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# Bisphenol A (BPA) and Metal Packaging

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**June 9, 2010**

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# Discussion Topics

- Food Safety
- Evaluations of BPA
- Research into Alternative Options
- Regulatory Issues



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# Food Safety

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**Metal Packaging Plays Critical Role in  
Ensuring Food Safety**

# Food Safety

- **Food-borne Bacteria Kills 5,000 Annually**
  - According to the Centers for Disease Control and Prevention (CDC), 5,000 people die in the U.S. each year due to food hazards and over 350,000 are hospitalized for food-borne illness
  
- **Costly Impact of Food-borne Illness**
  - The economic impact of food-borne illness averages \$1,850 per U.S. citizen each year according to a recent (March 3, 2010) Pew Research report

# Metal Packaging Plays Critical Role in Ensuring Food Safety

- Enables high temperature sterilization of food products when initially packaged
- Resistant to the wide range of chemistries found in food and beverage products
  - Eliminates interactions between the metal package and the food contents
  - Prevents perforation defects that would allow bacteria and microorganisms to enter and grow
- Protects food quality and nutrition

**There has not been an incidence of food-borne illness resulting from a failure of metal packaging in more than 30 years**

**Metal cans protect human health by reducing the potential for serious illness**

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# Fundamentals of Food Packaging and Chemistry

- Every material that contacts food migrates some level of that food contact material into the food



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# Evaluations of BPA

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Safety of BPA in Food Applications  
Government Agency Conclusions

# Safety of BPA in Food Applications

## Government Agency Conclusions

- **California Developmental and Reproductive Toxicant Identification Committee (July 2009)**
  - Panel's unanimous vote not to include BPA on Prop 65 listing based on conclusion that BPA is not a developmental or reproductive toxicant
- **Health Canada (June 2010, July 2009, March 2009, October 2008)**
  - General public need not be concerned by the potential exposure to BPA from its use in food packaging applications, including can lining

# Safety of BPA in Food Applications

## Government Agency Conclusions (cont'd)

- **Food Standards Australia New Zealand (March 2009)**
  - BPA does not cause cancer nor do low levels of exposure to BPA pose a significant health risk
- **German Federal Institute for Risk Assessment (2008)**
  - In an evaluation of new studies, BfR determined the studies provided no valid basis for any change to the present BPA risk assessment and again concluded that BPA as currently used in food and beverage packaging is safe

# Safety of BPA in Food Applications

## Government Agency Conclusions (cont'd)

- **European Food Safety Authority (2008)**
  - Reaffirmed its 2006 conclusion that the strength of the scientific database supports a five-fold increase in the TDI (Tolerable Daily Intake). This full TDI recommendation translates to a BPA-specific migration limit of 3 mg/kg/food (3,000 ppb)
  - Concluded that the differences in age-dependent toxicokinetics of BPA in animals and humans would have no implication for its original findings

# Safety of BPA in Food Applications

## Government Agency Conclusions (cont'd)

### ■ **U.S. Food and Drug Administration (2010)**

- ❑ Reported that large body of evidence indicates FDA-regulated products containing BPA are safe
- ❑ Exposure levels to BPA from food contact materials, including for infants and children, are below those that may cause health effects
- ❑ FDA has aligned its assessment with NIEHS that more research is needed on specific end effects
- ❑ No regulatory action taken



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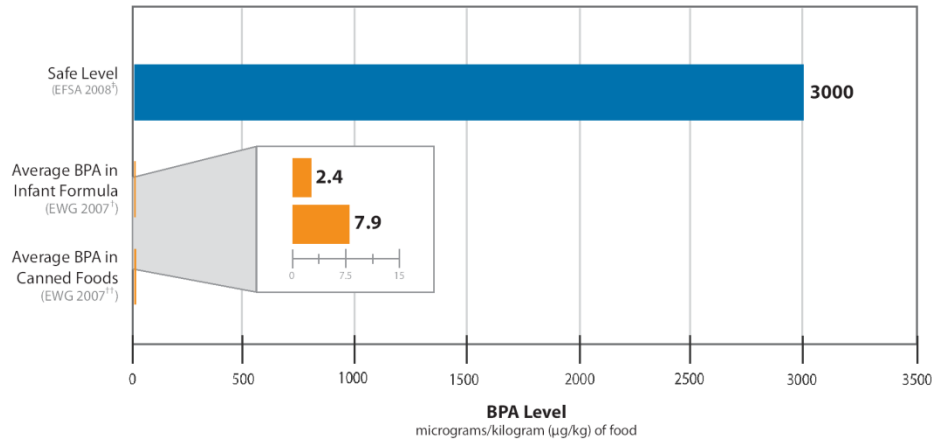
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# Exposure Levels Today

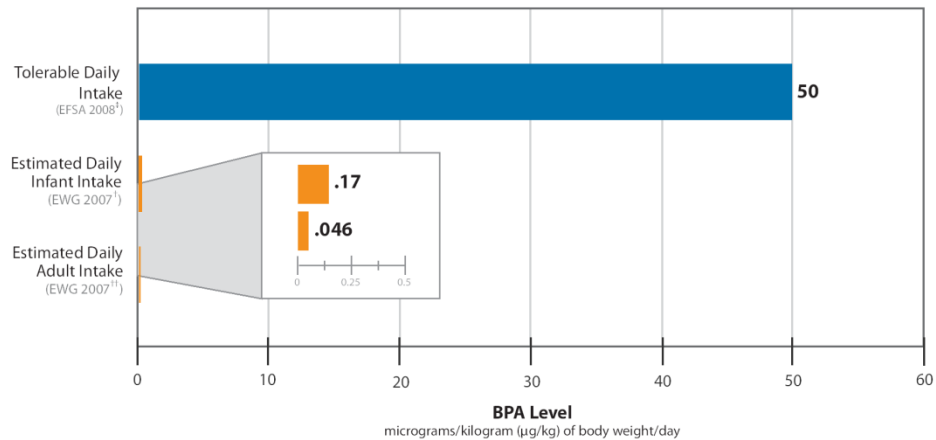
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# Food Content Levels Do Not Equal Human Exposure Levels

**BPA Food Content Levels**



**BPA Human Exposure Levels**



<sup>1</sup>EFSA (European Food Safety Authority) July 2008. Toxicokinetics of Bisphenol A - Scientific Opinion of the Panel on Food additives, Flavourings, Processing aids and Materials in Contact with Food (AFC).

<sup>2</sup>EWG (Environmental Working Group) August 2007. Toxic Plastics Chemical in Infant Formula.

<sup>3</sup>EWG (Environmental Working Group) March 2007. Bisphenol A: Toxic Plastics Chemical in Canned Food.



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# Research into *Alternative* Options

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Alternatives Research Underway to  
Address Public Perception of Concern --  
but No Readily Available Alternatives

# Current Publicized Alternatives

## ■ Baked-on oleoresinous enamel

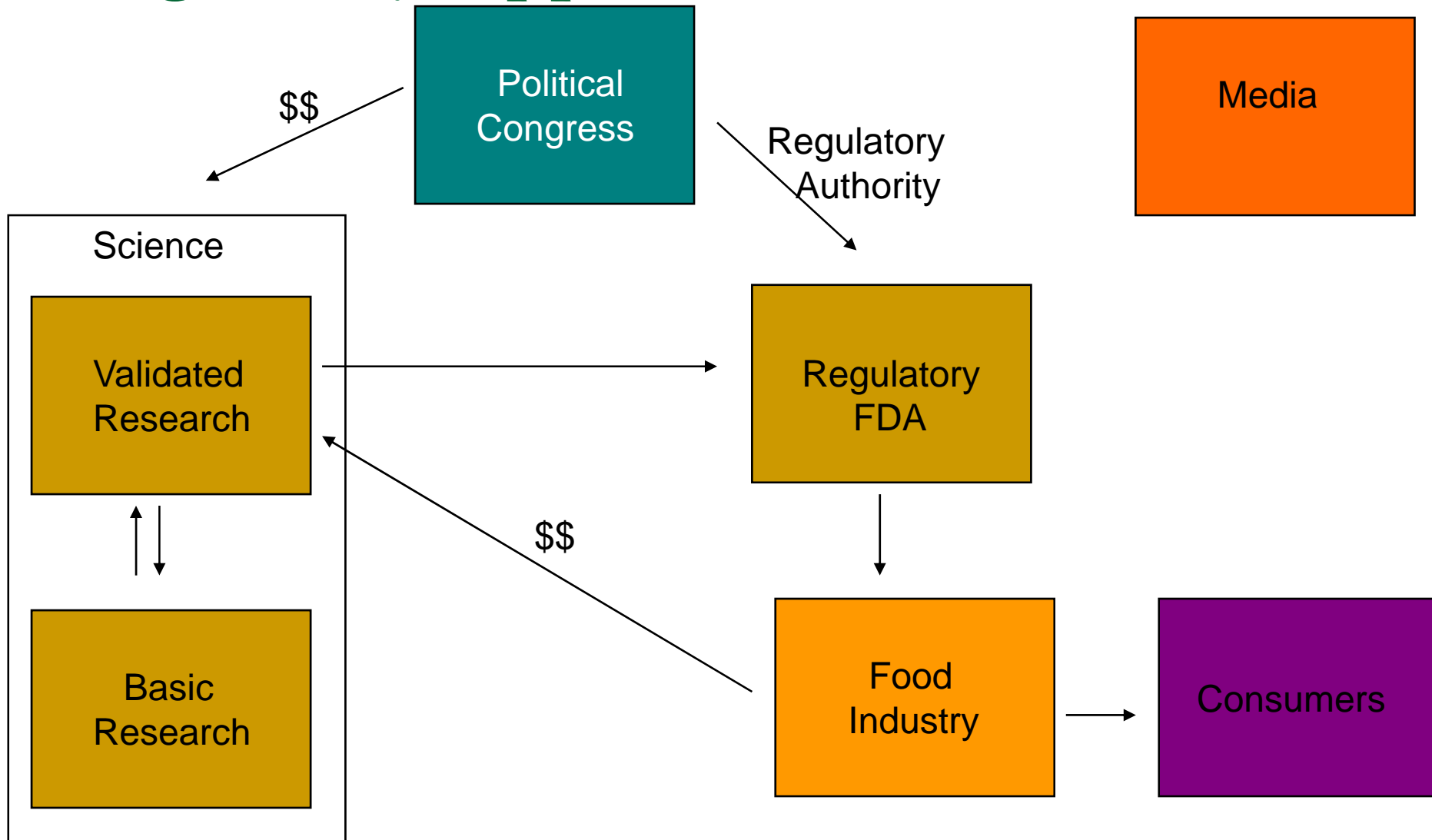
- Currently only used for dried beans, some other vegetables
- Not viable for most food or beverage items
- Represents extremely small fraction of the overall canned vegetable market
- Sacrifices shelf life and organoleptic properties of food

## ■ Polyethylene terephthalate (PET) laminate technology

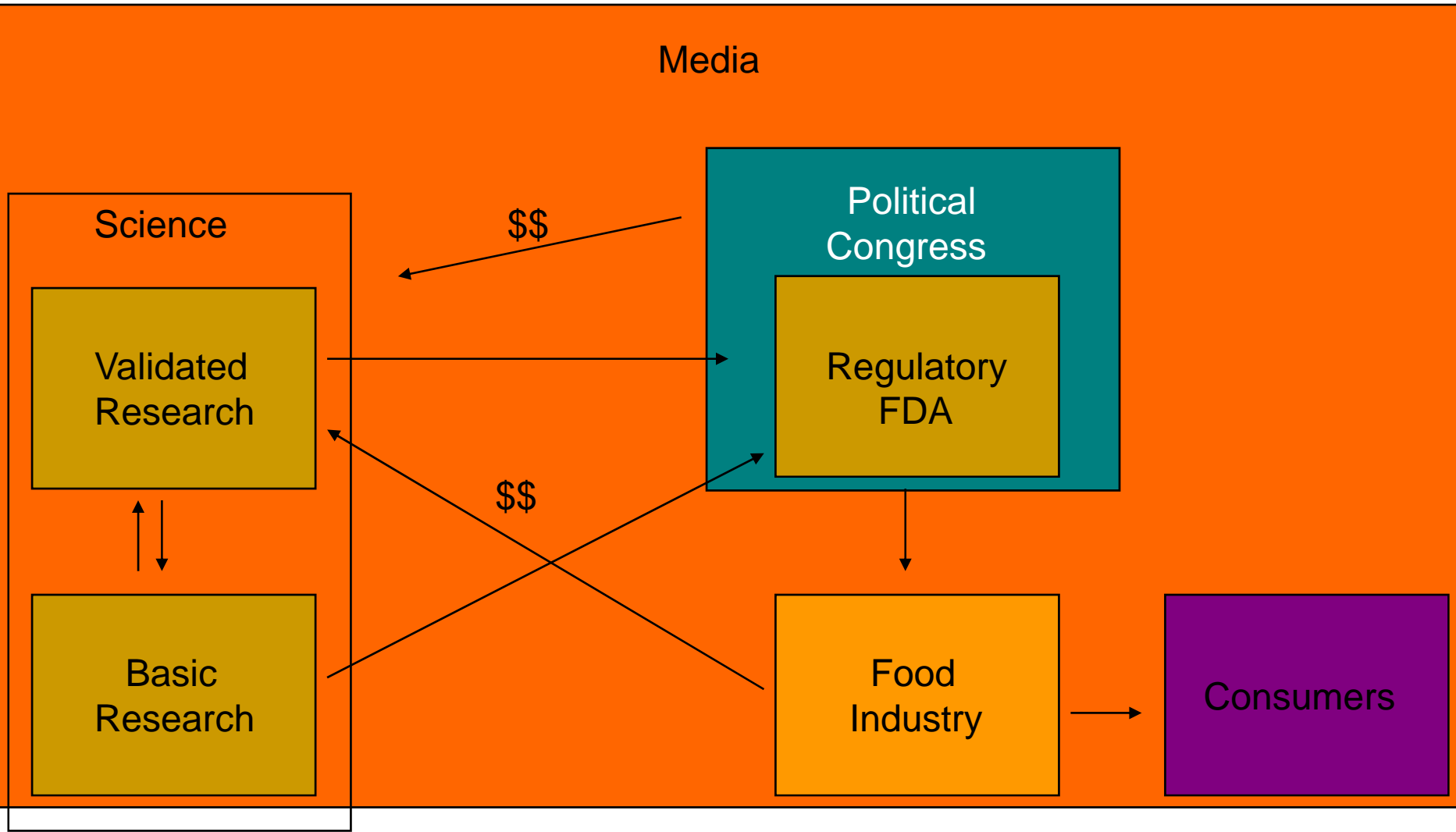
- Application of PET plastic inside the metal container
- Used in Japan, primarily for hot beverage containers
- About 40% of the food can market in Japan uses the PET laminate technology
  - Significant portion of that 40% still requires the use of an epoxy coating as an adhesive to hold the laminate on the metal

**There is no readily available, suitable alternative to BPA-based can coatings that meets the essential safety and performance requirements for the broadest spectrum of foods now packaged in metal containers**

# Regulatory Approach - Traditional



# Regulatory Approach - BPA



# FDA or U.S. Congress Makes Safety Decisions?

- Sen. Feinstein has stated that she intends to propose amendments to S. 510 banning uses of BPA in food contact
- FDA stated on January 2010:
  - “If we thought BPA was unsafe we would be taking steps to restrict it”
- Health Canada – June 2010
  - “The results of this survey confirm that exposure to BPA from canned food products is very low and poses no health or safety concerns to the general population”

# How Is Issue Being Driven by Media?

- No Silver Lining Report on BPA in Canned Foods
  - Conclusion: “It shows that meals involving one or more cans of food can cause a pregnant woman to ingest levels of BPA that have been shown to cause health effects in developing fetuses in laboratory animal studies”
- Media Coverage – 93
  - Business Week, USA Today
- Health Canada Report on BPA in Canned Foods
  - Conclusion: “[T]hat current dietary exposure to BPA through food packaging is not expected to pose a health risk to the general population, including newborns and infants”
- Media Coverage – 7
  - Mostly Trade Journals