**Conference for Food Protection**

**2010 Issue Form**

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| **Council Recommendation:** | Accepted as  Submitted |  | Accepted as Amended |  | No Action |  |
| **Delegate Action:** | Accepted |  | Rejected |  |  |  |

*All information above the line is for conference use only.*

**Title:**

Grocery Seafood Advisory for Women of Childbearing Age and Children

**Issue you would like the Conference to consider:**

This proposal asks the Conference to require grocery stores to post fish advisory information aimed at Women of Childbearing Age and Children (the "TARGET GROUP"). This "FISH ADVISORY" will apply only to retail seafood purchases in grocery stores, excluding "ready to eat" food, and would not apply to ready to eat food provided by other non-grocery FOOD ESTABLISHMENTS. The purpose of the proposal is to communicate to the TARGET GROUP federal Food and Drug Administration and Environmental Protection Agency consumption advice regarding the benefits of fish and the relative presence of methlymercury in seafood species. This information is primarily only available online through these agencies and should be communicated to the TARGET GROUP at grocery stores.

**Public Health Significance:**

This issue represents a public health matter of the highest order: protecting children's' developing brains and cognitive health. Women of childbearing age need this information posted at grocery stores rather than online. First, this will reduce the problem of concerned women avoiding otherwise-healthy seafood that is important for fetal development when they are unsure about which seafood is safe to eat. Second, it will address the problem of ill-informed consumers in the TARGET GROUP unknowingly exposing developing fetuses and children to seafood that contains high amounts of methylmercury.

Though most people do not have elevated mercury levels, developing fetuses are particularly susceptible to mercury exposure and consumption of contaminated fish is the main source of exposure to methylmercury. As the EPA explains on its website, studies in other countries have shown that "mothers with no symptoms of nervous system damage [have given] birth to infants with severe disabilities, [from which] it became clear that the developing nervous system of the fetus may be more vulnerable to methylmercury than is the adult nervous system" (Attachment 3, EPA Health Effects). Most children do not exhibit such disabilities but instead may suffer from subtle, sub-clinical neurological deficits that can lower their IQ and educational attainment.

Studies analyzing data from the Centers for Disease Control's National Health and Nutrition Examination Survey ("NHANES") have shown that perhaps 400,000 children each year may have mercury levels at or above the Reference Dose level set by the EPA (Mahaffey et al. 2005, Transande et al. 2005). Further, these figures are significantly higher if the recent studies on the higher ratio of fetal cord blood to maternal blood are taken into account.[1] Recent studies from the more comprehensive 1999-2004 NHANES results show that overall, 4.7% of women of childbearing age exceed the EPA's 5.8ug/L standard and 10.4% exceed the suggested, more sensitive 3.5ug/L level (Mahaffey et al. 2009)(See also Attachment 5, CDC NHANES Data on Levels Exceeding EPA RfD).

This burden on the population can have long-range health and economic implications for states and the nation as a whole. Seafood has nutritional benefits which can enhance cognitive function in children, however, so it is important from a public health perspective that women of childbearing age and children not eliminate seafood from their diets. To ensure this, consumers need better information on the relative mercury contents of fish so they can enjoy fish consumption while lowering their mercury exposure by consuming lower-mercury seafood. For this reason it is imperative that the TARGET GROUP have access at grocery stores to the federal fish consumption advice that the FDA and EPA jointly publish online (Attachment 1, Online Advisory).

The proposed changes first reflect the recommendations of the FDA-EPA's 2004 Online Advisory in an easy-to-understand format. The FISH ADVISORY also facilitates these recommendations by containing a chart that categorizes seafood by relative mercury content, the majority of this seafood being low in mercury. These proposed changes are intended to better protect the public health of fetal and child cognitive development by disseminating to the TARGET GROUP the federal Online Advisory. This proposal will thereby also restore consumer confidence in the safety of the commercial seafood supply by expanding awareness among the TARGET GROUP of healthy, lower mercury seafood products.

Currently, the online FDA-EPA Advisory does not effectively reach consumers. Indeed, most women of childbearing age either do not know of the risks of mercury or, if they do, they are confused about the extent of their exposure and which fish species represent safe, healthy choices. While the Online Advisory lists four "DO NOT EAT" fish and a handful of lower-mercury choices, it leaves consumers in the dark about the vast majority of other fish, most of which are low in mercury. This limits consumer choice and undermines confidence in the seafood industry, which in turn may jeopardize public health.

Background

Since 2004, the FDA and EPA have jointly published an Online Advisory to communicate recommended guidelines for the consumption of seafood by women of childbearing age (ages 45 or under) and children (the TARGET GROUP)(Attachment 1, Online Advisory). The Online Advisory states that the TARGET GROUP should not eat certain high-mercury species (shark, swordfish, tilefish, and king mackerel), and should limit albacore tuna to six ounces per week, to reduce fetal and childhood exposure to methylmercury. Methylmercury is present in most seafood in varying amounts and is a neurotoxin that can impair child neurodevelopment when consumed at certain levels.

The FDA-EPA's Online Advisory is designed to reduce methylmercury exposure within the TARGET GROUP, to generally keep levels generally at or below the EPA's Reference Level of 5.8 ug of mercury per liter of blood, which corresponds to a Reference Dose of 0.1 ug Hg/kg-bw/day (the "RfD"). The EPA established this RfD for methylmercury in 1999, based on the best evidence then available, using data from a long-term epidemiological study in the Faeroe Islands carried out by researchers at Harvard University and elsewhere. Research since then confirms that public health concern over methylmercury exposure is justified, and that efforts to guide women to pick low-mercury fish must be expanded and improved (Attachment 6, Review of Recent Scientific Studies). Since women are advised to consume fish while pregnant, for nutritional benefits, it is vitally important that women have information to help them identify low-mercury fish, so they (and their babies) can simultaneously enjoy these nutritional benefits while minimizing their exposure to methylmercury.

The federal commercial fish Online Advisory translates the EPA's Reference Dose into consumption recommendations based on the relative average mercury content of various seafood species. Based on this, for example, the federal Online Advisory (Attachment 1) makes the following three major recommendations to the TARGET GROUP:

* Do not eat very high-mercury species such as shark, swordfish, tilefish, and king mackerel;
* Limit canned albacore tuna to 6-ounces per week; and
* Eat two servings (up to 12-ounces) of lower mercury fish per week, including shrimp, salmon, and light canned tuna.

For example, as to the recommendation for lower-mercury fish, for an average-weight woman this consumption recommendation comports with the EPA's RfD guidelines for seafood that contain 0.12 ppm or less of methylmercury. This grouping includes light canned tuna, which contains an average of 0.118 ppm of methylmercury and thus can be consumed by the TARGET GROUP up to two times a week (Attachment 4, FDA Fish Data).

It is also key to note that the EPA's RfD is based on weight, whereas the consumption recommendations by the EPA and FDA are based on a hypothetical, average-weight woman. Therefore, lighter-weight individuals in the TARGET GROUP-such as children and smaller womenwho follow the ounce recommendations would have mercury exposure above the EPA's RfD.[2] The federal Online Advisory addresses this by advising that children eat smaller-sized portions, though women with below-average weight also should eat smaller portion sizes to remain within the EPA's RfD.

The federal Online Advisory does not give any information on other fish, other than the very high-mercury fish and a handful of lower mercury species of seafood; it leaves out, for example, both other fish in the low mercury category and fish with moderate mercury. The proposed FISH ADVISORY will remedy this to give women the information they need to make informed health decisions. (Attachment 7, Proposed Fish Advisory)

Proposed Changes

The proposed changes to the Model Food Code solve this problem by giving consumers expanded species-specific information about the relative mercury levels in most seafood sold commercially in the U.S., based on FDA seafood data. It also gives the TARGET GROUP more comprehensive EPA consumption guidelines to allow for a broader range of seafood choices than does the Online Advisory. These changes seek to better promote public health not only by giving the TARGET GROUP this federal advice where they need it - in grocery stores - rather than online, but also by filling in the information gaps that the Online Advisory left unanswered.

Seafood contains important nutrients, which for many seafood species include high amounts of beneficial Omega-3 fatty acids. The majority of the nation's seafood market is in fact low in mercury, and consumers in the TARGET GROUP need greater awareness of the array of low-mercury seafood choices from which they can consume healthy seafood while at the same time protecting fetal and childhood development. For these reasons it is vital to effectively communicate to the TARGET GROUP not only the recommended consumption limits but also which seafood species are low in mercury and thus meet the consumption limits.

In providing this information, the proposed FISH ADVISORY presents a simple, color-code chart displaying the relative mercury levels in the majority of commercial seafood, divided into high, moderate, and lower-mercury categories. These categories are based on EPA calculations of recommended fish consumption, based on the EPA's RfD for the average woman, which also serves as the foundation for the FDA-EPA joint advice in the 2004 Online Advisory. (Attachment 2, EPA Consumption Recommendations by PPM Level)

Specifically, the changes expand the range of seafood choices for the TARGET GROUP beyond the Online Advisory's current, limited list of low-mercury species. Further, these changes are based strictly on federal information available through the FDA and EPA, including FDA data on the mercury content in commercial fish species and EPA consumption guidelines for the TARGET GROUP (Attachment 2, EPA Consumption Recommendations). The EPA has six consumption categories, but for ease of understanding the proposed FISH ADVISORY uses a chart with only three "red-yellow-green" groupings:

1. The proposal eliminates the gap left by the FDA-EPA Online Advisory, by giving the complete list of low mercury seafood (defined as containing 0.12 ppm or less of methylmercury) that can be consumed twice a week by average-weight individuals in the TARGET GROUP;

2. It expands the list to include moderate-mercury seafood (containing 0.13 - 0.31 ppm of mercury), which are not mentioned on the Online Advisory despite the fact that under EPA guidelines the TARGET GROUP may safely consume fish from this category up to once a week;[3] and

3. It identifies higher-mercury species (above 0.31 ppm), which under EPA guidelines the TARGET GROUP should avoid. (The higher-mercury grouping in the current proposal does not contain albacore tuna, since the FDA-EPA Online Advisory issues specific consumption advice for albacore which the proposed FISH ADVISORY communicates elsewhere.)[4] The EPA guidelines specify that fish in excess of 0.31 ppm of mercury should only be eaten once every two weeks, or once a month or less for fish with higher levels, with no other fish eaten during that period. Such infrequent seafood intake by the TARGET GROUP would deprive developing fetuses and children of the benefits of seafood, which the FDA recommends should ideally be consumed (from lower mercury species) twice a week, for up to a total of 12 ounces per week. Members of the TARGET GROUP who follow the proposed chart's "avoid" advice for these higher-mercury species will thus be able to more frequently consume seafood in the moderate- and lower-mercury categories. (Attachment 7, Proposed Fish Advisory Chart)

These figures were derived from the Online Advisory and/or the EPA's RfD consumption recommendations on which the Online Advisory is based. As the EPA stated in its 2004 Derivation of Safe Fish Consumption Rate (for noncommercial fish, which has the same RfD standard as commercial seafood), "one can safely consume 2 meals/week at concentrations ranging from >0.078 ppm to 0.12 ppm, and should consume no more than 1 meal/month at concentrations ranging from >.47 ppm to 0.94 ppm" (Attachment 2, EPA Consumption Recommendations by PPM Level). These breakdowns are also found in the EPA's "Monthly Fish Consumption Limits for Noncarcinogenic Health Endpoint - Methylmercury." (Attachment \_\_????\_\_\_\_)

The EPA further sets forth that moderate-mercury fish with >0.12 -0.23 ppm be consumed once a week (four times a month) and fish with 0.23 - 0.31 ppm be consumed slightly less than once a week (three times a month) [4] (Attachment 2). The proposed FISH ADVISORY reflects this consumption limit on the "moderate"-mercury (or yellow-designated) portion of the chart, to be consumed only once a week.

Including the full range of seafood in this way, which THE REGULATORY AUTHORITY may expand by adding information about locally-caught noncommercial fish), will further enable members of the TARGET GROUP to accurately assess their overall mercury exposure to make better-informed decisions about which seafood to purchase at the grocery store. This expanded information will eliminate uncertainty among consumers in the TARGET GROUP and restore their confidence in the safety of seafood products. In the absence of this information, confusion might lead some consumers to otherwise avoid healthy seafood products.

Moreover, the proposed FISH ADVISORY communicates this information in the clear, easily-understood format of a color-coded chart. This method will quickly convey information to TARGET GROUP consumers and is supported by a study on the effectiveness of advisories, which showed that such red-yellow-green designations are a preferred format for communicating fish advisory information (Ujihara). Most importantly, the proposal gives consumers this information where they need it most, at the point of sale in the grocery store. With these changes, consumers within the TARGET GROUP can be confident that the seafood products they purchase are safe based on their individual consumption patterns.

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Notes:

[1] Several studies have estimated would lower the EPA Reference Dose level from 5.8 ug of mercury per liter of blood to 3.5 ug/L[1] (Stern and Smith 2003) and that 15.7% of women of childbearing age were found in the 1999-2001 NHANES study to exceed this level (NRC 2006, Mahaffey et al.2004, Trasande et al. 2005).

[2] Mercury Update: Impact on Fish Advisories (EPA 2001), found at: www.epa.gov/ost/fishadvice/mercupd.

[3] This category is technically not as protective as the EPA guidelines, since the proposal for the moderate-mercury category includes fish with 0.23-0.31 ppm of mercury, which the EPA recommends that the target group consume only three times a month, rather than the current proposal's higher, once per week recommendation.

[4] The instant FISH ADVISORY is not designed to establish the most protective mercury consumption advice, but simply to convey the current federal advice.

[5] Table 4-3 from US EPA, 2000, cited in 2004 EPA Derivation of Safe Fish Consumption Rate, National Noncommercial Fish Advisory.

**Recommended Solution: The Conference recommends...:**

that the Conference Chair send a letter to the FDA Commissioner to urge the following addition to the 2009 Food Code to require grocery stores to post a FISH ADVISORY for Women of Childbearing Age and Children (the "TARGET GROUP") to communicate to the TARGET GROUP:

1) the FDA-EPA 2004 Advisory recommendations ("Online Advisory", see Attachment 1);

2) EPA consumption recommendations for moderate and higher-mercury fish; and,

3) a chart displaying the relative mercury content of commercial seafood..

The specific proposed language to add **NEW** sections to the Model Food Code as follows:

**3-603.12 Seafood Methylmercury Disclosure for Consumption of Seafood Products by Women of Childbearing Age and Children.**

(A) GROCERY STORES shall post a commercial Fish Advisory to inform consumers of the recommended FDA-EPA consumption guidelines for Women of Childbearing Age (Under Age 45) and Children (collectively the "TARGET GROUP") and the relative amounts of methylmercury in various seafood species using written advisories and/or placards posted at the point of sale (the "FISH ADVISORY") as specified in paragraphs (B) - (F) of this section.

(B) CONTENT OF DISCLOSURE. The FISH ADVISORY shall contain the following primary components, conform to the format set forth below, and shall essentially follow the sample sign presented below in section (F).

(1) Title. The sign shall be entitled "FISH ADVISORY", depicted in bold 48-point font size and be immediately followed by the underlined heading "Women Under Age 45 and Children" in bold 36-point font size.

(2) Explanatory Information. Immediately below this title, the FISH ADVISORY must contain the following prefatory statement to explain the purpose and the intended TARGET GROUP. This statement, in large type (at least 20-point font size) for ease of visibility, shall state: "Seafood contains important nutrients, including Omega-3 fatty acids, but also contains mercury, which can be harmful to women and children."

(3) Key Consumption Limits. The sign shall then post the following key consumption recommendations by the FDA-EPA Joint Fish Advisory for the TARGET GROUP:

(a) The first statement, boxed and in at least 28-point font size, shall state the "DO NOT EAT" list of fish which includes the following high-mercury species: swordfish, shark, tilefish, and king mackerel.

(b) A second statement, boxed and in at least 17-point font size, shall state to the TARGET GROUP: "Limit albacore tuna to one, 6-ounce serving per week, and eat no other fish that week. Light canned tuna, however, may be eaten twice per week."

(4) Seafood Chart. Second, the FISH ADVISORY shall contain a simple, color-coded chart that groups seafood species by methylmercury content into three, easily-understood high, medium, and low categories. These three categories, separated into three columns, shall be correspondingly delineated by red, yellow and green color designations and by the accompanying consumption recommendations, as set forth below in paragraphs (a)-(c).

(a) Lower-Mercury Seafood:

(i) The first column on the chart shall list those species which contain 0.12 parts per million ("ppm") or less of methylmercury, according to FDA monitoring data or more recent data obtained by the REGULATORY AUTHORITY;

(ii) These species shall include, in ascending value of mercury content, fish that contain above 0.05% of market share and are listed on Table 2 of the FDA's information on Mercury Levels in Commercial Fish and Shellfish as "Fish and Shellfish With Lower Levels of Mercury" (at or below 0.12 ppm of methylmercury): shrimp, sardines, tilapia, clams/oysters, scallops/mussels, salmon, crayfish, freshwater trout, ocean perch/mullet, pollock, Atlantic mackerel, anchovy/herring, sole/flounder, crab, pike, butterfish, catfish, squid, Atlantic croaker, whitefish, Pacific mackerel/chub, smelt, cod, canned light tuna and spiny lobster;

(iii) The chart shall entitle this group "lower" mercury seafood, designate this category by a green color coding, and state that these fish should be eaten by the TARGET GROUP no more than 12-ounces per week.

(b) Moderate-Mercury Seafood:

(i) The second column on the chart shall list those species which contain 0.13 - 0.31 ppm of methylmercury, according to FDA monitoring data or more recent data obtained by the REGULATORY AUTHORITY;

(ii) These species shall include, in ascending value of mercury content: snapper, skate, freshwater perch, monkfish, halibut, sablefish, sea bass, sea trout, and American lobster;

(iii) The chart shall entitle this group "Moderate" mercury seafood, designate this category by a yellow color coding, and state the EPA Reference Dose advice that these fish should be eaten by the TARGET GROUP no more than one serving per week, with no other fish eaten that week.

(c) High-Mercury Seafood:

(i) The third column shall list those commercial seafood species which contain above 0.31 ppm of methylmercury, according to FDA monitoring data or more recent data obtained by the REGULATORY AUTHORITY, subject to section (iv) below.

(ii) These species shall include, in ascending value of mercury content: fresh/frozen tuna, Spanish mackerel (South Atlantic), Chilean bass, grouper, marlin, and orange roughy;

(iii) The chart shall entitle this group "High" mercury seafood, delineate this category by a red color coding, and label on the chart that the TARGET GROUP should "Avoid" these fish.

(iv) This "High" category shall exclude canned albacore tuna, given that the FISH ADVISORY set forth in this section specifies per paragraph (B)(3)(b) above that the TARGET GROUP may consume up to 6-ounces of albacore tuna. It shall also exclude the "DO NOT EAT" fish that are highlighted at the top of the FISH ADVISORY per paragraph (B)(3)(a) above.

(5) In addition to the provisions of paragraphs (B)(1)-(B)(3) above, the FISH ADVISORY shall generally follow the content and format set forth in section (F).

(C) LOCATION OF FISH ADVISORY. The FISH ADVISORY shall be posted in GROCERY STORES as follows:

(1) The FISH ADVISORY shall be displayed on a laminated, 8.5-inch by 11-inch sign or placard; and

(2) The FISH ADVISORY shall be displayed prominently at the point-of-sale, at or immediately adjacent to the specific location where the seafood is being sold, as close as reasonably possible to the seafood product.

(a) Disclosure for frozen SEAFOOD PRODUCTS shall be centrally affixed to the glass display case that contains the SEAFOOD PRODUCTS or, if there is no glass display case, otherwise in a prominent location within the display case that is clearly visible to consumers.

(b) Disclosure for SEAFOOD PRODUCTS sold at the fresh seafood counter in GROCERY STORES shall be displayed on the display case and also posted atop the seafood counter at the point-of-sale.

(c) Disclosure for canned or nonperishable, packaged SEAFOOD PRODUCTS shall be affixed prominently to the shelving or, if none, otherwise at or within two feet of the display area where they are located.

(D) DEFINITIONS.

(1) Under this section "SEAFOOD PRODUCT" shall be defined to include any food product offered for sale in a GROCERY STORE that contains two or more ounces of seafood per serving size.

(2) Under this section "GROCERY STORE" shall be defined in the normal sense of the word, to exclude retail FOOD ESTABLISHMENTS other than restaurants and other entities that sell "ready to eat" products.

(E) MODIFICATIONS. The REGULATORY AUTHORITY may modify the FISH ADVISORY in any of the following ways:

(1) To designate by an asterisk the seafood species that contain high Omega-3s;

(2) To add to the lists of high-, moderate-, or lower-mercury categories locally-caught fish from local lakes, streams, or coastal areas, so that consumers may more accurately assess their total mercury exposure when buying commercial seafood products;

(3) To add information on serving or portion sizes for children;

(4) To add a state contact phone number or state governmental website address for consumers to contact for more information concerning seafood consumption.

(5) To add other information that the REGULATORY AUTHORITY may reasonably deem important for the health of or seafood purchasing decisions of members of the TARGET GROUP.

(F) SAMPLE CHART. [See Attachment 7, Proposed Fish Advisory Chart]

**Submitter Information:**

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**Attachments:**

* "ONLINE ADVISORY, JOINT EPA-FDA FISH ADVISORY"
* "ATTACHMENT 2: EPA CONSUMPTION RECOMMENDATION BY PPM LEVEL"
* "ATTACHMENT 3: EPA, HEALTH EFFECTS"
* "ATTACHMENT 4: FDA FISH DATA"
* "ATTACHMENT 5: CDC, NHANES DATA ON MERCURY LEVELS EXCEEDING EPA RfD"
* "ATTACHMENT 6: REVIEW OF RECENT SCIENTIFIC STUDIES"
* "ATTACHMENT 7: PROPOSED FISH ADVISORY CHART"

It is the policy of the Conference for Food Protection to not accept Issues that would endorse a brand name or a commercial proprietary process.