Translating and Communicating Arsenic Science: Arsenic and You

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www.ArsenicandYou.org
RESEARCH TRANSLATION TENETS:

- PLAN AHEAD
- KNOW YOUR AUDIENCE
- BE FLEXIBLE
- EVALUATE
Facilitating the application of our research:

1. Government Partners and Policymakers

2. Scientific and Health Care Professionals

3. Communities Affected by Exposures to Arsenic and Mercury
New Hampshire: “The Arsenic State”

Model-predicted probabilities of arsenic concentrations in groundwater from bedrock aquifers at 1, 5 and 10 PPB.
Arsenic in Food = Global Problem

• Arsenic policy and regulation → drinking water.

• Food is a larger source of arsenic exposure for populations where H2o does not exceed WHO recommended standard.

• Arsenic exposure through food more widespread, and may pose greater risk to sensitive populations.

• There are currently no statutory limits for the arsenic content of food sold in the United States and the European Union.

• Collaborative on Food with Arsenic and associated Risk and Regulation – C-FARR

http://www.sciencedirect.com/science/journal/00489697/vsi/10QR6CV0V78?sf78156575=1
How do you communicate and translate arsenic risk to populations in the U.S.?

- Arsenic: odorless, colorless, tasteless
- The MCL is 10 ppb, but 0 is the Goal…
- You might get cancer down the road
- LOW PERCEIVED RISK OF HARM

It takes a village…
and communication over time
Effective Communication with the Public

Source: Communicating the Science of Climate Change, Somerville and Hassol, 2011
Arsenic and You

Development Process

- Research - What was already online?
- Established Project Advisory Team
- Contracted with Community Health Institute for Focus Groups and User Testing
- CDC Health Literacy Online – text placement, use of graphics, bolding and italics…
- Health Literacy Text Review
AUDIENCE

Primary: Families/Caregivers/Households
Secondary: Vulnerable populations

WEBSITE GOALS:

• Centralized, comprehensive, web-based information tool for the public on sources, exposures, and effects of arsenic;

• Be a trusted resource;

• Tie together resources from a range of institutions;

• Help visitors understand the holistic context of arsenic in the environment and make informed lifestyle decisions to reduce their exposure and improve long-term health.
What We Learned

- Reached edge of known As science—Emerging Scientific Evidence
- Messaging must be nuanced to find Balance between risk and benefit - food in particular …like Hg in Fish
- Health Literacy experts can change the scientific information!
- Scientists can miss the importance of simple language
- Lots of public misconceptions
- Public wants actions and guidelines rating exposures
- Small words matter—Everyone Vs. Anyone – Yes Vs. It Depends
- Many people view public health websites on their phone
**Arsenic and You** provides users with:

- a centralized web-based information resource for families, caregivers and vulnerable populations;
- easy access on mobile devices and tablets;
- recommendations to reduce arsenic exposure;
- resource links for helpful tools, videos and more detailed information.
INTRODUCING

www.ArsenicandYou.org

Centralized web-based information resource for families, caregivers, and vulnerable populations.

Recommendations to reduce arsenic exposure.

Resource links for helpful tools, videos and more detailed information.

Informed by the most current research; vetted by scientists and experts in the field.

Easy access on mobile devices and tablets.
Welcome to Arsenic and You

We hope this website answers your questions about arsenic. It includes comprehensive information on arsenic in food, water and other sources. Our goal is to help you lower your exposure to this toxic metal and improve your family’s long term health.

- Exposure
- Health Effects
- Children
- Gluten Free
- Testing
- Treatment
- Rice
- Fruits, Juices & Vegetables
- Seafood
- Beer & Wine
- Meat & Animal Products
- Pressure-Treated Wood
- Smoking
- High Risk Locations
- Information & Resource Links
- What You Can Do
- Definitions
- Literature
- For More Information
Arsenic is a greater concern for children since they eat about 3x more food per pound of body weight than adults.

Lowering your arsenic exposure now could improve your long-term health.
What health problems can arsenic cause?

Arsenic is linked to many health problems, such as:

• Bladder, Lung and Skin cancer
• Heart and Lung disease
• Diabetes
• Lower immune function
• Poor brain function in children
• Skin lesions

Who can get sick from arsenic?

Anyone can be harmed by arsenic including:
• Adults
• Pregnant mothers
• Children, Babies, Unborn babies
WHAT YOU CAN DO

Diet Choices

• When you can, choose lower arsenic types of rice. White rice is lower in arsenic than brown rice, but it is also lower in fiber and vitamins.

• Check to see where your rice is grown. Look for rice from regions that have rice lower in arsenic. White basmati rice from California, India, and Pakistan, and sushi rice from the U.S. may have less arsenic than other types of rice.

• Vary your grains, especially if rice is a big part of your diet. Consider lower-arsenic grains such as amaranth, quinoa, bulgur and farro.

• Check the labels on the snacks you like to see if they are made with rice, rice flour, or rice syrup. If they are, try to find new snack options that don't have rice in them.
Should you be concerned about arsenic in rice?

**It depends.** Rice is healthy, doesn't cost much, is in many dishes and is an important part of many traditional diets. But it can also have high amounts of arsenic. Like other people in the U.S., you might be eating a lot of rice or having it often. If you or someone in your family has special dietary needs, you probably eat even more rice in rice products, such as:

**Expert Quote:**
"Take action to reduce arsenic if you're a pregnant woman, or have kids. Arsenic is harmful to child growth, development and brain function. Kids consume more food and water per pound of body weight, so they are more likely than other age groups to be exposed to too much arsenic."
*Dr. Carolyn Murray, Dartmouth College*

**Disclaimer:**
This information, based on current scientific knowledge, includes evidence-based recommendations to help you reduce your exposure to arsenic. While some may not be appropriate or possible for everyone, follow the suggestions that make sense for you. Any step taken to reduce exposure to arsenic makes a difference in lowering your chances of arsenic-related health risks.
Where do we go from here?

EVALUATE

• Evaluation, distribution & promotion

• Periodic updates
  • Add more infographics
  • Update science
  • Add testimonials
  • Shorten certain pages
A Few Questions for You!

• How easy is it for you to find the site on your phone?
  www.ArsenicandYou.org

• Would you be likely to use this site on your phone?
  • If so, why and where?

• What are the questions about arsenic you would like to look up on this site?
• Striking the balance between informing and scaring…
  • Where do you think it should be?

• Do you agree with Bottom Line first – Supporting Info last – for a website of this type?
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<th>Anatomy</th>
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A detailed look at arsenic in rice

Illustration by Tracy Punshon, Ph.D.
The toxicity of arsenic is a function of its chemical form (‘species’)

- **Inorganic Arsenic**
  - Arsenite (3 chemical bonds)
  - Arsenate (5 chemical bonds)

- **Organic Arsenic**
  - Monomethylarsonic acid: MMA
  - Dimethylarsinic acid: DMA
  - Arsenobetaine; AsB
  - Arsenosugars
  - Arsenolipids

Graphic by Tracy Punshon, Ph.D.
• Please fill out the website survey

• HELP US GET THE WORD OUT!!
  • Link to the site
  • Put the link & information about it in your enewsletters or on your listservs
  • Tell your friends and family

• Handouts and MAGNETS available!
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Questions?

Arsenic and You
Information on Arsenic in Food, Water & Other Sources

www.dartmouth.edu/~arsenicandyou
Produced by the Dartmouth Toxic Metals Superfund Research Program

Magnets available!!