

Mr. Alex Trent
Executive Director
Salmon of the Americas
194 Nassau Street
Princeton, NJ 08542

Dear Mr. Trent:

As medical doctors and scientists, we were deeply concerned by a paid advertisement that appeared as a supplement in *The New York Times Magazine* on Sunday, November 27, 2005. Your advertisement made extensive claims about the health benefits of farmed salmon and promoted its consumption to pregnant women and health-conscious mothers. The ad went so far as to over-lay the text, "just what the doctor ordered", on a picture of a pregnant woman. We believe these claims misrepresent the real risks posed to women who plan to become pregnant at some time in their lives, and to their offspring. The disproportionate levels of contaminants in farmed salmon are not only linked to increased rates of cancer, but many are also neurotoxins that can lead to learning disorders and/or a reduction in the IQ of children exposed to them via the mother's body. It is irresponsible of Salmon of the Americas to make these claims in an effort to increase sales of their product.

Research shows farmed salmon worldwide contain much higher levels of persistent organic pollutants, such as PCBs, dioxins, dibenzofurans, polybrominated flame retardants (PBDEs) and chlorinated pesticides than do wild salmon. The levels are often so high, in fact, that women should stringently limit their intake before and during pregnancy. A report released by the National Academy of Sciences in 2003, "Dioxin and Dioxin-like Substances in the Food Supply: Strategies to Decrease Exposure" stated:

"Fetuses and breastfeeding infants may be at particular risk from exposure to DLCs [dioxin-like substances]. This is due to the potential for DLCs to cause adverse neurodevelopmental, neurobehavioral, and immune system effects in developing systems, combined with the potential for *in utero* exposure of the fetus to DLCs and exposure of breastfeeding infants to relatively high levels of DLCs in breast milk."

The main differences between farmed and wild salmon contaminant concentrations are largely a result of what they eat. While wild salmon eat a large variety of aquatic organisms such as krill, zooplankton, and small fish, farmed salmon consume a formulated high-fat feed consisting primarily of other fish ground into fishmeal and fish oil used to encourage rapid growth. During the past 50 years, vast quantities of industrial and agricultural chemicals have been deposited in the ocean through chemical processing and other industrial activities, agricultural runoff and illegal dumping. Since most of these contaminants are fat soluble, they collect in the fat of ocean fish that are exposed to them. And when these are made in to fish meal and fish oil, as they contain high levels of these contaminants, they end up in farmed salmon and are ultimately passed on to the consumer.

Salmon farming is also associated with a host of ecological issues. The concentrated nitrogenous wastes from farms may contribute to the formation of "dead zones" that currently affect over 150 coastal regions worldwide. In addition, farmed salmon often escape and inter-breed with wild salmon, endangering their ongoing survival, and can become infested with sea lice that are able to infect wild finfish populations. But the biggest problem for the environment is the fact that it takes two to five pounds of wild caught fish to make one pound of farmed salmon, so we are depleting wild fish populations with salmon farming, without understanding the impacts of these practices on the marine food chain.

While salmon does pose certain health benefits, especially from heart-healthy omega-3 fatty acids, the health benefits from farmed salmon may be offset or overridden by the contaminants in farmed salmon especially for children, young women, and pregnant mothers. A recent study in the *Journal of Nutrition* compared the quantitative cancer and non-cancer risks of exposure to organochlorine contaminants in farmed salmon with the (omega-3) fatty acid associated health benefits of salmon consumption and concluded:

“Young children, women of child-bearing age, pregnant women and nursing mothers not at significant risk of sudden cardiac death associated with CHD [congenital heart disease] but concerned with health impairments such as reduction in IQ and other cognitive and behavioral effects, can minimize contaminant exposure by choosing the least contaminated wild salmon or by selecting other sources of omega-3.”

There are less contaminated sources of omega-3 fatty acids than farmed salmon including wild caught salmon and other fish. The bottom line: Young women, children and expectant mothers do not need to eat contaminated fish to benefit from the omega-3 fatty acids. Salmon of the Americas should be more responsible when making health claims. Ocean-farmed salmon is definitely *not* what we as medical doctors and public health experts would order for expectant mothers. Responses to this correspondence can be sent to the Institute for Health and the Environment, University at Albany, One University Place, Room A217, Rensselaer, NY, 12144.

Sincerely,

David O. Carpenter, M.D.
Professor, Environmental Health and Toxicology Division
School of Public Health
State University of New York at Albany

Rosalie Bertell, Ph.D., G.N.S.H.
Retired President, International Institute of Concern for Public Health
International Science Oversight Board, National Association for Public Health Policy
International Physicians for Humanitarian Medicine, Board of Regents

Eric Chivian, M.D.
Director, Center for Health and the Global Environment
Harvard Medical School

Richard Clapp, D.Sc.
Professor of Environmental Health
Boston University, School of Public Health

Paul R. Epstein, M.D., M.P.H.
Associate Director, Center for Health and the Global Environment
Harvard Medical School

Samuel S. Epstein, M.D.
Chairman of the Cancer Prevention Coalition,
Professor Emeritus Environmental & Occupational Medicine
University of Illinois at Chicago School of Public Health

Page Three

Jeffery A. Foran, Ph.D.
President, Midwest Center for Environmental Science and Public Policy
Adjunct Professor, University of Illinois-Chicago School of Public Health

Ronald A. Hites, Ph.D.
Distinguished Professor, School of Public and Environmental Affairs
Indiana University

Barbara Knuth, Ph.D.
Professor and Chair, Department of Natural Resources
Cornell University

Philip J. Landrigan, M.D., M.Sc.
Professor and Chairman
Department of Community & Preventive Medicine
Professor of Pediatrics
Mount Sinai School of Medicine

Anthony D. LaMontagne, Sc.D., M.A., M.Ed.
Associate Professor
Centre for Health & Society, School of Population Health
University of Melbourne

Steven J. Schwager, Ph.D.
Associate Professor, College of Agriculture and Life Sciences
Cornell University

*Institutional affiliations for identification purposes only.

cc: New York Times