Clinical Microbiology Reviews, April 2010, 399–411. Iwamoto, M., Ayers, T., Mahon, B.E. and D. Swerdlow. This peer reviewed journal article authored by scientists from the Enteric Diseases Epidemiology Branch of the CDC summarizes and analyzes the epidemiology of seafood associated illnesses in the U.S. from 1973 to 2006. Included is information on bacterial and viral pathogens and parasites associated with seafood. [To see the abstract for this publication click here \[2\]](#).

Outbreak Surveillance Data: Reported Foodborne Disease Outbreaks and Illnesses by Etiology and Food Commodities, United States - Centers for Disease Control and Prevention. [3]

This Website contains the annual summaries of US foodborne disease outbreaks and illnesses by etiology and food commodities. The latest report is for 2007 (posted August 2010). Summaries from previous years are also available. A database tool is available to search for specific combinations for year, state, location where illness occurred and etiology. [To visit this site click here \[3\]](#).

Morbidity and Mortality Weekly Report (MMWR) -Centers for Disease Control and Prevention. [4]

Weekly publication from CDC with reports on various diseases and illnesses including foodborne illness. Website includes weekly reports, surveillance summaries, supplements and recommendations from CDC and other health organizations. [To view the Morbidity and Mortality Weekly Report \(MMWR\) click here \[4\]](#).

Infections related to the ingestion of seafood Part I: Viral and bacterial infections. [5]

The Lancet Infectious Diseases. 2004 Apr;4(4):201-12. Butt AA, Aldridge KE, Sanders CV. Division of Infectious Diseases, University of Pittsburgh, the VA Pittsburgh Healthcare System, and the Center for Health Equity Research and Promotion, Pittsburgh, PA 15213, USA. butta@msx.dept-med.pitt.edu [6] The first part of this two-part review summarizes the general incidence of seafood-related infections and discusses the common viral and bacterial causes of these infections. For each agent, the microbiology, epidemiology, mode of transmission, and treatment are discussed. [To view the summary of this article click here \[5\]](#).

The role of seafood in bacterial foodborne diseases. [7]

Microbes and Infection. 2000 Nov;2(13):1651-60. Feldhusen F. State Veterinary Institute for Fish and Fishery Products, Schleusenstr., D-27472, Cuxhaven, Germany. **Abstract:** Pathogenic bacteria, when present in marine seafood and in fresh cultured products, are usually found at fairly low levels, and where these products are adequately cooked, food safety hazards are insignificant. A few bacteria associated with fecal contamination of seafood continue to pose a large-scale health threat through seafood. [To view a copy of this article click here \[8\]](#).

[Assessment and Management of Seafood Safety and Quality by H. H. Huss, L. Ababouch and L. Gram, FAO Fisheries Technical Paper No. 444. Rome. 2003. \[9\]](#)

This paper compiles the state of knowledge on fish safety and quality with the view to provide a succinct yet comprehensive resource book to risk and fish quality managers. After an introduction about world fish production and consumption and the developments in safety and quality systems, it provides a detailed review of the hazards causing public health concerns in fish and fish products. It devotes several Chapters to risk mitigation and management tools, with a detailed description of the requirements for the implementation of Good Hygienic and Manufacturing Practices (GHP/GMP), of the Hazard Analysis and Critical Control Point (HACCP) system and of the monitoring programs to control biotoxins, pathogenic bacteria and viruses and chemical pollutants. Chapters on the use of microbiological criteria, the use of the HACCP approach to target quality aspects other than safety matters, predictive microbiology, traceability and examples of food safety objectives complete the document.

[To view this resource click here](#) [9].

[Control of indigenous pathogenic bacteria in seafood. \[10\]](#)

Food Control, Volume 8, Issue 2, April 1997, Pages 91–98. Hans Henrik Huss, Danish Institute for Fisheries Research, Department of Seafood Research, Technical University of Denmark, Building 221, DK-2800, Lyngby, Denmark **Abstract:** The pathogenic bacteria indigenous to the aquatic and general environment are listed. Their distribution in nature, prevalence in seafood and the possibilities for growth of these organisms in various types of products are outlined. These data, combined with what is known regarding the epidemiology of disease, are used to place the various seafood products in risk categories and to identify areas of concern. It is concluded that the presence of pathogens in molluscs and the growth of *Listeria monocytogenes* in lightly preserved fish products are hazards which are presently not under control. In order to prevent growth and toxin production by *Clostridium botulinum* when products are stored at abuse temperature, it is recommended that additional barriers to growth are included in lightly preserved (e.g. cold smoked salmon) and low-heat treated (e.g. REPFEDS) products. It is finally pointed out that the Hazard Analysis Critical Control Point (HACCP) system is the preferred strategy in most quality assurance programmes and it is recommended that microbiological criteria are applied only as guidelines in the verification of the HACCP-system — and not for official control purposes. [To view this article click here](#) [10].

[Diagnosis and Management of Foodborne Illnesses, A Primer for Physicians and Other healthcare Professionals. \[11\]](#)

Produced collaboratively by the American Medical Association, the American Nurses Association, Centers for Disease Control and Prevention, Center for Food Safety and Applied Nutrition – Food and Drug Administration, and the Food Safety and Inspection Service – United States Department of Agriculture. The American Medical Association is offering this Primer **free to physicians** and other healthcare professionals. [A personal digital assistant \(PDA\) version of the primer](#) [12] is also available for downloading. This version, written for both PocketPC and Palm operating systems runs in the third party software, iSilo, and features interactivity and searchability. The Website contains factsheets on foodborne illness causing agents and patient scenarios. [To view this site click here](#) [11].

[Fish and Fisheries Products Hazards and Controls Guidance – Food and Drug Administration. \[13\]](#)

The primary purpose of this guidance is to assist processors of fish and fishery products in the development of their HACCP plans. Processors of fish and fishery products will find information in this guidance that will help them identify hazards that are associated with their products, and help them formulate control strategies.

Another purpose of this guidance is to help consumers and the public generally to understand commercial seafood safety in terms of hazards and their controls. This guidance does not specifically address safe handling practices by consumers or by retail establishments, although many of the concepts contained in this guidance are applicable to both. This guidance is also intended to serve as a tool to be used by federal and State regulatory officials in the evaluation of HACCP plans for fish and fishery products. describes the potential hazard of pathogens and methods of its control in commercially processed seafood. [To view this](#)

[guidance document click here](#) [13].

Foodborne Pathogenic Microorganisms and Natural Toxins Handbook (The Bad Bug Book) - Food and Drug Administration. [14]

This handbook provides basic facts regarding foodborne pathogenic microorganisms and natural toxins. It brings together in one place information from the Food & Drug Administration, the Centers for Disease Control & Prevention, the USDA Food Safety Inspection Service, and the National Institutes of Health. [To view this handbook click here](#) [14].

FoodNet Surveillance - Pathogens and Conditions - Centers for Disease Control. [15]

This Website provides general information, technical information and a link to the Enteric Diseases Epidemiology Branch of CDC where published information can be retrieved on foodborne illness and important pathogens including: *Cryptosporidium*, *Cyclospora*, *E. coli*, *Salmonella*, *Shigella*, *Listeria*, *Vibrio* and *Yersinia*. [To visit this CDC Website click here](#) [15].

Seafood Safety - National Academy of Sciences, Institute of Medicine Report, 1991. [16]

This comprehensive report summarizes seafood safety issues related to microbial risks, natural toxins and chemical contaminants in both commercial and recreationally caught seafood. The report was produced by a multidisciplinary committee of 13 scientists convened under the auspices of the Academy's Food and Nutrition Board. The committee consisted of experts in the fields of public health, marine pathology, marine toxicology, food science and technology, food microbiology, biostatistics, seafood safety policy and regulations, epidemiology, risk assessment, industry structure, and public interest. The committee was asked to evaluate the health effects of marine and freshwater fishery products (fresh or frozen) available to the consumer from commercial and recreational sources, and to identify options for improvement of the current system of seafood surveillance and control. [View this here.](#) [16].



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[3] http://www.cdc.gov/outbreaknet/surveillance_data.html

[4] <http://www.cdc.gov/mmwr/>

[5] [http://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(04\)00969-7/fulltext](http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(04)00969-7/fulltext)

[6] <mailto:butta@msx.dept%2E%80%93med.pitt.edu>

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[9] <http://www.fao.org/docrep/006/y4743e/y4743e09.htm>

[10]

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[11]

<http://www.ama-assn.org/ama/pub/physician-resources/medical-science/food-borne-illnesses/diagnosis-management-foodborne.page?>

[12]

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[13]

<http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/Seafood/FishandFisheriesProductsHazardsandControlsGuide/default.htm>

[14]

<http://www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/default.htm>

[15] http://cdc.gov/foodnet/surveillance_pages/pathogens_conditions.htm

[16] http://www.nap.edu/openbook.php?record_id=1612&page=R1