



COMMONWEALTH of VIRGINIA

Department of Health
P O BOX 2448
RICHMOND, VA 23218

Karen Shelton, MD
State Health Commissioner

TTY 1OR
1-800-828-1120

December 29, 2023

MEMORANDUM

TO: The Honorable Robert Orrock
Chair, House Health, Welfare and Institutions Committee

The Honorable R. L. Ware
Chair, House Agriculture Chesapeake and Natural Resources Committee

The Honorable L. Louise Lucas
Chair, Education and Health Committee

The Honorable J. Chapman Petersen
Chair, Senate Agriculture, Conservation and Natural Resources
Committee

FROM: Karen Shelton, MD
State Health Commissioner, Virginia Department of Health

SUBJECT: Fish Consumption Advisories

This report is submitted in compliance with the Virginia Acts of the Assembly §32.1-248.01, which states:

The Virginia Department of Health shall develop a written policy, which shall be revised annually that identifies the levels of concern for certain toxic substances used in determining whether to issue a fish consumption advisory.

Should you have any questions or need additional information, please feel free to contact Dwight Flammia, Ph.D. at (804) 864-8127 or dwight.flammia@vdh.virginia.gov.

KS/AJ
Enclosure

Pc: The Honorable John Littel, Secretary of Health and Human Resources

FISH CONSUMPTION ADVISORIES

REPORT TO THE GENERAL ASSEMBLY

2023



VIRGINIA DEPARTMENT OF HEALTH

PREFACE

The Virginia Department of Health (Department) is mandated with developing a policy to be revised annually that identifies the levels of concern for certain toxic substances that the Department will use in determining whether to issue a fish consumption advisory. The initial written policy was submitted December 1, 2000, to the Chairmen of the House Committee on Health, Welfare and Institutions, the House Committee on Conservation and Natural Resources, the Senate Committee on Education and Health, and the Senate Committee on Agriculture, Conservation and Natural Resources.

TOXICOLOGY

Virginia Department of Health

Dwight Flammia, Ph.D.

State Public Health Toxicologist

Office of Environmental Health Services

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EXECUTIVE SUMMARY

The Department is mandated with developing a policy to be revised annually that identifies the levels of concern for certain toxic substances that the Department will use in determining whether to issue a fish consumption advisory. The initial written policy was submitted December 1, 2000, to the Chairmen of the House Committee on Health, Welfare and Institutions, the House Committee on Conservation and Natural Resources, the Senate Committee on Education and Health, and the Senate Committee on Agriculture, Conservation and Natural Resources. A review of the risk assessment used to calculate levels of concern which included exposure factors and reference doses was conducted. Recommendations from the review of polychlorinated biphenyl, polybrominated diphenyl ethers, mercury, dioxin, and Kepone are listed below.

RECOMMENDATIONS

1. When polychlorinated biphenyl levels in fish range from 100 to below 500 micrograms per kilogram ($\mu\text{g}/\text{kg}$), the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels equal or exceed 500 $\mu\text{g}/\text{kg}$ in fish, the Department recommends avoiding consumption of contaminated fish species.
2. When polybrominated diphenyl ether levels in fish range from 0.5 to below 1.0 milligrams per kilogram (mg/kg), the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels equal or exceed 1.0 mg/kg in fish, the Department recommends avoiding consumption of contaminated fish species.
3. When mercury levels in fish range from 0.5 to below 1.0 mg/kg , the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels range from 1.0 to below 2.0 mg/kg , the Department recommends limiting consumption to one, 8 oz meal per month. When levels equal or exceed 2.0 mg/kg in fish, the Department recommends avoiding consumption of contaminated fish species.
4. When dioxin levels in fish range from 2.0 to below 5.0 nanograms per kilogram (ng/kg), the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels range from 5.0 to below 10 ng/kg , the Department recommends limiting consumption to one, 8 oz meal per month. When levels equal or exceed 10 ng/kg , the Department recommends avoiding consumption of contaminated fish species.
5. For Kepone, the Department is currently using the U.S. Food and Drug Administration action level of 0.3 mg/kg . When Kepone levels in fish are 0.3 mg/kg or higher, the Department recommends avoiding consumption of contaminated fish species.

INTRODUCTION

The Department shall develop a written policy which shall be revised annually, that identifies the criteria and levels of concern for certain toxic substances that the Department will use in determining whether to issue a fish consumption advisory. The policy shall initially include the criteria and levels of concern for polychlorinated biphenyl, mercury, dioxin, and Kepone. The policy shall be provided to the Chairmen of the House Committee on Health, Welfare and Institutions, the House Committee on Conservation and Natural Resources, the Senate Committee on Education and Health, and the Senate Committee on Agriculture, Conservation and Natural Resources no later than December 1, 2000. The full text is found in Chapter 6 in the Code of Virginia.

BACKGROUND

In October 2000, pursuant to §32.1-248.01 of the Code of Virginia, the Department published guidelines for the issuance of fish consumption advisories due to contamination of fish with polychlorinated biphenyl, polybrominated diphenyl ethers, mercury, dioxin, and Kepone. These initial guidelines established the criteria and contaminant levels of concern the Department would use for determining whether a fish consumption advisory should be issued for certain fish species in state waters. The Department reviews this information yearly to ensure it is accurate based on current guidelines and applicable science.

In June 2023, the Department's State Public Health Toxicologist reviewed the current guidelines and applicable science related to polychlorinated biphenyl, polybrominated diphenyl ethers, mercury, dioxin, and Kepone. The U.S. Environmental Protection Agency's integrated risk information system and the Food and Drug Administration's action levels were reviewed for any changes to daily reference doses and cancer slope factors. Exposure factors, such as body weight and meal size, used to calculate an acceptable fish meals per month were also reviewed for changes. The Department did not find any changes in the science. The most current guidelines are available on the Virginia Regulatory Town Hall through the following links: [dioxin](#), [Kepone](#), [mercury](#), [polybrominated diphenyl ethers](#), and [polychlorinated biphenyls](#).

RECOMMENDATIONS

1. When polychlorinated biphenyl levels in fish range from 100 to below 500 micrograms per kilogram ($\mu\text{g}/\text{kg}$), the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels equal or exceed 500 $\mu\text{g}/\text{kg}$ in fish, the Department recommends avoiding consumption of contaminated fish species.
2. When polybrominated diphenyl ether levels in fish range from 0.5 to below 1.0 milligrams per kilogram (mg/kg), the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels equal or exceed 1.0 mg/kg in fish, the Department recommends avoiding consumption of contaminated fish species.
3. When mercury levels in fish range from 0.5 to below 1.0 mg/kg , the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels range from 1.0 to below 2.0 mg/kg , the Department recommends limiting consumption to one, 8 oz meal per month. When levels equal or exceed 2.0 mg/kg in fish, the Department recommends avoiding consumption of contaminated fish species.
4. When dioxin levels in fish range from 2.0 to below 5.0 nanograms per kilogram (ng/kg), the Department recommends limiting consumption of contaminated fish species to two, 8 oz meals per month. When levels range from 5.0 to below 10 ng/kg , the Department recommends limiting consumption to one, 8 oz meal per month. When levels equal or exceed 10 ng/kg , the Department recommends avoiding consumption of contaminated fish species.
5. For Kepone, the Department is currently using the U.S. Food and Drug Administration action level of 0.3 mg/kg . When Kepone levels in fish are 0.3 mg/kg or higher, the Department recommends avoiding consumption of contaminated fish species.

APPENDIX A – CHAPTER 6 OF THE 2000 ACTS OF ASSEMBLY CODE OF VIRGINIA § 32-248.01

Be it enacted, the Virginia Department of Health shall develop a written policy, which shall be revised annually, that identifies the criteria and levels of concern for certain toxic substances that the Department will use in determining whether to issue a fish consumption advisory. The policy shall initially include the criteria and levels of concern for polychlorinated biphenyl, mercury, dioxin, and Kepone. The Department shall issue fish consumption advisories as provided for in the policy and shall do so on a timely basis. A copy of the written policy shall be provided to the Chairmen of the House Committee on Health, Welfare and Institutions, the House Committee on Conservation and Natural Resources, the Senate Committee on Education and Health, and the Senate Committee on Agriculture, Conservation and Natural Resources no later than one month prior to adoption of the policy but no later than December 1, 2000. Any revision of the policy shall be submitted to the chairmen of these committees no later than one month prior to the adoption of the revision by the Department.

APPENDIX B – ACRONYMS AND ABBREVIATIONS

This is a listing of the acronyms and abbreviations appearing throughout the report and its appendices.

mg/kg – milligram/kilogram

µg/kg - microgram/kilogram

ng/kg – nanogram/kilogram

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