NASEM Consensus Study

The Role of Seafood in Child Growth and Development

Presentation from Sponsors to Committee

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Federal Sponsor Representatives

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*Office of Research and Development, Office of Children's Health Protection, and Office of Environmental Justice and External Civil Rights also represented in the collaboration

Jon Bell, Director
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*Office of International Affairs and Seafood Inspection and National Sea Grant also represented in the collaboration

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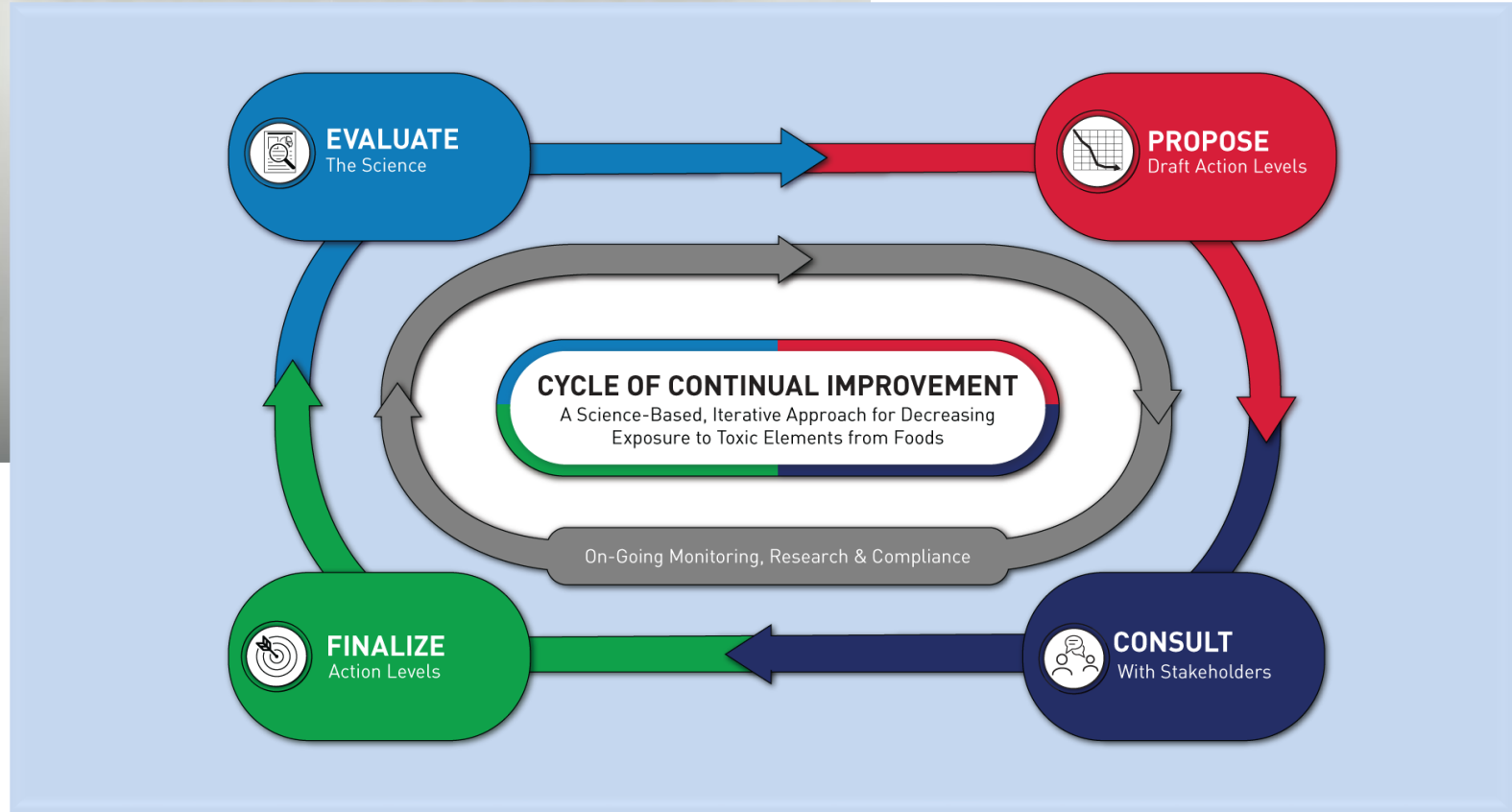
CLOSER TO ZERO

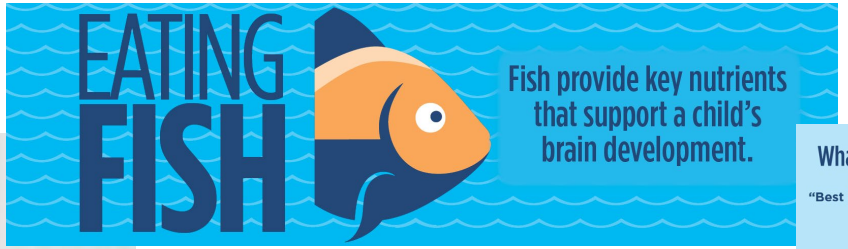


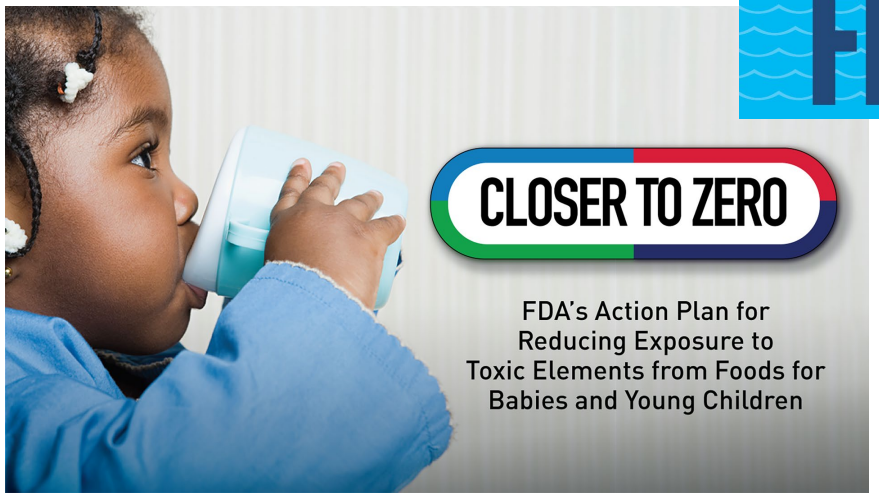
FDA U.S. FOOD & DRUG ADMINISTRATION

ADVICE ABOUT EATING FISH

For Those Who Might Become or Are Pregnant or Breastfeeding and Children Ages 1 – 11 Years

EPA United States Environmental Protection Agency



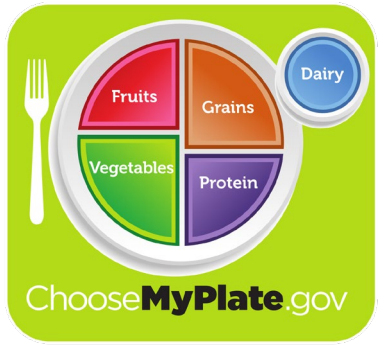


CLOSER TO ZERO

FDA's Action Plan for Reducing Exposure to Toxic Elements from Foods for Babies and Young Children

DGA Dietary Guidelines for Americans 2020 - 2025

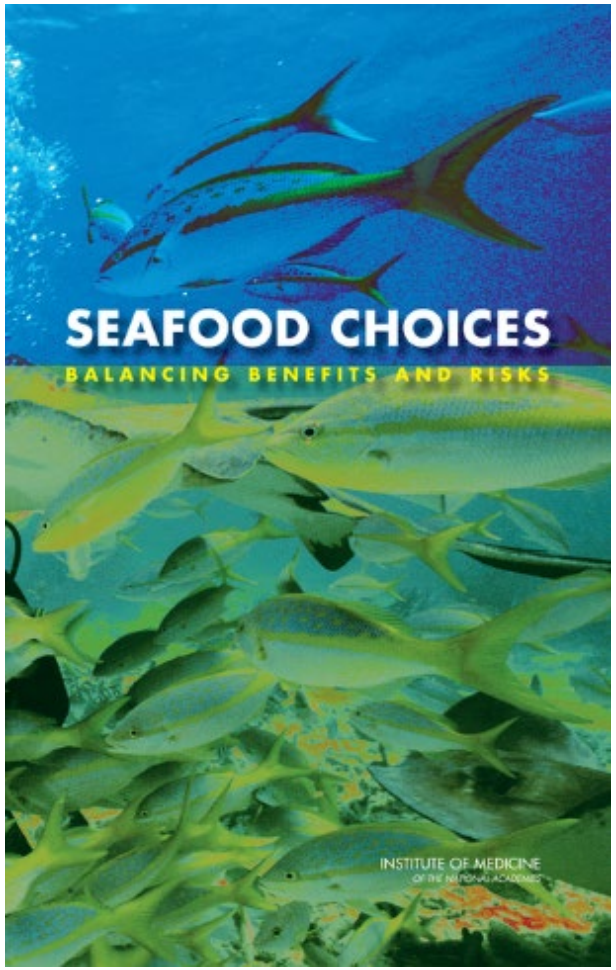
Make Every Bite Count With the *Dietary Guidelines*



USDA Food and Nutrition Service
U.S. DEPARTMENT OF AGRICULTURE

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION U.S. DEPARTMENT OF COMMERCE

2007 Seafood Choices
Balancing Benefits and Risks



Co-sponsors: NOAA, FDA, EPA

FDA/EPA's Evidence Scan

Purpose

To explore the potentially available evidence on seafood and health to inform the scope and tasks for a 3rd party systematic review and integration of that evidence from multiple disciplines and methodologies.

Review Questions

Protocol

- Search strategy
  - Review of existing search strategies
- Inclusion/exclusion criteria
- Screening protocol
- Extraction protocol

Summary of findings

NASEM Statement of Task

Scientific Review on Seafood and Child Growth and Development

- Consider existing sources of publicly available information on **dietary intake and nutrient and contaminant composition of seafood**.

- Gather information through from published peer-reviewed literature through **systematic reviews** and informed by consultation with additional expert in relevant fields as determined by the Committee.

- **Develop, execute, and document a research plan for conducting systematic reviews** of peer-reviewed literature to **answer scientific questions provided by the federal sponsors**.

Research Questions

Overarching question: What is the relationship between seafood consumption and child growth and development?

Answered through conclusions drawn on the following questions:

1. What is the **exposure** to nutrients and chemical contaminants from seafood before and during pregnancy, lactation, and childhood?
   - Are there **inequities** (i.e., differences due to social, economic, health, and environmental disadvantage) in nutrient and chemical contaminant exposures from seafood before and during pregnancy, lactation, and childhood?

2. What is the **relationship** between seafood consumption (exposures in Q1) during pregnancy, lactation, and childhood and growth and development in the child?
   - How does the relationship between seafood consumption during pregnancy, lactation, and during growth and development of the child **differ by social, economic, health, and/or environmental disadvantage** (e.g., race/ethnicity and income status, higher cumulative exposure to environmental stressors, pre-existing disease burden, etc.)?

3. What are the **biological mechanisms** of action (single actions, interactions, compound effects, and/or synergistic effects) of nutrients and chemical contaminants from seafood in the human body that relate to child growth and development?
   - How are biological mechanisms of action of nutrients and chemical contaminants from seafood **altered given social, economic, health, and/or environmental disadvantage**?

4. What **other evidence** on diet or other exposures should be considered within the context of conclusions (i.e, answers to questions 1-3) about the associations of seafood intake to child growth and development?
   - What other evidence on diet or other exposures related to **differences by social, economic, health, and/or environmental disadvantage** (e.g., race/ethnicity and income status, higher cumulative exposure to environmental stressors, pre-existing disease burden, etc.) should be considered within the context of conclusions (i.e, answers to questions 1-3) about the associations of seafood intake to child growth and development?

NASEM Statement of Task

Evidence Integration Methodology

Develop and implement an approach to integrate scientific evidence in a transparent way and draw conclusions

(quantitative and/or qualitative)

on seafood and child development.

Overarching Question

What is the relationship between seafood consumption and child growth and development?

Q1: Intake and Composition

Pregnancy: Conclusion (Grade)
Lactation: Conclusion (Grade)
Childhood: Conclusion (Grade)

Q2: Exposure on Outcomes

Pregnancy:
Outcome A: Conclusion (Grade)
Outcome X: Conclusion (Grade)
Lactation:
Outcome A: Conclusion (Grade)
Outcome X: Conclusion (Grade)
Childhood:
Outcome A: Conclusion (Grade)
Outcome B: Conclusion (Grade)
Outcome C: Conclusion (Grade)
Outcome D: Conclusion (Grade)
Outcome X: Conclusion (Grade)

Overarching Conclusions

Q3: Mechanisms of Action

Toxicology:
Tox A Outcomes: Conclusion (Grade)
Tox B Outcomes: Conclusion (Grade)
Tox X Outcomes: Conclusion (Grade)
Nutrition:
Nutr A Outcomes: Conclusion (Grade)
Nutr B Outcomes: Conclusion (Grade)
Nutr X Outcomes: Conclusion (Grade)
Interactions:
Tox A Nutr A: Conclusion (Grade)
Tox A Nutr B: Conclusion (Grade)
Tox B Nutr A: Conclusion (Grade)
Tox X Nutr X: Conclusion (Grade)

Q4: Other Considerations

Pregnancy:
TBD
Lactation:
TBD
Childhood:
TBD

NASEM Statement of Task

Evidence Integration Methodology

- *Not to conduct a quantitative Risk Benefit Analysis (RBA) – but to* evaluate **when to or not to conduct a formal RBA**,
  - How to assess quality and uncertainty of an RBA;
  - Provide risk managers scientific information and principles that can serve as a foundation to evaluate confidence in the potential conclusions of an RBA; and
  - Identify additional context that is additive to the findings of an RBA for the purpose of assessing implications/applications capable of informing policy decisions by decision makers

Questions?

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