Society's Feeding Disorder: Food Additives and Our Health

How has food, something essential to human evolution, become so disconnected from health and nutrition? You would think in the 10,000 years since humans started domesticating food supplies we would have pretty much figured out how to feed ourselves well—and by "well," I do not mean having supermarket shelves stocked with 50 kinds of sugary cereals and three varieties of pesticide-laden apples.

There are of course many aspects of the agricultural industry and our current food system that can make one queasy about buying almost any food, except from the farmer next door (and unfortunately, most people do not have a farmer next door). I think of these as society's feeding disorder—including farm subsidies, antibiotics in meats, pesticide use, toxins in food packaging, and myriad external costs of transporting food 1000s of miles from where it was grown. The regulation of food additives, however, is what I will focus on here.

Concerns about adulteration of food were recorded at least as far back as the 1700s. Bill Bryson notes in his book, *Home: A Short History of Private Life*, that: "A tea drinker, according to various authorities, might take in anything from sawdust to powered sheep's dung....Arsenite of copper was used to make vegetables greener or to make jellies glisten. Lead chromate gave bakery products a golden glow and brought radiance to mustard..." and so forth. To help eradicate these practices the Food and Drug Administration (FDA) was established in 1930, and a FDA program explicitly designed to oversee chemical ingredients in foods was started in 1958. In a report released just late last month by the Pew Health Group, however, food manufacturers still have significant authority over what goes into foods. In fact, 1000s of ingredients are not evaluated by or even known to the FDA—some of which may have significant impact on health (see: [http://onlinelibrary.wiley.com/doi/10.1111/j.1541-4337.2011.00166.x/full](http://onlinelibrary.wiley.com/doi/10.1111/j.1541-4337.2011.00166.x/full)).

What we have learned about a number of additives and artificial ingredients to date is that...
many are associated with problematic health outcomes. To name a few:

- Hydrogenated Fats - cardiovascular disease, obesity
- Artificial Food Colors - allergies, asthma, hyperactivity; possible carcinogen
- Sulfites (sulfur dioxide, metabisulfites, and others) - allergic and asthmatic reactions
- Sugar and Sweeteners - obesity, dental cavities, diabetes and hypoglycemia, increased triglycerides (blood fats) or candida (yeast)
- Artificial Sweeteners (Aspartame, Acesulfame K and Saccharin) - behavioral problems, hyperactivity, allergies; possible carcinogen
- Preservatives (BHA, BHT, EDTA, etc.) - allergic reactions, hyperactivity; potentially toxic to the nervous system and liver
- Artificial Flavors - allergic or behavioral reactions


For our next CHE partnership call on November 17--notably just a week before Thanksgiving--we will have three experts to discuss the science, health implications and policy related to food additives [RSVP: http://www.healthandenvironment.org/partnership_calls/9972]. Please join us in taking a look at this particular set of issues as part of CHE's broader work developing a complexity model that articulates the many interacting factors influencing our health.

With warm regards,

Elise Miller, MEd
Director, Collaborative on Health and the Environment (CHE)

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This essay is available on CHE's blog for comment and further discussion.
CHE-LDDI and ASA co-sponsor state-based workshops on environmental influences on neurodevelopment: CHE-LDDI and the Autism Society of America (ASA) are co-sponsoring 3 state-based workshops in North Carolina, Texas and California. The next workshop takes place in Austin, Texas on November 15th. The workshop is titled: Environmental Influences on Neurodevelopment: Translating the Emerging Science into Public Health Policy.

During these workshops, national experts from diverse sectors will highlight the latest research on associations between environmental exposures and early neurodevelopment as well as the implications for prevention-based public health policy. This meeting is intended to catalyze cross-discipline discussions among leaders in environmental, experimental and epidemiologic fields as well as those involved in public policy and environmental health advocacy.

Remaining workshop dates and locations:

- November 15, 2011 - Dell Children's Medical Center, Austin, Texas
- January 12, 2011 - UCLA, California

Workshops are open to the public. Faculty, students, policy makers, and others concerned with environmental influences on neurodevelopment and public health are particularly encouraged to attend.

Read more

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Resources from recent CHE calls:
If you missed any of the following CHE calls, you may listen to MP3 recordings and find supporting materials at the following links:

- October 27, 2011 - New Frontiers in Cancer Research: How Chemicals Can Interfere with Cancer Therapies and Implications for Health Policy
- September 27, 2011 - Air Pollution and Neurodevelopment: How Prenatal Exposures May Impact I.Q.
- July 21, 2011 - Breast Health and Early Life Exposures
- July 12, 2011 - The World Gets Hot(ter) with Mark Hertsgaard

You can subscribe via podcast to receive notifications of new call recordings added to the CHE archives. View past calls and subscribe to the podcast.

CHE Working and Regional Group Updates

Stay in touch with CHE via Facebook and the CHE blog:
Visit CHE's blog at http://ourhealthandenvironment.wordpress.com/
CHE's Facebook page

Cumulative Impacts Working Group hosted by CHE and SEHN
~ coordinated by Elise Miller and Carolyn Raffensperger, for more information visit the Cumulative Impacts website

~ Working group call scheduled: Assessing and Addressing Cumulative Impacts in Communities
Thursday December 1, 2011 at 11:00 am Pacific / 2 pm Eastern

RSVP for this call

People experience the environment of particular places. Every community has a different mix of environmental conditions and factors. We know that environmental contaminants are unequally allocated to communities of color and poorer communities. We also know that social factors interact with environmental factors to influence health. Understanding
the cumulative impacts of environmental and social factors is essential to sound public health and environmental protection policies.

**Featured speaker:**
Amy D Kyle, PhD, MPH, an associate adjunct professor in the Division of Environmental Health Sciences, School of Public Health, UC Berkeley has worked on cumulative impacts since 1999 when she was involved with the California Air Resources Board in developing guidance to communities to address environmental justice concerns in land use planning. More recently, she has been working on identifying existing models for addressing cumulative impacts in American environmental law and policy and developing models to expand this to more fully address the environment as people experience it and redress inequalities. This call will be moderated by Elise Miller, MEd, CHE Director and Carolyn Raffensperger, SEHN. The call will last one hour and will be recorded for archival purposes.

**CHE Diabetes-Obesity Spectrum**
~ coordinated by Sarah Howard, for more information contact info@healthandenvironment.org

~ **Recent conferences of interest:** The conference "Chemicals, Obesity, and Diabetes: How Science Leads Us to Action," sponsored by the Environmental Health Strategy Center, the Colby Environmental Studies Program, and the Goldfarb Center, took place in Waterville, Maine.

~ **New research published in academic and scientific journals:**


**CHE Fertility**
~ coordinated by Karin Russ, karin@healthandenvironment.org

~ **Working group call announced: Integrating Environmental Health Into Clinical Practice**
November 18, 2011 at 10:00 am Pacific / 1:00 pm Eastern

RSVP for this call

Prenatal exposures to environmental chemicals have been associated with a wide range of diseases, both in the neonatal period and later in life. Animal and epidemiological studies are discovering links between endocrine disrupting chemicals and infertility. While research is uncovering the connections between exposures to environmental contaminants and reproductive health problems, health care providers are beginning to incorporate this information into clinical care.

Join us for an informative discussion about strategies for incorporating environmental health information into clinical care. Katie Huffling, CNM will review the need for
screening patients for environmental exposures, and present a prenatal environmental screening tool she created for her clients. Sandy Worthington, WHNP-BC, CNM, will discuss the Green Choices Project she developed at the Planned Parenthood Federation of America. Dr. Kirtly Parker Jones will present information on counseling patients about environmental threats to fertility.

**~ Updated resource: Environmental Exposures, Infertility, and Related Reproductive Disorders:** This article summarizes scientific studies and discusses trends in fertility, causes of infertility and concerns about early life environmental exposures. First published in 2003, the review has been updated to include data from recent studies of male and female infertility, and early life exposures affecting reproductive function in adulthood. This paper has undergone peer-review by an independent group of scientific experts in the field. Published by CHE.

[Read more](#)

**~ Review: Endocrine disrupting chemicals and disease susceptibility:** Environmental chemicals have significant impacts on biological systems. Chemical exposures during early stages of development can disrupt normal patterns of development and thus dramatically alter disease susceptibility later in life. Endocrine disrupting chemicals (EDCs) interfere with the body's endocrine system and produce adverse developmental, reproductive, neurological, cardiovascular, metabolic and immune effects in humans. A wide range of substances, both natural and man-made, are thought to cause endocrine disruption, including pharmaceuticals, dioxin and dioxin like compounds, polychlorinated biphenyls, DDT and other pesticides, and components of plastics such as bisphenol A (BPA) and phthalates. This review focuses on the mechanisms and modes of action by which EDCs alter hormone signaling. It also includes brief overviews of select disease endpoints associated with endocrine disruption. *Journal of Steroid Biochemistry and Molecular Biology.*

[Read more](#)

**~ Study: In utero exposure to bisphenol-A and anogenital distance of male offspring:** This study provides the first epidemiologic evidence that in utero BPA exposure may adversely affect male genital development. A total of 153 boys were included in the final analysis, among them 56 with parental occupational exposure during pregnancy and 97 without. A highly significant relationship was found between higher BPA exposure and shortened AGD; most marked with higher maternal exposures. Birth Defects Research Part A, *Clinical and Molecular Teratology.*

[Read more](#)

**~ Study: Prenatal concentrations of PCBs, DDE, DDT and overweight in children:** This prospective birth cohort study suggests that prenatal organochlorine compound exposures may be associated with overweight in children and that sex and high-fat intake may influence susceptibility. *Environmental Health Perspectives.*

[Read more](#)

**~ Study: Persistent organochlorine pollutants and menstrual cycle characteristics:** An evolving body of evidence suggests an adverse relation between persistent organochlorine pollutants (POPs) and menstruation, though prospective longitudinal measurement of menses is limited and served as the impetus for study. Researchers assessed the relation between a mixture of persistent organochlorine compounds and menstrual cycle length and duration of bleeding in a cohort of women attempting to become pregnant. Select POPs were associated with changes in menstruation underscoring the importance of assessing chemical mixtures for female fecundity. *Chemosphere.*

[Read more](#)

**~ Request for Information: Research Resources for the Environmental Health Sciences Response Date:** December 01, 2011. Sponsor: National Institute of Environmental Health Sciences (NIEHS). The NIEHS Division of Extramural Research and Training is seeking input on existing technological resources that can facilitate research.
in the environmental health sciences, but that are not widely available due to infrastructure requirements or other technical issues which limit distribution. This request for information (RFI) is for planning purposes only and should not be construed as a funding opportunity or grant program. Input from all interested parties is welcome, including the lay public, environmental health researchers, technology developers, and others. Please respond on-line at the Research Resources Request for Information webpage.

~ Call for Abstracts: The Endocrine Society is now accepting abstracts for its 2012 meeting on June 23-26 in Houston TX. The Endocrine Society is the world's oldest, largest, and most active organization devoted to research on hormones and the clinical practice of endocrinology. In 2011, more than 2,600 abstract presenters chose ENDO as the venue to share their research, exchange ideas, and network with nearly 8,000 endocrine researchers and practitioners. Deadline for submission is Feb 6, 2012. Read more

CHE Healthy Aging and the Environment Initiative
~ coordinated by Maria Valenti, mvalenti@igc.org

~ Mark your calendar to attend this innovative NYC Conference June 7-8, 2012: We now have 22 co-sponsors including organizations focusing on healthy aging, healthy food, environmental and social justice, education, youth empowerment, environmental science, children's health, intergenerational issues and others for our Promoting Intergenerational and Environmental Health Across the Lifespan conference to be held in New York City in June 7-8, 2012 New York Academy of Medicine. Keep updated with co-sponsors and news about this innovative conference by visiting the CHE website. Visit the conference webpage

~ Healthy Aging and the Environment: A Pocket Guide: Now available for download: You can now download the new publication--a 16-page illustrated synthesis of the 208-page report Environmental Threats to Healthy Aging--on CHE's Healthy Aging and the Environment webpage. It describes the importance of policy actions as well as individual actions that are necessary to providing opportunities for healthy living for all. For one or more printed copies please contact Maria Valenti at mvalenti@igc.org.

~ AARP and Environmental Health
AARP Environment and Aging lunches: AARP's office of Academic Affairs in conjunction with AARP's Sustainability Group conducts regular Environment and Aging lunches at their headquarters in Washington DC covering a variety of topics. Healthy Aging Initiative members have been attending these lunches that are designed to stimulate discussion on issues of importance and strategies to promote healthy aging. The most recent lunch focused on AARP research and survey findings on issues including climate change and energy.

AARP member Event in LA: The healthy aging Pocket Guide was reprinted by AARP and distributed at AARP's Life@50+ 2011 member event recently held in Los Angeles attended by over 20,000 people. Plans for greening the next AARP annual event in New Orleans September 2012 are underway. The opening keynote speaker in LA was Jane Goodall PhD, renowned primatologist whose chimpanzee behavioral research helped redefine the relationship between humans and animals. One key message she underscored was environmental responsibility and that that each individual can effect positive change for the betterment of all living things. AARP will soon launch a Green Blog - stay tuned!

~ Environment and Aging Breakfast at GSA: The Healthy Aging Initiative will be co-hosting an invitation-only Aging and the Environment breakfast with AARP during the upcoming Gerontological Society of America's annual scientific meeting in Boston November 18-22. The purpose of the breakfast is to promote discussion on healthy aging across the lifespan and across generations. Topics will include the food, chemical, built, natural, and psychosocial environments that influence health over the lifespan,
and how to mobilize efforts to identify key intervention points and crosscutting solutions that can help prevent disease and promote health and healthier environments. Healthy Aging Initiative colleagues wrote a special issue on an ecological approach to health across the lifespan of the GSA's Public Policy and Aging Report.

~ Presentations:
Oct 24th: University of Massachusetts, Lowell--Ted Schettler MD, MPH, presented "Environment and Health: An Eco-Social Perspective" as part of the University's 2011 Fall Seminar Series. It was sponsored by the College of Fine Arts, Humanities and Social Sciences (FAHSS) School of Health and Environment. Watch the video online. The seminar was open to the public and was well attended and well received. 100 Pocket Guides were distributed to attendees.

Oct 31-Nov 2nd: American Public Health Association (APHA)--Two presentations on An Ecological Approach to Healthy Aging Across the Lifespan were given at the recent APHA annual conference in Washington, DC. Ted Schettler, MD, MPH, presented on a panel on Healthy Communities for Healthy Aging organized by Kathy Sykes of the US EPA Aging Initiative and attended by over 80 people. Another very well received presentation was provided by Patrice Sutton MPH in the Environment and Aging Section. Over 200 Pocket Guides and other materials were distributed to attendees.

Ted Schettler's presentation
Patrice Sutton's presentation

Please visit the Healthy Aging section of the CHE website for additional information on recent and upcoming presentations across the country.

CHE Learning and Developmental Disabilities Initiative
~ coordinated by Elise Miller, for more information contact info@healthandenvironment.org

~ State-based workshops announced: CHE-LDDI and the Autism Society of America (ASA) are co-sponsoring 3 state-based workshops in North Carolina, Texas and California. The workshop is titled: Environmental Influences on Neurodevelopment: Translating the Emerging Science into Public Health Policy.

During these workshops, national experts from diverse sectors will highlight the latest research on associations between environmental exposures and neurodevelopment as well as the implications for prevention-based public health policy. This meeting is intended to catalyze cross-discipline discussions among leaders in environmental, experimental and epidemiologic fields as well as those involved in public policy and environmental health advocacy.

Workshops are open to the public. Faculty, students, policy makers, and others concerned with environmental influences on neurodevelopment and public health are particularly encouraged to attend.

Remaining workshop dates and locations:
November 15, 2011 - Dell Children's Medical Center, Austin, Texas
January 12, 2011 - UCLA, California

More information, including registration information

CHE Regional Working Groups Updates

CHE Alaska
~ coordinated by Pam Miller, pkmiller@akaction.net

~ Working group call announced: Breathe Free: Protecting Community Health from Toxic Coal Dust
After exploiting coal reserves in much of the Lower-48, mining companies are turning to Alaska as the next place to strip mine for coal. Strip mining and associated coal industry activities would put salmon streams, air quality, human health, and community well-being at risk. People living near mining operations and along transportation routes may be exposed to and inhale coal dust from surface mining operations, coal processing and cleaning plants, truck and train loading facilities, and storage and export sites. Breathing coal dust has been linked to higher rates of health problems such as cardiopulmonary disease, chronic obstructive pulmonary disease (COPD), high blood pressure, lung disease, and kidney disease. Join us for a discussion with Dr. Michael Hendryx whose groundbreaking research about the human health impacts of coal dust exposure reveals cause for concern about the proposed Wishbone Hill and Chuitna coal mines in Alaska. Learn more about why coal dust is toxic, how people may be exposed, and the numerous community health risks associated with coal mining.

Featured presenter: Dr. Michael Hendryx, Associate Professor in the Department of Community Medicine, West Virginia University. Dr Hendryx is also Director of the West Virginia Rural Health Research Center. Michael earned his PhD in Psychology from Northwestern University in 1986, and completed a post-doctoral fellowship in Methodology at the University of Chicago. He previously served on the faculty at the University of Iowa, and at Washington State University. His research interests focus on health disparities, particularly for residents of Appalachian coal mining communities. He has published approximately 85 peer reviewed research articles.

Health and Environment Alliance (HEAL) - Europe
~ coordinated by Lisette van Vliet, lisette@env-health.org

~ European environmental health task force targets three international policy dialogues: The first meeting of the WHO European Environment and Health Task Force (EEHTF) met in Bled, Slovenia and discussed ways to create a bigger place for environmental health in three current United Nations and other international debates, namely the UN Non-communicable diseases initiative, UN Framework Convention on Climate Change negotiations in Durban, and sustainable development in the run up to the Rio+20 conference.

The EEHTF is the leading international body established to implement and monitor environment and health commitments, which governments signed up to in the Parma Declaration and Commitment to Act. Its first meeting took place on October 27-28, 2011 and brought together representatives from across the 53 countries in the European region. HEAL, which is a full member of the EEHTF representing public interest and professional groups from the health community, provided expertise on a number of topics. Several interventions received strong support from various national government representatives and the European Environment Agency (EEA).
Read more

~ Putting health on the climate change agenda: HEAL is involved in supporting three initiatives aimed at raising awareness on health and climate change in the lead-up to the Durban climate change talks in November 2011.

First, we are both signatory and promoting sign-up to the "Security and Health Statement", which sets out the drastic consequences for health of climate change. On 17 October, leading doctors, security experts and non-governmental organizations including HEAL met in London at a conference on the health and security implications of climate change. As well as outlining the health impact, the meeting statement calls upon governments around the world to prioritise efforts to address the causes and impacts of
climate change. It urges the European Union to unconditionally agree to a target to cut emissions domestically by 30% by 2020, and to prepare further targets towards 2050 which would create incentives for a low-carbon transformation of the economy.

Second, HEAL is organising a delegation for the upcoming United Nations Framework Convention on Climate Change (UNFCCC) COP17 meetings in Durban later this year. The event will be historic for health because it will include the first Global Climate and Health Summit, organized by Health Care Without Harm, and in which HEAL is a partner. This summit meeting aims to bring together key health sector actors to discuss the impacts of climate change on public health and to find solutions that promote greater health, as well as economic equity between and within nations. Register for the event.

Thirdly, the Global Campaign for Climate Action, which continues to provide very powerful promotion of the work of non-governmental partners in the climate change process, has featured HEAL's climate and health work in an interview with Genon Jensen, executive director, in the latest issue of tcktcktck newsletter. Read the interview.

~ First-ever opportunity to comment on proposed ban of combined phthalates in products: The European Chemicals Agency is conducting a public consultation on a proposed ban of certain articles containing a combination of four phthalates (DEHP, BBP, DBP and DIBP). This consultation is very important as it is the first proposal for a ban under REACH of several chemicals in certain consumer products due to their combined effects. Denmark proposed the ban due to their concern about the human exposure to these chemicals and their toxicity for reproduction (endocrine disruption; effect on testicular functions; disruption of sexual differentiation pre-birth).

Interested parties can see the documents and contribute comments by 12 December 2011 (by scrolling to bottom of page) at: http://echa.europa.eu/reach/restriction/restrictions_under_consideration_en.asp

We strongly encourage people to give comments, which can range from messages of general support to giving data and assessments on exposure and impacts to health and the environment. HEAL will be submitting comments, and is interested to receive your input also. Please contact Lisette@env-health.org. Read more on HEAL's website.

~ EU agricultural reform needs to be greener: When the European Commission released its new proposal for the future of EU farm subsidies and agricultural production, HEAL welcomed certain elements but said it did not go far enough on reducing farming's dependency on pesticides and other chemicals. Read more.

~ UN Rio+20 asked to address environmental health: HEAL has given input into the preparation process for Rio+20, a conference which will review progress on achieving sustainable development 20 years after the original 1992 Rio de Janeiro conference. The conference will take place in Rio, 4-6 June 2012. There are many reasons why "health" needs to be central to the Rio+20 process and four concrete ways to achieve this. Learn more and download HEAL's input to the conference.

CHE Washington
~ coordinated by Steve Gilbert, sgilbert@innd.org and Aimee Boulanger, aboulanger@whidbey.com

~ Children's Environmental Health Forum announced: Save the date for a Children's Environmental Health Forum in downtown Seattle on Tuesday, November 29, 2011, 8:30am to noon. Organized by the Children's Environmental Health Working Group of the Collaborative on Health and the Environment - Washington. Hear from
regional leaders and learn about the exciting work happening in Washington to protect children from harmful environmental exposures.

Read more and register to attend

~ Lessons Learned: Steve Gilbert publishes a monthly column in the CHE-WA bulletin titled Lessons Learned: Look back to go forward. In these columns Gilbert explores lessons and important events in environmental science from history and how those events have shaped or continue to influence our future. You can read past columns at: http://toxipedia.org/x/06Jb.

~ Public Health Cafe: Informal, interactive conversations about community health: Please join us for our first Public Health Cafe on November 17, 2011 at 5:00 pm Pacific. Dr. Dave Eaton and Dr. Steve Gilbert will lead a lively discussion about how the new science of epigenetics is changing how we think about environmental impacts on our health and the health of future generations. The event will take place at the Chaco Canyon Organic Café in the University District, Seattle.

More information and RSVP

Announcements and News Highlights

Submission deadline extended
The deadline for submission of articles to the Special Issue on Cumulative Health Risk Assessment for the International Journal of Environment Research and Public Health has been extended to January 15th, 2012. The previous deadline was Oct 31, 2011.

Read more

Special issue of New Solutions: A Journal of Environmental and Occupational Health Policy
This special issue features articles focused on designing a chemically safer future.

Read more

November 2011 issue of Environmental Health Perspectives available online
Read more

November 2011 issue of Environmental Factor available online
Read more

CHE maintains a news feed of environmental health related news announcements and events collected from a multitude of sources on CHE's website.

Reports, Resources and Other Update

EPA releases final hydraulic fracturing study plan
In its Fiscal Year 2010 budget report, the U.S. House of Representatives Appropriation Conference Committee identified the need for a focused study of hydraulic fracturing. The overall purpose of the study is to understand the relationship between hydraulic fracturing and drinking water resources. The scope of the research includes the full lifespan of water in hydraulic fracturing, from acquisition of the water, through the mixing of chemicals and actual fracturing, to the post-fracturing stage, including the management of flowback and produced water and its ultimate treatment and disposal.

Read more

CHE lists hundred of reports, books, videos, databases and other resources in a searchable Portal to Science on CHE's website.

Thank you for taking the time to read the latest about CHE. As always, we welcome your questions and suggestions. Please direct comments to Elise Miller, Director of CHE,
at elise@healthandenvironment.org.

Best wishes,
Elise Miller, MEd, Director
Steve Heilig, Director of Public Health and Education at San Francisco Medical Society and CHE
Erika Sanders, Administrative Coordinator

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