

Considering the Role of Our Current Food Supply In Clinical Nutrition

FROM "FARM TO TABLE" To Patient Counseling

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Objectives

- Identify current farming practices that impact both human and environmental health
- Consider ways to consider current farming practices in the workplace setting
 - Food industry and food purchasing
 - Medical Nutrition Therapy/Nutrition Counseling
 - Community nutrition education and public health
- Explore the financial world of food, and how business strategies influence the food supply and food policy

Conventional Nutrition Science

- **Focus on human health**
 - **Safe food**
 - Temperature regulation
 - Pasteurization
 - **Nutrient content**
 - Enrichment
 - Fortification



Food and Nutrition	
<i>The last 40 years</i> •Energy balance •Food composition	

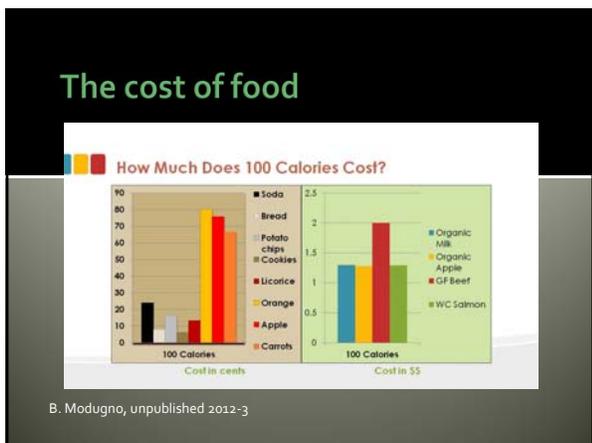
Scientific Report of the 2015 Dietary Guidelines Advisory Committee
Specific nutrition-related health issues facing the US population

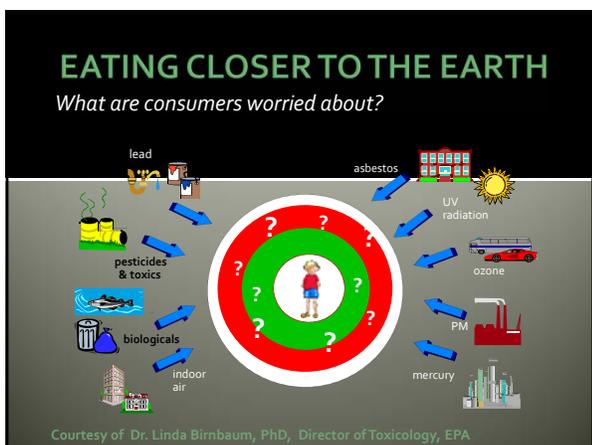
- ❖ Overweight , obesity and other diet related chronic diseases
- ❖ Less than optimal dietary patterns in the US
- ❖ Food Insecurity

The Food We Eat

- Whole food
- Organic
- Natural
- Pastured
- Free range
- Cage free
- Grass fed
- Sustainable
- GMO free

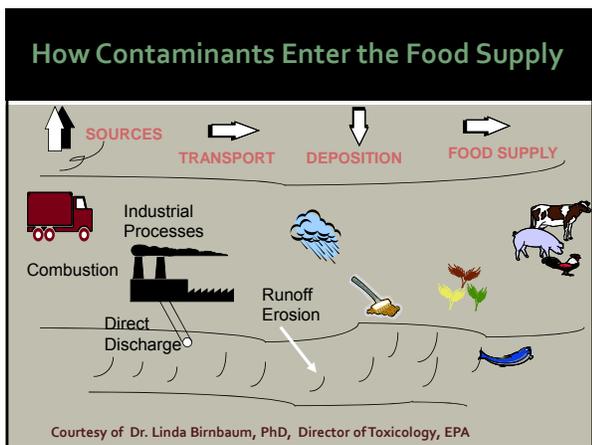






Persistent and Not-so-persistent Organic Pollutants and Endocrine Disruptors

- Impaired neurological growth and function
 - Learning disabilities, developmental delay (Chloropyrifos)
 - Autism, leaky gut syndrome (?Glyphosate)
- Impaired glucose tolerance
 - Obesity, Diabetes (Atrazine, BPA)
 - Cardio -Metabolic Syndrome
 - Cancer
- Impaired thyroid function (BPA, pthalates, PCBs, brominated flame retardants, and perfluorinated chemicals)
 - Obesity
 - Cancer
- Impaired fertility; reproduction (pthalates, pesticides)
 - PCOS (BPA)
 - Low Testosterone, anogenital distance



Concerns today

“Close to 800 chemicals are known or suspected to be capable of interfering with hormone receptors, hormone synthesis or hormone conversion”

The image shows the cover of the report 'State of the Science of Endocrine Disrupting Chemicals - 2012'. The cover art depicts a hand holding a small animal, with a microscope and chemical structures in the background. The logos for the World Health Organization and UNEP are visible at the top.

Conventional Thinking

"There is weak evidence that human health has been adversely affected by exposure to endocrine-active chemicals."

*The Global Assessment of the State-of-the-Science of Endocrine Disruptor report, 2002
WHO/UNEP/IOMC*

But a 2012 update reports :

"data linking exposures to EDCs and human diseases are much stronger now than in 2002..."

Union of Concerned Scientists

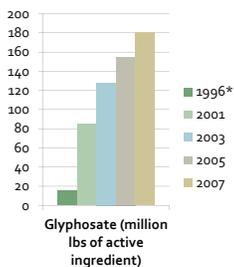
- Concerns with Conventional Farming
 - Greater use of more chemicals
 - Resistant weeds and other pests
 - Engineered genes tend to translocate
 - Less biodiversity
 - Animals, plants, microbes



http://www.ucsusa.org/food_and_agriculture/our-failing-food-system/genetic-engineering/promoting-resistant-pests.html#VP-FeeGnGA8

Glyphosate based herbicides

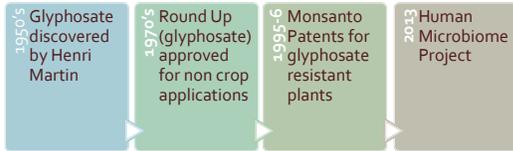
- GE was supposed to decrease pesticide use; glyphosate resistance in weeds increases use
- Glyphosate is never used alone, but in conjunction with surfactants that increase toxicity of the pesticide formulation
- In last 10 years, sprayed directly onto wheat and barley days before harvest; now we measure residue in food



http://www.epa.gov/oppfeads/cb/csb_page/updates/2011/sales-usage06-07.html
* 1996 data: Food and Water Watch data

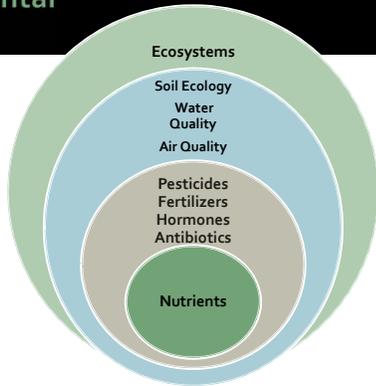
Glyphosate based herbicides

- Glyphosate acts by disrupting the shikimate pathway present in higher plants, algae, bacteria and fungi
- Shikimate pathway not present in humans and animals



Environmental Nutrition

- Food is more than a delivery vehicle for essential nutrients



Current Concerns



The Pew Commission on Industrial Farm Animal Production

2008

Current Concerns



Charles Benbrook
November, 2009
Centre for Sustaining Agriculture
and Natural Resources
Washington State University

Organic Talking Points



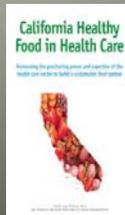
- Hunger and Environmental Nutrition Practice Group
- Revised Sept 2014
- *Disclaimer: does not represent the viewpoint of AND*

HEALTH CARE WITHOUT HARM

California Healthy Food in Health Care

Initiated in 2005

127 hospitals participate in the California Healthy Food in Health Care Program



Healthy Food in Health Care

- Food is the end result of a farm system that should
 - Conserve and renew natural resources
 - Advance social justice and animal welfare
 - Fulfill the food and nutrition needs of all
- Today's current food supply contributes to poor metabolic health

Sustainable farming



*Polyface Farms
Swoopes, VA 2013*

<http://muchmorethanfood.com/tag/polyface/>

Biodynamic Farming

- ❖ Not new, but resurging today
- ❖ Recognizes value of bacteria
- ❖ Sees waste as "liquid gold"
- ❖ Focus on health of ecosystem



Sustainable farming



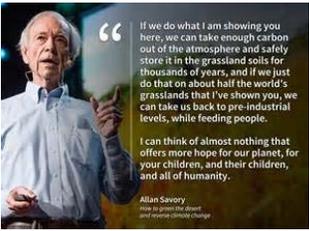

Properly managed grazing animals are an important part of the solution to feeding the world in the future

Nicolette Hahn Niman, Defending Beef, c 2013

Sustainable farming

"[Grazing animals] can protect grasslands and even reclaim degraded land that was once desert."

Allan Savory
February, 2013



“ If we do what I am showing you here, we can take enough carbon out of the atmosphere and safely store it in the grassland soils for thousands of years, and if we just do that on about half the world's grasslands that I've shown you, we can take us back to pre-industrial levels, while feeding people.

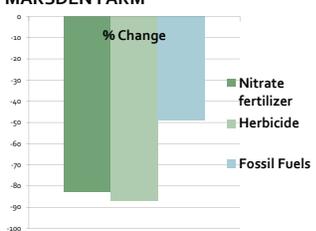
I can think of almost nothing that offers more hope for our planet, for your children, and their children, and all of humanity.

Allan Savory
with the Green Revolution
and water climate change

http://www.ted.com/talks/allan_savory_how_to_green_the_world_s_deserts_and_reverse_climate_change

More Sustainable Options

MARSDEN FARM



Category	% Change
Nitrate fertilizer	-80%
Herbicide	-85%
Fossil Fuels	-45%

- More effective solutions
 - Cost neutral
 - 200x decrease in water toxicity

Adam S. Davis, *Increasing Cropping System Diversity Balances Productivity, Profitability and Environmental Health*. plosone.org. October 10, 2012

"Health-care systems do not have mechanisms in place to address the contribution of environmental risk factors to endocrine disorders."
Health Care Without Harm



Is this true?

Dietitians speak directly to consumer about food and the food supply

- Planning menus
- Purchasing food
- Educating the public
- Counseling clients



What can we do to address the challenges of our current food supply as we work with the food industry, the media, education, food administration, public health, and clinical nutrition?

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