

Reflections and Recommendations from the Alaska Children's Environmental Health Summit

December 14, 2016
CHE-AK Teleconference



**Collaborative on
Health and the
Environment**

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“Pollution kills almost 3 times more people than HIV, malaria and tuberculosis combined....”

report by 
GLOBAL ALLIANCE ON
HEALTH AND POLLUTION



**Collaborative on
Health and the
Environment**

The Collaborative on
Health and the
Environment (CHE)
works with 1000s of partners
globally to prevent pollution
and improve health.

A program of Commonweal

www.healthandenvironment.org



Collaborative on
Health and the
Environment

CHE's work is based on a systems or ecological approach to health.

We foster a vibrant global learning community to discuss the latest science and promote prevention.



Some Results of CHE's Collaborative Work

- Scientific consensus statements that have advanced research on environmental links to a wide range of diseases and disabilities;
- The first major academic program in the US on reproductive health and the environment;
- A hard-hitting report from the President's Cancer Panel on links between toxic exposures and cancer;
- National learning and developmental disabilities organizations becoming influential voices in reducing exposures to toxic chemicals;
- An award-winning eBook on multiple contributors to specific health outcomes, *A Story of Health*;
- and much more....

We just launched our new web site!

The screenshot shows the homepage of the Collaborative on Health and the Environment website. The browser address bar displays "healthandenvironment.org". The navigation menu includes "HOME", "JOIN", "DONATE", "CONTACT", and "SEARCH". The main navigation links are "What We Know", "What We Do", "Engage", "About", and "How to Donate". The page features three main content areas, each with an image and a "See more" link.

Collaborative on Health and the Environment

HOME JOIN DONATE CONTACT SEARCH

What We Know What We Do Engage About How to Donate

What We Know
Learn more about the latest science on environmental contributors linked to a wide range of health problems as well as prevention-oriented efforts to address these concerns.
[See more](#)

What We Do
Participate in our multiple educational forums that foster science-based discussions and collaborations that promote human and ecological health.
[See more](#)

Engage
Join a global network of researchers, health professionals, health advocates, and others who are committed to promoting a healthy, just and sustainable future for all.
[See more](#)



YOU ARE HERE: Home > What We Know > Environmental Contributors > Socioeconomic Environment

Socioeconomic Environment

Related CHE Calls

April 27, 2016
CHE Partnership call: The Ecology of Breast Cancer: Opportunities for Prevention

February 5, 2016
Environmental Health Disparities in Children: Breaking the Cycle and Building Resilience for Better Health

December 11, 2015
Environmental Health and Complexity: Exploring the Ecological Model of Health

[See all related calls](#)

Related News

November 8, 2016
[ZNA: could your ZIP code at birth predict your health?](#)

November 7, 2016
[Life on the Pine Ridge Native American reservation](#)



image from Alexandra Stevenson at Creative Commons

Our "environment" includes both social and physical determinants of health. Social impacts on health are embedded in the broader environment and shaped by complex relationships between economic systems and social structures. These systems and structures impact the distribution of resources, money, and power around the world. This distribution, known as

Environmental Contributors

- Chemical Environment
- Food and Agriculture Environment
- Built Environment
- Psychosocial Environment
- Socioeconomic Environment
- Global Environment
- Technological Environment

On This Page

- Poverty
- Health Impacts of Socioeconomic Status
- Multiple Risks

ScienceServes
Cumulative Impacts

Blog Posts

[CHE Blog posts related to the socioeconomic environment](#)
[CHE Blog posts on health disparities](#)



Chemical Environment

Related CHE Calls

November 29, 2016

[Chemical Contributors to Type 2 Diabetes](#)

October 27, 2016

[Innovative Approaches to Breast Cancer Prevention and Screening](#)

October 26, 2016

[Endocrine Disruption at the Top of the World: State of the Science with a Message from Alaska](#)

[See all related calls](#)

Related News

November 1, 2016

[The huge environmental costs of salmon farms in South America.](#)

November 1, 2016

[TIMELINE-Seven decades of efforts to eradicate malaria.](#)

November 1, 2016

[Institutes in the lead:](#)

[Identifying and Prioritizing Environmental](#)



image from Freaktography at Creative Commons

Chemicals are of course all around us and in us: everything in the universe, including the human body, is made of chemicals.

Some chemicals, however, can undermine human health and development. Concerns about certain chemicals, such as arsenic, lead and mercury go back millennia. Other naturally occurring chemicals, such as asbestos, have raised concerns more recently because they are used in materials and products in ways that increase human exposure and can lead to health

Environmental Contributors

■ Chemical Environment

- Alcohol
- Arsenic
- Asbestos
- BPA
- Dioxins
- EDCs
- Flame Retardants
- Fluoride
- Green Chemistry
- Lead
- Mercury
- Metals
- PCBs
- PFCs
- Pesticides
- Pharmaceuticals
- Plastics
- POPs
- Solvents
- Food and Agriculture Environment
- Built Environment
- Psychosocial Environment



YOU ARE HERE: Home > What We Know > Health, Diseases & Disabilities > Reproductive Health

Reproductive Health Research and Resources

Related CHE Calls

October 19, 2016

[EDCs: Recent Findings on the Role of BPA and Brain Development](#)

July 20, 2016

[Protecting Alaska's Children from Neurodevelopmental Harm: Project TENDR's New Consensus Statement on the Environmental Chemicals Contributing to Neurodevelopmental Disabilities](#)

June 7, 2016

[Exploring Multifactorial Contributors to Disease Outcomes: The Possible Role of Acetaminophen in Asthma and Autism](#)

[See all related calls](#)



image from Andy445 at iStock

Related News

November 3, 2016

[Mothers' nutrition pivotal for healthy child growth - study.](#)

In considering reproductive health, we focus especially on exposures to environmental contaminants, particularly during critical periods of development. We also note other important factors that can influence reproductive health outcomes, such as [nutrition](#) and [stress](#).

Health, Diseases & Disabilities

- Asthma
- Autism
- Autoimmune Disorders
- Birth Defects
- Cancer
- Cardiovascular Disease
- Diabetes
- Learning and Developmental Disabilities
- Mental Health
- Microbiome
- Neurodegenerative Diseases
- Obesity
- **Reproductive Health**
- Your Health

On This Page

- Environmental Contributors
- Timing of Exposures
- Genetics and Infertility
- Pregnancy and the Environment
- Pregnancy Complications
- Issues in Fertility and Sexual Health



YOU ARE HERE: [Home](#) > [What We Know](#) > [Health, Diseases & Disabilities](#) > [Learning and Developmental Disabilities](#)

Learning and Developmental Disabilities Research and Resources

Related CHE Calls

October 19, 2016
[EDCs: Recent Findings on the Role of BPA and Brain Development](#)

July 20, 2016
[Protecting Alaska's Children from Neurodevelopmental Harm: Project TENDR's New Consensus Statement on the Environmental Chemicals Contributing to Neurodevelopmental Disabilities](#)

April 6, 2016
[CHE Partnership call: Toxic Safety: Flame Retardants, Chemical Controversies, and Environmental Health](#)

[See all related calls](#)

Related News

November 8, 2016
[Indian government declares Delhi air pollution an emergency.](#)

November 7, 2016



Image from US Pacific Fleet at Creative Commons: Engineman 1st Class Floyd Johnson draws a picture with a child during a Community Service (COMSERV) event at the Bukit Harapan Children's Home, a nonprofit organization that houses mentally and physically disabled children who have been orphaned, abandoned due to their disabilities, or come from unstable family backgrounds.

Developmental disabilities (DD) are broadly defined as severe, chronic conditions due to mental and/or physical impairments that develop by the age of 22.² According to [The Developmental](#)

Common developmental disorders and disabilities, with some conditions and classifications overlapping.¹

Health, Diseases & Disabilities

- [Asthma](#)
- [Autism](#)
- [Autoimmune Disorders](#)
- [Birth Defects](#)
- [Cancer](#)
- [Cardiovascular Disease](#)
- [Diabetes](#)
- **Learning and Developmental Disabilities**
- [Mental Health](#)
- [Microbiome](#)
- [Neurodegenerative Diseases](#)
- [Obesity](#)
- [Reproductive Health](#)
- [Your Health](#)

On This Page

- [Prevalence](#)
- [Causes and Contributors](#)
- [Specific Disorders and Conditions](#)
- [Legal History: United States](#)
- [Ethical, Historical and Social Issues](#)

SAN FRANCISCO MEDICINE

JOURNAL OF THE SAN FRANCISCO MEDICAL SOCIETY

ENVIRONMENTAL HEALTH FROM CLINIC TO COMMUNITY

Environmental
Health Literacy

Endocrine Disruption

Climate Change
and Physicians

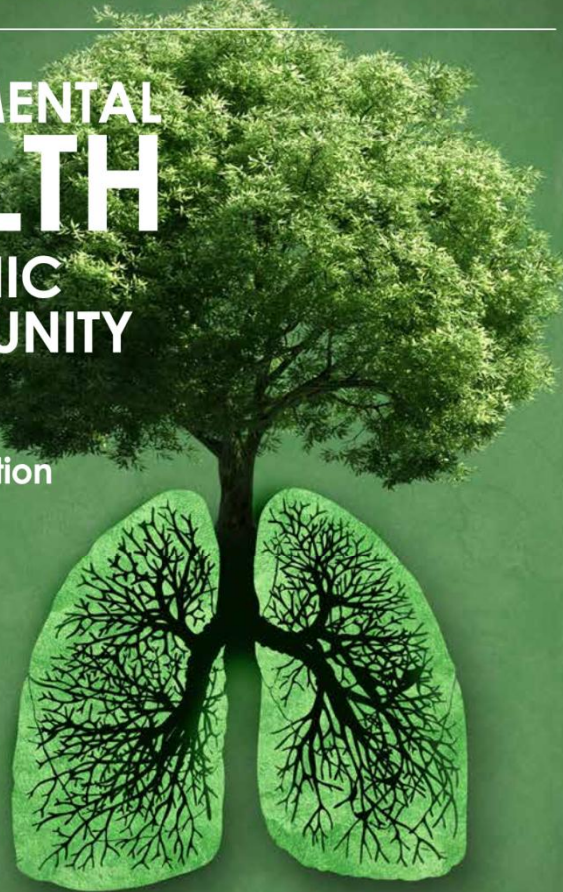
Pesticides, Food and Agriculture

Nuclear Weapons

Obesogens

Neurodevelopment

Tobacco



VOL.89 NO.10 December 2016

Over 60 publications,
for researchers,
health professionals,
decision-makers and
consumers to better
understand new
research and to utilize
in prevention-
oriented actions

NEW!

Using storytelling to translate science for health promotion, disease prevention

The Power of Personal Stories:

Case-based learning has long been used in medical education. Our eBook grounds the science of health in stories of fictional people, their families, and communities to enable readers to explore the collection of risk factors for increasingly common illnesses that are a serious problem for the health of our nation.

Examples:

"Brett is a nine year old boy who lives with his mother in an urban area. Like many children, Brett suffers from asthma..."

A Story of Health

A Multi-media eBook



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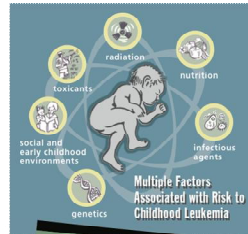
This poster was supported by the American College of Medical Toxicology and funded in part by the cooperative agreement from the Agency for Toxic Substances and Disease Registry (ATSDR). It was also made possible by U.S. Environmental Protection Agency (US EPA) grant R0603451101 and National Institute for Environmental Health Sciences (NIH/NIH) grant P01ES018172 and the California EPA/CEHHA. Its contents are solely the responsibility of the grantee and do not necessarily represent the official views of the US EPA, OEHHA, NIEHS, or ATSDR, nor do they endorse the purchase of any commercial products or services mentioned in the poster.

Using the setting of a family reunion as a backdrop, we explore how multiple environments influence our health across the lifespan.



"Stephen is a 3-year-old boy in treatment for childhood leukemia..."

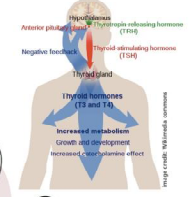
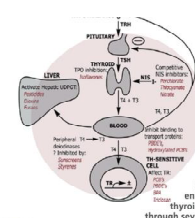
Early life exposures contribute to lifelong effects



"Amelia is a 13-year-old. Like one in six young people in America, Amelia has a developmental disability..."



PRENATAL HEALTHY CARE A Rationale for Thyroid Screening Before or During Pregnancy



Thyroid disruption technical diagram

Adequate levels of thyroid hormone are necessary for normal brain development. Some environmental chemicals can disrupt thyroid hormone levels and function through several mechanisms.

Although not an exhaustive account, the eBook is a presentation of current scientific evidence to help readers make informed decisions and take actions to promote health.

Gene-environment interactions, such as in this example from the asthma story, can have dramatic effects.

Genetics Increase Susceptibility to Air Pollution

- 1) Variation in one gene, retinoid dehydrogenase (RDH10) is associated with 30% increase in asthma risk. **increases by half**
- 2) The combination of having two high risk variants, RDH10 and G20190T's Tumor necrosis factor 3 (TNF3) variant results in a four-fold increase in risk. **increases 4 fold**
- 3) For children with both high risk variants (RDH10 and G20190T) who live close to a major roadway, the risk is increased 9-fold. **increases 9-fold**

Stress-environment interactions:

"...For example, prenatal and early life exposure to social stressors, such as violence, can increase the risk of asthma as well as increase the impacts on respiratory health from allergens, air pollution, and tobacco smoke."

Stress affects our health. Watch this video by Dr. Rosalind Wright to see how social stressors, along with environmental factors, can be linked to asthma. (5 min.)

Multiple factors influence health

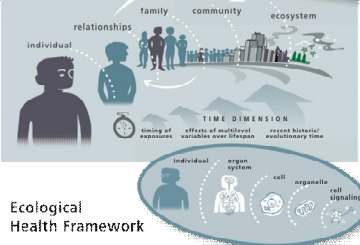
Our individual stories highlight the many ways our health is influenced by the complex environments where we live, eat, work, exercise, gather and socialize.



Individuals and families are progressively nested within communities, societies, cultures, and ecosystems. Each of these levels has significant influences on the others.

In many instances, each can influence levels of healthy or harmful biologic markers, such as inflammatory mediators or stress hormones, that can be measured in people's blood.

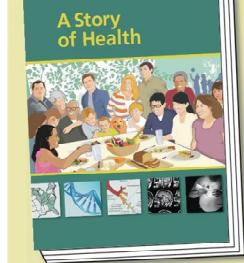
We call this an ECOLOGICAL FRAMEWORK because it recognizes the contribution of each level to the health status of individuals, families, communities, ecosystems.



Ecological Health Framework

The ecological health framework also extends to the sub-cellular level.

About the eBook:



An interactive document with multiple chapters features prompts for embedded information and links to online resources.

Finally, a resource that clearly explains the multiple factors that influence our health across the lifespan – the natural, built, chemical, food, economic, and social environments – and how they interact with genetics and each other.

A Story of Health is the first installment of a new eBook on how to promote health and prevent disease.

Pop-up graphics and rollover functions reveal key concepts, relevant graphics and links to videos presented by researchers – in-depth information for clinicians.

- key concept
- watch a video
- additional resources, tools
- technical details for health professionals
- skip this section
- definition

A Story of Health is written by health experts with content relevant to a wide audience, from clinicians, to health advocates, to policy makers.

The stories are accessible to an educated lay audience with more technical sections for scientists and medical professionals who can access free continuing education credits through the eBook.



Our goal: Improve the health of individuals, families, communities and patients.

Watch: Dr. Mark Miller discusses the Barker hypothesis (1:40 min.)

Download A Story of Health at www.healthandenvironment.org/resources/story_of_health

Acknowledgements

A Story of Health is a collaboration among the Agency for Toxic Substances and Disease Registry (ATSDR), the Collaborative of Health and the Environment (CHE), the Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (OEHHA), the Science and Environmental Health Network (SEHN), and the University of California, San Francisco, Pediatric Environmental Health Specialty Unit (UCSF PEHSU).

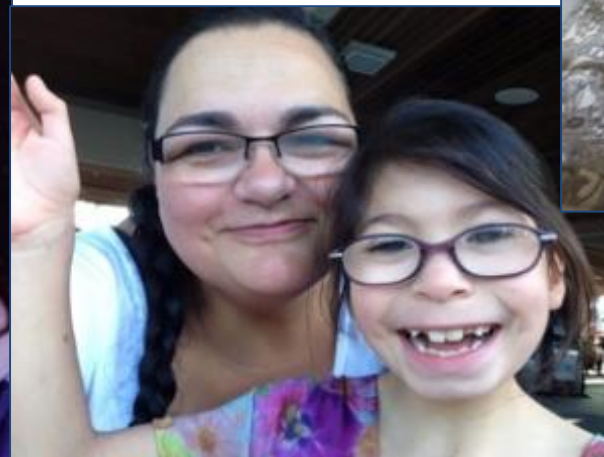
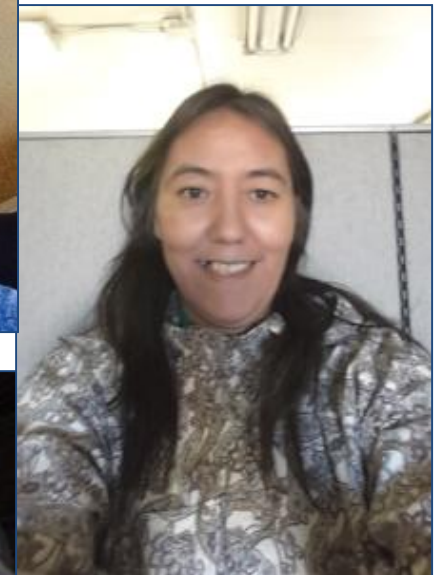
Free Continuing Education credits offered through the Centers for Disease Control and Prevention/ATSDR. For more information contact: Maria Valenti, mvalenti@ic.gov or Brian Tenca, bht1@cdc.gov.



Telling
*A Story of
Health*
- an Alaskan
perspective



Native Alaskan presenters
2016 Children's Environmental
Health Summit







Wishing you all a healthy and peace holiday season!