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### Weston Price Fondation Wise Traditions Presentations

- Powerpoint Presentations at the [Weston A. Price Wise Traditions 15th Annual Conference Indianapolis November 7-10, 2014](#).  
Pesticides, Antibiotics, Vaccines and Pharmaceuticals: Are They the Cause of our Current Health Crisis?

1. Nutrition ([Powerpoint Slides](#)) ([PDF Version](#))
2. Pesticides: Focus on Roundup ([Powerpoint Slides](#)) ([PDF Version](#))
3. Vaccines, Antibiotics, and Microbes ([Powerpoint Slides](#)) ([PDF Version](#))
4. Pharmaceutical Drugs: Focus on Statins ([Powerpoint Slides](#)) ([PDF Version](#))

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Drugs.pptx Nutrition.pptx antibiotics\_vaccines.pptx glyphosate\_new.pptx

## Outline

- Very brief overview
- Nutrition and health
- Pesticides: focus on Roundup
- **Vaccines, antibiotics and microbes**
- Pharmaceutical drugs: focus on statins






## Vaccines, Antibiotics and Microbes



Stephanie Seneff  
MIT CSAIL

## Bought, The Movie\*

VACCINES	GMOs	BIG PHARMA
		
<b>CORRUPTION</b>	<b>GREED</b>	<b>LACK OF CONSCIENCE</b>

\*[indiegogo.com/projects/bought-the-hidden-story-behind-vaccines-big-pharma-your-food](http://indiegogo.com/projects/bought-the-hidden-story-behind-vaccines-big-pharma-your-food)

These story lines converge on Wall Street

## Outline

- Microbiome
- Vaccines
- Influenza
- Antibiotics
- Lyme Disease and Chronic Fatigue

## Microbiome

“I make no apologies for putting microorganisms on a pedestal above all other living things. For if the last blue whale choked to death on the last panda, it would be disastrous but not the end of the world. But if we accidentally poisoned the last two species of ammonia-oxidisers, that would be another matter. It could be happening now and we wouldn't even know...”

-- Prof. Tom Curtis, Nature Reviews Microbiology  
July, 2006





## **Gut Bacteria: The Microbiome\***

- They represent over 9 million different genes compared to our paltry 20,000
  - Disrupted by pesticides, antibiotics, C-section
- “Well beyond obvious GI conditions such as irritable bowel and colorectal cancer, researchers have also found connections between microbiome changes and depression, Alzheimer's, autism, fibromyalgia, multiple sclerosis, even diabetes.”

\*Erik Goldman. Welcome to the Microbiome: Holistic Medicine's New Frontier. Holistic Primary Care, Sunday, 24 August 2014 21:17.

## **The Microbiome in Early Life\***

- The human is a "majority microbial superorganism"
- Proper seeding of the microbiome at birth is essential for protection from type 1 diabetes and from infectious diseases
- Urgent need to protect microbiota from environmental hazards

\*RR Dietert, Birth Defects Research Part B: Developmental and Reproductive Toxicology 101(4), 333-340, Aug. 2014

## The Maternal Microbiome\*

- Sterile womb paradigm is false
- Bacterial colonies in placenta, vagina, and breast milk are all important for fetal and infant development
- The uterine environment harbors bacteria
- Contrary to popular mythology, breast milk is teeming with bacteria
  - Streptococcus, Staphylococcus, Serratia, and Corynebacteria, etc.
  - Each mother has a unique signature

\*[www.the-scientist.com/?articles.view/articleNo/40038/title/The-Maternal-Microbiome/](http://www.the-scientist.com/?articles.view/articleNo/40038/title/The-Maternal-Microbiome/)

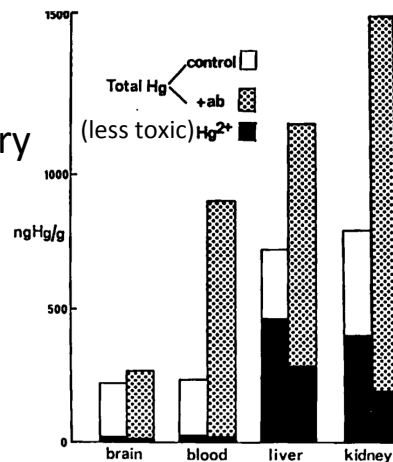
## Microbiome in Disease States\*

- Human microbiome project is underway
- Autoantibodies are likely being produced in response to pathogens rather than to self
- Chronic exposure to certain viruses like Epstein-Barr virus modifies cells
  - Slows the response of the vitamin D receptor
- Epstein-Barr virus has been detected in association with many disease states
  - Just one component of a mix
  - Often acquired later on in the disease process

\*Amy Proal, Autoimmune Research Foundation  
[youtube.com/watch?v=hO2YXh0ajnk&feature=player\\_embedded#at=26](https://www.youtube.com/watch?v=hO2YXh0ajnk&feature=player_embedded#at=26)

## Gut Bacteria Detoxify Mercury\*

- Gut bacteria demethylate organic mercury forming insoluble free mercury which is excreted
- Mice fed methyl-mercury (toxic)
- Antibiotics added in test group



\*Figure 5 in IR Rowland, Toxicol Pathol 1988 16:147-153.

## You are What You Host!\*

- Genomes within "*meta-organisms*" interact to influence host longevity
- The worm, *C. elegans* is unable to synthesize nitric oxide (NO)
  - It relies on its gut bacteria for its supply
- Bacterial NO modulates *C. elegans* lifespan via effects on *host* transcription
- Bacteria also release small interfering RNAs that can regulate host cell gene expression

\*C Heinz and W. Mair, Cell 156, January 30, 2014, 408-411.

## Juvenile Diabetes\*

“Juvenile diabetes is more likely to develop in babies born by C-section, in boys who are tall, and in babies who gain weight more rapidly in the first year of life. Each of these observations suggested to me that *perturbations of our resident microbes very early in life* could be a contributing factor.”

“Even before the diabetes developed, the pancreases in antibiotic-exposed mice looked terrible, with angry immune and inflammatory cells tearing up the insulin-producing islets.”

\*M.J. Blaser, *Missing Microbes*, pp. 170,171

## Bile Acid Degradation by Gut Bacteria: A Key Regulator of Cholesterol\*

“High-level expression of BSH [bile salt hydrolase] in conventionally raised mice resulted in a significant reduction in host weight gain, plasma cholesterol, and liver triglycerides, demonstrating the overall impact of elevated BSH activity on host physiology.”

## Bile Acid Degradation by Gut Bacteria: A Key Regulator of Cholesterol\*

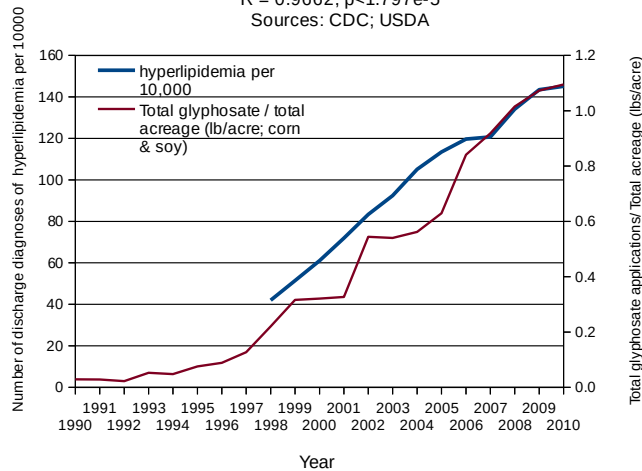
“Link between presence of BSH (bile salt hydrolase) and host physiology.”

Probiotic bacteria may help control obesity, hypercholesterolemia, and metabolic syndrome

...demonstrating the overall impact of elevated BSH activity on host physiology.”

## High serum LDL is Going Up in Step with Glyphosate Usage on Corn and Soy

Hospital Discharge Diagnoses of Hyperlipidemia (ICD 272.0-4)  
& Glyphosate applied to corn & soy crops  
R = 0.9662, p<1.797e-5  
Sources: CDC; USDA

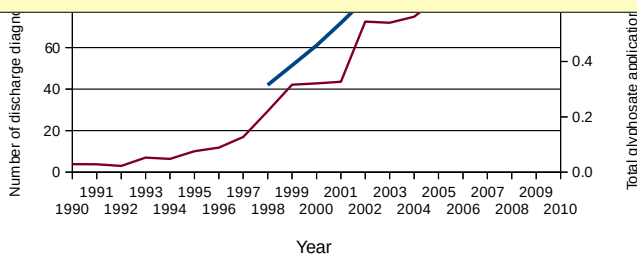


Collaboration with Dr. Chen Li and Dr. Nancy Swanson

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Glyphosate preferentially kills beneficial bacteria  
and allows pathogens to overgrow



Collaboration with Dr. Chen Li and Dr. Nancy Swanson

## Gut Microbes Protect from Food Allergies\*

- 18% increase in food allergies among children in the United States between 1997 and 2007
  - Life-threatening anaphylactic response to foods
- Antibiotic treatments can disrupt gut bacteria
- Mucosa-associated Clostridia protect from food allergies
  - Regulate epithelial permeability to food allergens
- Clostridia probiotics may work as treatment plan

## **Biofilms!\***

- A vast number of the pathogens in our body are in communities called biofilms
- Bacteria form an extracellular matrix around the colony that protects them from antibiotics
- Within the matrix, they communicate using quorum sensing
  - They can even communicate the message “It’s time to leave and colonize another host”
- Biofilms are analogous to multi-cellular organisms

\*[bacteriality.com/2008/05/26/biofilm/](http://bacteriality.com/2008/05/26/biofilm/)

## **Vaccines**



***“Vaccines that contain 25,000 times more mercury than what the EPA says are the maximum contaminant levels in drinking water are NOT safe!”***

***-- Catherine Frompovich***



### CDC Vaccine Schedule 1983 - 2014 Children Birth to 6 Years (recommended month)

1983	2014
DTP (2) OPV (2) DTP (4) OPV (4) DTP (6) MMR (13) DTP (18) OPV (18) DTP (48) OPV (48)  <b>Total: 10</b>	Influenza (prenatal) Hep B (birth) Hep B (3) DTaP (2) Hib (2) IPV (2) PCV (2) Rotavirus (2) DTaP (4) Hib (4) IPV (4) PCV (4) Rotavirus (4) Hep B (6) DTaP (6) Hib (6) IPV (6) PCV (6) Influenza (6) Rotavirus (6) Hib (12) MMR (12) Varicella (12) PCV (12) Hep A (12) DTaP (15) Hep A (18) Influenza (18) PPSV (24 - if high risk) MCV (24 - if high risk) Influenza (30) Influenza (42) MMR (48) DTaP (48) Varicella (48) IPV (48) Influenza (54) Influenza (66)  <b>TOTAL: 36-38</b>

DrMomma.org

## Recommended Vaccine Schedule by CDC\*

Vaccine	Birth	1 mo	2 mos	4 mos	6 mos	9 mos	12 mos	15 mos	18 mos	19-23 mos	2-3 yrs	4-6 yrs	7-10 yrs	11-12 yrs	13-15 yrs	16-18 yrs	
Hepatitis B <sup>1</sup> (HepB)	1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	4 <sup>th</sup> dose													
Rotavirus <sup>2</sup> (RV) RV1 (2-dose series); RV5 (3-dose series)		1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See footnote 2													
Diphtheria, tetanus, & acellular pertussis <sup>3</sup> (DTaP: <7 yrs)		1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	4 <sup>th</sup> dose												
Tetanus, diphtheria, & acellular pertussis <sup>3</sup> (Tdap: ≥7 yrs)													(Tdap)				
Haemophilus influenzae type b <sup>4</sup> (Hib)		1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See footnote 5													
Pneumococcal conjugate <sup>4</sup> (PCV13)		1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose	4 <sup>th</sup> dose												
Pneumococcal polysaccharide <sup>4</sup> (PPSV23)																	
Inactivated poliovirus <sup>5</sup> (IPV) (<18 yrs)		1 <sup>st</sup> dose	2 <sup>nd</sup> dose	3 <sup>rd</sup> dose													
Influenza <sup>6</sup> (IV; LAIV) 2 doses for some. See footnote 9					Annual vaccination (IV only)						Annual vaccination (IV or LAIV)						
Measles, mumps, rubella <sup>7</sup> (MMR)					1 <sup>st</sup> dose												
Varicella <sup>8</sup> (VAR)					1 <sup>st</sup> dose												
Hepatitis A <sup>11</sup> (HepA)					2-dose series. See footnote 11												
Human papillomavirus <sup>12</sup> (HPV2: females only; HPV4: males and females)														(3-dose series)			
Meningococcal <sup>13</sup> (Hib-MenACW-D ≥ 6 weeks; MenACWY-D ≥ 9 mos; MenACWY-CRM ≥ 2 mos)				See footnote 13													

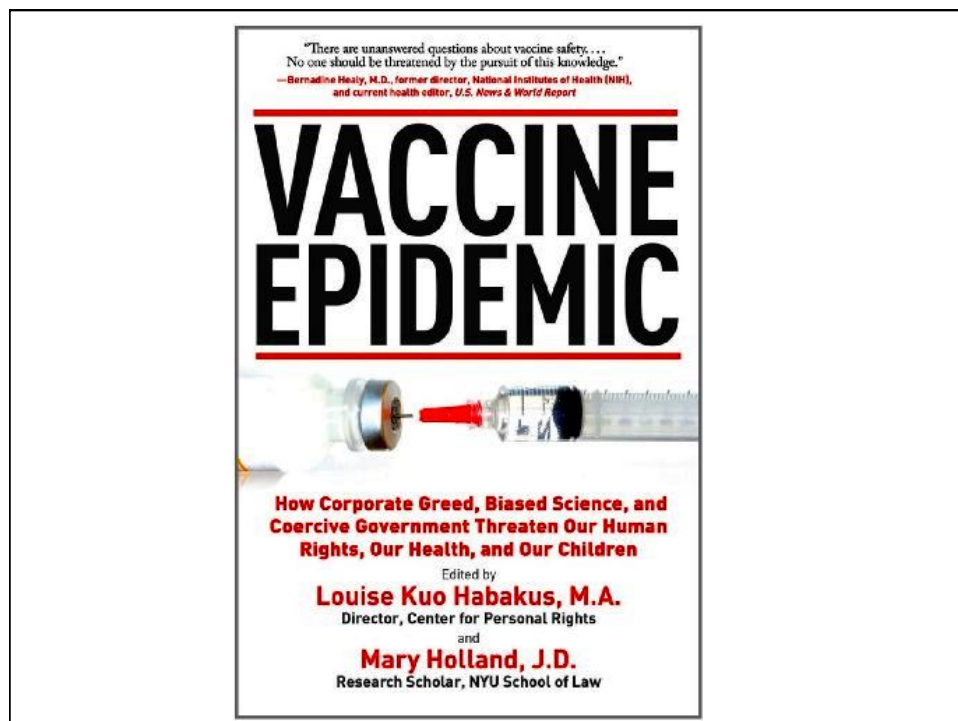
\* <http://www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html>

## Vaccine Induced Immune Overload\*

Mercury, aluminum, formaldehyde, MSG, neomycin, gentamycin, streptomycin, polymyxin B, polyethylene glycol, squalene, killed and/or live viruses, viral contaminants, etc.

→ Type 1 and type 2 diabetes, NASH, autism, asthma, food allergies, thyroiditis, vasculitis and autoimmune rheumatic diseases like lupus, rheumatoid arthritis, psoriasis and metabolic syndrome.

\*Classen JB, J Mol Genet Med 2014, S1:025



“How is disinterested vaccine safety governance even remotely possible when HHS employees stand as heroes at the head of the parade when a new vaccine is invented within its walls, while agency leaders are leading the cheering section, approving the new product’s launch, making the market for the product with its policy recommendations, and then turning around to cash multimillion-dollar checks?”

Mark Blaxill, *A LICENSE TO KILL?*

Chapter 19 in **VACCINE EPIDEMIC**, Louise Kuo Habakus, MA and Mary Holland, JD, Editors

## **The Price of Prevention: Vaccine Costs Are Soaring\***

- The number of vaccine patent applications rose tenfold in the 1990s to more than 10,000
- New vaccines have entered the market at once-unthinkable prices
  - Big pharmaceutical giants are making \$\$\$\$
  - “We have to give it to every kid, so it’s a golden ticket,”  
Dr. Lindsay Irvin, pediatrician (She remortgaged her home to afford their rising prices)
  - 33% of family doctors are considering giving up immunizations because of the expense
  - 40% do not offer all the required immunizations

\*Elisabeth Rosenthal, NY Times, JULY 2, 2014

## The Price of Prevention: Vaccine Costs Are Soaring\*

- The number of vaccine patent applications rose

- And this doesn't figure in the price of autism, ADHD, asthma, food allergies, etc.

Dr. Lindsay Irvin, pediatrician (She remortgaged her home to afford their rising prices)

- 33% of family doctors are considering giving up immunizations because of the expense
- 40% do not offer all the required immunizations

\*Elisabeth Rosenthal, NY Times, JULY 2, 2014

## Aluminum Adjuvant in Vaccines\*

- DTaP (diphtheria, tetanus, and pertussis): **170–625 mcg**, depending on manufacturer
- Hepatitis A: **250 mcg**
- Hepatitis B: **250 mcg**
- Hib (for meningitis; PedVaxHib brand only): **225 mcg**
- HPV: **225 mcg**
- Pediarix (DTaP–hepatitis B–polio combination): **850 mcg**
- Pentacel (DTaP–Hib–polio combination): **330 mcg**
- Pneumococcus: **125 mcg** (emphasis added)

\*[vactruth.com/2014/01/28/toxic-levels-of-aluminum/](http://vactruth.com/2014/01/28/toxic-levels-of-aluminum/)

## **HPV Vaccine Linked to Nervous System Disorder and Autoimmunity\***

“Two recent studies in medical literature describe seven girls and young women who were severely debilitated by a disorder ... following HPV vaccination.”

Postural Orthostatic Tachycardia Syndrome (POTS)

Also: links to multiple sclerosis, systemic lupus erythematosus and rheumatoid arthritis

“Molecular mimicry” leads to autoimmune disease

\*Celeste McGovern, GreenMedInfo, Apr. 24, 2014

## **Symptoms of POTS**

"persistent incapacitating headaches, dizziness, recurrent syncope, lower extremity weakness, poor motor coordination, fatigue, neck pain, joint pains, numbness in the legs, blurred vision, photophobia, phonophobia, cognitive impairment, insomnia, tachycardia, dyspnea, impaired thermoregulation, cold extremities, blush discoloration of toes, excessive hair loss, gastrointestinal (GI) disturbances, altered sense of taste, diminished appetite, and weight loss"

## **Studies find Flu shots can harm your heart, infant and fetus\***

- Flu vaccines only work against 10% of the viruses that cause flu-like symptoms
- Flu vaccines elicit inflammatory reactions that may harm the human heart, the developing fetus and the fragile immune system of infants
- Do the theoretical benefits really outweigh the known harms?

\*Sayer Ji,  
[naturalcuresnotmedicine.com/2014/06/studies-find-flu-shots-can-harm-heart-infant-fetus.html](http://naturalcuresnotmedicine.com/2014/06/studies-find-flu-shots-can-harm-heart-infant-fetus.html)

## **Narcolepsy and H1N1 Vaccine\***

- “Narcolepsy is a sleep disorder characterized by excessive daytime sleepiness and is often associated with cataplexy (episodic muscle weakness) triggered by emotion such as laughter or anger.”
- “Nocturnal sleep is usually fragmented and may be associated with sleep paralysis and hypnagogic hallucinations”
- Caused by destruction of neurons in hypothalamus
- 14-fold increased risk following H1N1 vaccine

\*D O'Flanagan et al. Eurosurveillance 19(17), 01 May 2014

## Methodological Issues and Evidence of Malfeasance in Research Purporting to Show Thimerosal in Vaccines Is Safe\*

- Over 165 studies have found Thimerosal to be harmful:
  - Death, allergic reactions, malformations, autoimmune reactions, developmental delay
  - Neurodevelopmental disorders, including tics, speech delay, language delay, attention deficit disorder, and autism
- Six studies used by the CDC to support Thimerosal's safety are flawed

\*B Hooker et al., *BioMed Research International* 2014, Article ID 247218

## MMR and Autism

- Andrew Wakefield found a connection in 1998 in a now retracted publication\*
- CDC claimed proof of no link in 2004 paper\*\*
- Whistleblower, Dr. William Thompson, has just come forward:
  - Data supported significant increased risk for autism in black males with early vaccine
  - Demand for birth certificate hid this finding
- I believe it has to do with glutamate!

\*A Wakefield et al., *The Lancet* 1998; **351** (9103): 637–41. (RETRACTED)

\*\*F DeStefano et al., *Pediatrics* 2004;113;259-266 .

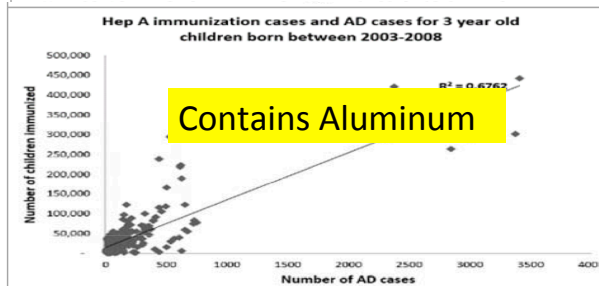
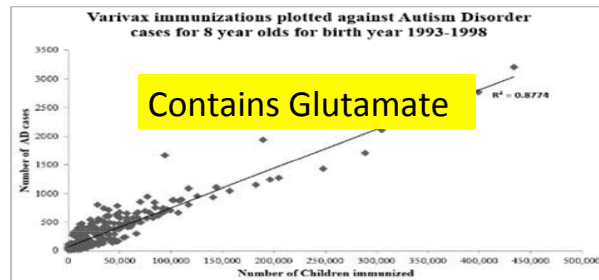
## Glutamate is an Additive in Vaccines!

- Flu vaccines (FluMist), MMR (measles, mumps and rubella), Rabies vaccine and Varicella vaccine (chicken pox) all contain glutamate
- Anecdotal evidence links these vaccines with autism
- My own studies on VAERS revealed a correlation between autism and MMR\*
- **Glyphosate's depletion of manganese prevents glutamate breakdown**



\*S. Seneff et al., Entropy 2012, 14, 2227-2253.

## Varivax and Hepatitis A Vaccines: Linked to Autism\*



\*TA Deisher et al., Journal of Public Health and Epidemiology 6(9), 271-284, 2014.



# Influenza

## Bacteria can Swim Across Leaky Gut Barrier!

Are they escaping the toxic gut environment?



BLOOD

Or are they coming in to help us out??

## Does Influenza Virus Transport Sulfate?

- **Influenza virus**

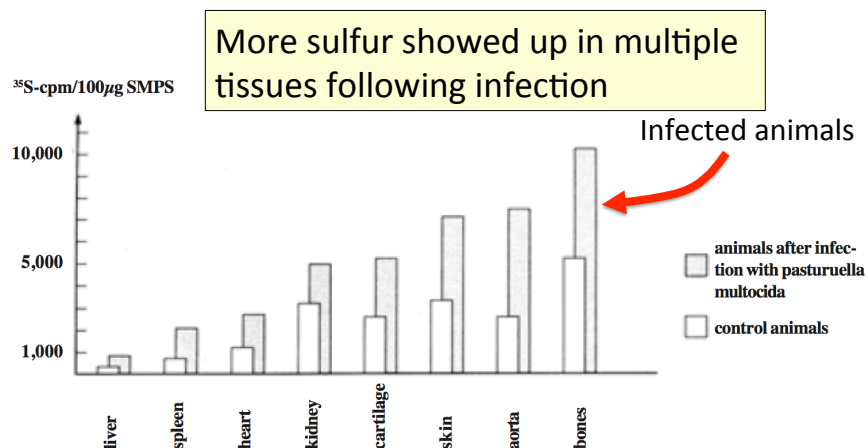
- Infects muscle cells and causes muscle wasting\*
- Incorporates *sulfated mucopolysaccharides* synthesized by the host cell into its own plasma membrane\*\*
- Inhibits mucopolysaccharide incorporation into the host cell's membrane.\*\*

*Is viral infection an opportunity to steal sulfate from muscle cells and deliver it to the blood?*

\* HA Kessler et al., JAMA 1980 243(5), 461-462.

\*\* Nakamura and Compans, Virology 79(2), 1977, 381-392.

## Is This True More Generally?\*



Mucopolysaccharides labelled with radioactive sulfur to measure growth

\* Bernhard Muschlien, Inflammations and Their Therapy by Means of Isopathy

## Influenza (Viral Disease)

- 1/3 of infected individuals are asymptomatic
  - These are people with plenty of sulfate?
- Flu vaccine is aggressively promoted in US and elsewhere for protection
  - Often required in healthcare workers
  - Big mistake in pregnant women (mercury)
  - Claims of effectiveness are probably exaggerated
- Treatment includes Tamiflu and dextran sulfate

## Flu Vaccine Increases Risk to Other Respiratory Infections\*

- Double-blind randomized trial conducted in Hong Kong
- 115 children aged 6–15 years
  - Received 2008–2009 seasonal trivalent influenza inactivated vaccine (TIV) or placebo
  - Monitored over following 9 months
- TIV recipients did not have a significant reduction in risk to flu
- TIV recipients had a **4.4-fold** increased risk to non-influenza infections



\*BJ Cowling et al., CID 2012:54, 1778-1783.

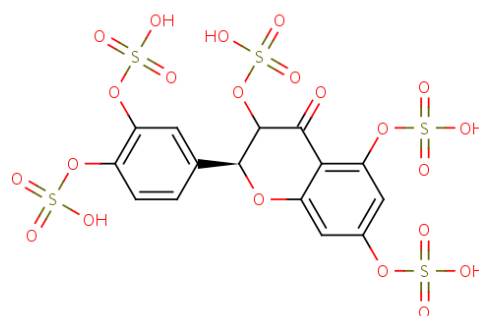
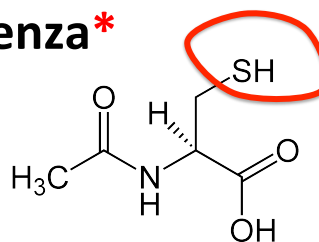
## Studies find flu shots can harm your heart, infant and fetus\*

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\*Sayer Ji,  
[naturalcuresnotmedicine.com/2014/06/studies-find-flu-shots-can-harm-heart-infant-fetus.html](http://naturalcuresnotmedicine.com/2014/06/studies-find-flu-shots-can-harm-heart-infant-fetus.html)

## Supplement and Dietary Protection from Influenza\*

- N-acetyl cysteine
- Green tea (catechines)



\*S. De Flora et al., Eur Respir J 10 (7): 1535–1541.

## Muscle Aches and Pains with Flu\*

“Patients with an influenza-like illness should be observed for signs and symptoms of rhabdomyolysis and myoglobinuria during the course of their illness”

*Is the virus leaching sulfate from the muscles?*

\*RA Minow et al., Ann Intern Med. 1974;80(3):359-361.

Tamiflu and dextran sulfate are drugs to suppress flu virus replication that are imitations of products produced by gut bacteria

## "TLR5-mediated sensing of gut microbiota is necessary for antibody responses to seasonal influenza vaccination"\*

- Intestinal microbes enhance the ability of the flu vaccine to "take"
- Weaker flu vaccine response in germ-free mice or mice treated with antibiotics



\*J.Z. Oh et al., Immunity, doi:10.1016/j.immuni.2014.08.009, 2014.

## "Flu is a threat and Tamiflu is the answer?"\*

*Tamiflu* inactivates neuraminidase

- This prevents viral entry into cells

Side effects include:

- Convulsions, delirium and delusions
- Allergic reactions including anaphylaxis
- Hepatitis and elevated liver enzymes
- Nausea, diarrhea
- Nightmares
- Headache
- Skin rash



\*<http://articles.mercola.com/sites/articles/archive/2012/02/07/recommended-tamiflu-has-flawed-results.aspx>

## “Flu is a threat and Tamiflu is the answer?”\*

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S

Shikimate is a precursor to the active ingredient in Tamiflu

- Headache
- Skin rash



\*<http://articles.mercola.com/sites/articles/archive/2012/02/07/recommended-tamiflu-has-flawed-results.aspx>

## Inhibition of Neuraminidase by Dextran Sulfate\*

- Negatively charged, sulfated polysaccharide
  - Synthesized from sucrose by lactic-acid bacteria
  - Suppresses replication of influenza A virus strain
  - Induces viral aggregation at cell surface
  - Inhibits neuraminidase activity (likely due to its negative charge)
  - Used as drug to treat flu

\*H Yamada et al., Antiviral Res. 2012 Dec;96(3):344-52.

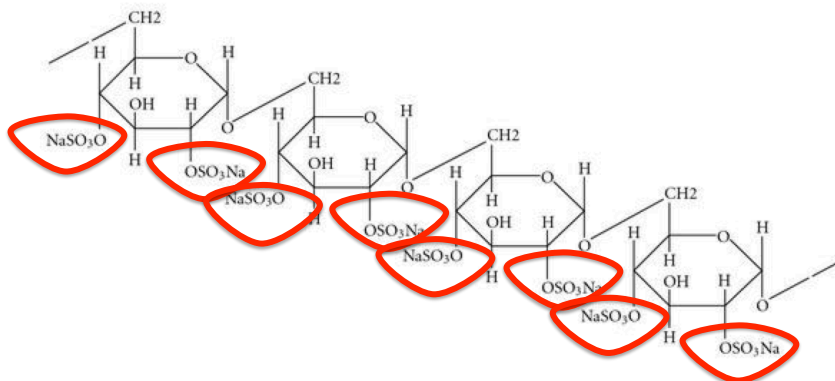
## Inhibition of Neuraminidase by Dextran Sulfate\*

- Negatively charged, sulfated polysaccharide

A bacterium that interferes with flu virus can continue to synthesize and transport dextran sulfate to distant places. Dextran sulfate as a drug is a “trick”.

\*H Yamada et al., Antiviral Res. 2012 Dec;96(3):344-52.

## Dextran Sulfate





## WIKI on Dextran

The antithrombotic effect of dextran is mediated through its binding of red blood cells, platelets, and the endothelial cells in the vascular wall, increasing their *electronegativity* and thus reducing red blood cell *aggregation* and platelet *adhesiveness*.

## Side Effects from Dextran Sulfate Treatment

- Anaphylaxis (itchy rash, throat swelling, and low blood pressure)
- Excess fluid in blood
- Pulmonary edema
- Cerebral edema
- Platelet dysfunction

The molecule by itself can't multiply whereas bacteria that produce it can!!

## Recapitulation

- Better to prevent flu than to treat it
- Better to prevent flu through nutrition than through vaccines
- Flu is associated with aching muscles: is the virus forcing muscles to give up their sulfate for redistribution to the vasculature?
- Is glyphosate's disruption of gut bacteria causing increased susceptibility to flu?
- Treating flu can lead to severe "side effects"
  - Are these the consequence of the virus being aborted early before it can follow through on its promise to deliver sulfate to the blood stream?

## Antibiotics

*“We've reached the end of antibiotics, period... We're here. We're in the **post-antibiotic era**. There are patients for whom we have no therapy, and we are literally in a position of having a patient in a bed who has an infection, something that five years ago even we could have treated, but now we can't.”*

**Dr. Arjun Srinivasan**

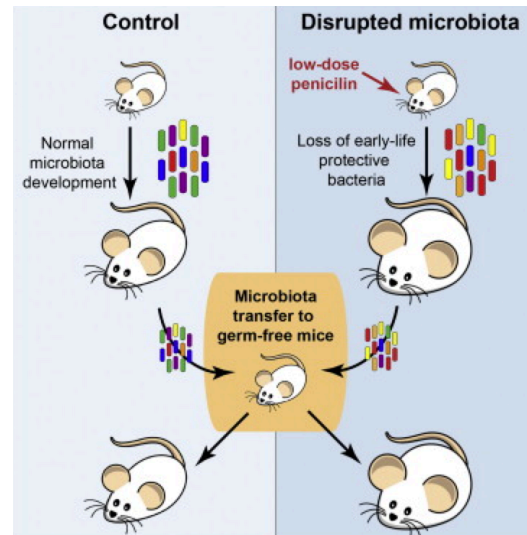
Frontline, October 22, 2013

## **Antibiotics Cause Obesity\***

- Obese and lean humans differ in microbiota
- In humans, antibiotics early in life are associated with increased risk of being overweight later in childhood
- Antibiotics are used in farm animals to promote growth
- In mouse studies, certain bacteria are preferentially harmed and the imbalance is sustained after antibiotics are no longer administered

\*LM Cox et al., *Cell* 158, 705–721, August 14, 2014.

## Disrupted Gut Bacteria Lead to Obesity\*



\*LM Cox et al., *Cell* 158, 705–721, August 14, 2014

## Association of Antibiotics in Infancy With Early Childhood Obesity\*

- 69% of children were exposed to antibiotics before end of first year
- This increase was associated with increased risk to obesity, with broad spectrum antibiotics having a more significant role
- Asthma and wheezing also predicted obesity

*NOTE: Glyphosate is a broad-spectrum antibiotic*

\*L. Charles Bailey et al., *JAMA Pediatr.* Published online September 29, 2014

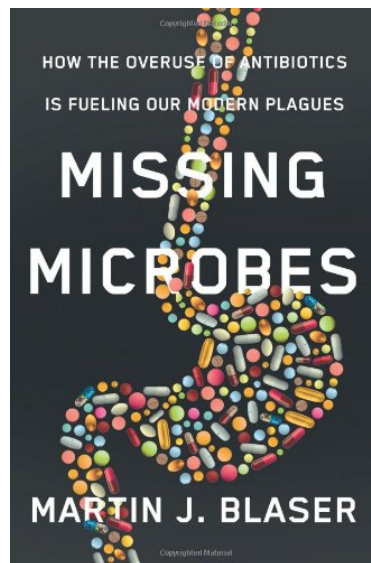
## Poultry firms systematically feed antibiotics to flocks\*

- Low dose antibiotics were routinely used in five major poultry firms: Tyson, Pilgrim's, Perdue, George's and Koch.
- Use of any antibiotic at chronic low levels leads to increased resistance to multiple other antibiotics



\*<http://www.reuters.com/investigates/special-report/farmaceuticals-the-drugs-fed-to-farm-animals-and-the-risks-posed-to-humans/>

## Missing Microbes!



## Quotes from Missing Microbes\*

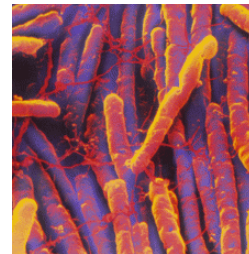
“Over the past decade, patients admitted to our hospitals are on average sicker than they have been in the past. Chemotherapies are more successful, but there are more side effects. Patients are surviving more complicated surgeries, but recovery takes longer.”

“Transplantation saves lives but requires immuno-suppressive drugs, making people vulnerable to infection. ... More hospitalized patients receive more drugs of all kinds, including agents that suppress gastric acid and gut motility, and, of course, *more antibiotics, often multiple kinds, simultaneously and sequentially.*”

\*M.J. Blaser, Missing Microbes, p. 187

## Clostridium difficile\*

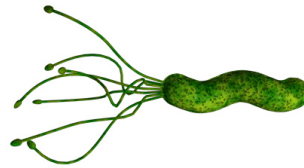
- In US, 250,000 people are hospitalized each year for C diff infections, and 14,000 of them die
- C diff infections became more severe about 10 years ago
- Several different strains with different deletions lead to more toxins
  - Points to some common *change in the environment*
- Same highly toxic clones are present in both Europe and North America



\*M.J. Blaser, Missing Microbes, p. 188

## “*Helicobacter pylori* and Esophageal Disease: Wake-up Call?”\*

- Marshall and Warren discovered *Helicobacter pylori* in 1979-1982, and won the Nobel prize in medicine in 2005
- *H pylori* → gastritis → ulcers
- GERD → Barrett’s esophagus → Esophageal cancer
  - **INVERSE** relationship with *H pylori*!
- Today, fewer than 6% of US children carry *H pylori*
  - This is setting them up for many diseases



\*MJ Blaser, Gastroenterology. Dec 2010; 139(6): 1819–1822

## More Issues with Loss of *H Pylori*\*

- Stomach produces grehlin and leptin to control appetite
  - *H pylorus* regulates this
- Could childhood onset diabetes and obesity be tied to loss of *H pylori*?

“If *H pylori* protects our esophagus, our airways, and maybe our waistline, should we now begin thinking about giving it back in some form, especially to children?”

\*MJ Blaser, Gastroenterology. Dec 2010; 139(6): 1819–1822

## H pylori (HP) suppression linked to kidney stones\*

- Oxalobacter formigenes (OF) protect from *calcium oxalate* stones (kidney stones)
  - Amoxicillin and clarithromycin are commonly administered to treat H pylori infection
- “Antibiotics for HP infection effectively reduced colonization with OF, an effect present at 1 and 6 months after treatment. The lasting elimination of OF could be associated with hyperoxaluria and be a factor in recurrent kidney stone disease.”

\*V Kharlamb et al., J Endourol. 2011 Nov;25(11):1781-5.

## H pylori (HP) suppression linked to kidney stones\*

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Autistic children have high serum oxalate.  
There's also the glyphosate connection.

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\*V Kharlamb et al., J Endourol. 2011 Nov;25(11):1781-5.



## Antibacterial Soaps!



## Antiseptic Mouthwash Raises Blood Pressure\*

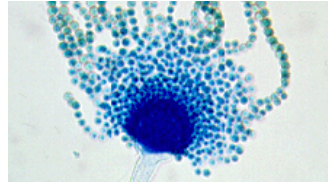
- Bacteria in the mouth reduce nitrates and nitrites to nitric oxide – relaxes vessels and lowers blood pressure
- Antiseptic mouthwash treatment reduced oral nitrite production by 90% ( $p < 0.001$ ) and plasma nitrite levels by 25% ( $p = 0.001$ ) compared to the control period
- Systolic and diastolic blood pressure increased by 2–3.5 mm Hg



\*V Kapil et al., Free Radic Biol Med. Feb 2013; 55(C): 93–100.

## Fungicides Leading to Aspergillus Resistance in Humans\*

- Diseases caused by Aspergillus affect millions of people worldwide, causing high morbidity and mortality
- Samples from rural areas in West Yorkshire where fungicide was used on crops were resistant to human antifungal treatments
- Transplant patients, those with leukaemia and people who suffer from severe asthma are all especially susceptible



\*[manchester.ac.uk/discover/news/article/?id=12497](http://manchester.ac.uk/discover/news/article/?id=12497)

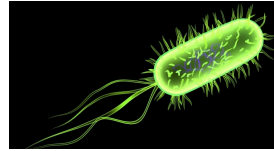
## Bacteria have a lot of weapons that they can use to fight off antibiotics\*

- They can break them down
- They can build a barrier so they can't get into the cell
- They can pump them out
- They can wait them out: go into hibernation
- They share ideas with their "friends"

\*Dr. Arjun Srinivasan, Frontline, October 22, 2013,

## Bacteria Can Wait it Out to Tolerate Antibiotics\*

“The great therapeutic achievements of antibiotics have been dramatically undercut by the evolution of bacterial strategies that overcome antibiotic stress”



*One example:*

*E. coli* repeatedly exposed to ampicillin adapt to stay dormant for longer periods of time—just long enough to outlast the antibiotic treatment.

\*O Fridman et al., Nature (2014) doi:10.1038/nature13469

## Lyme Disease and Chronic Fatigue

## **“Lyme Disease: Call for a “Manhattan Project” to combat the epidemic”\***

- Lyme disease is the most common tick-borne illness today
  - Mainly women and children
  - CDC has grossly underestimated the count
- Number of US cases may be as high as one million, and is at least 6-fold higher than AIDS
- Vaccine-based solution is not an option



\*RB Stricker and L Johnson, PLOS Pathogens 2014 10(1):e1003796.

## **Is Lyme Disease Linked to Autism, Parkinson’s and Other Chronic Conditions?\***

- Lyme is now the #1 vector-borne disease in America, rising from #5 in 2009.
- Disrupted gut bacteria enhance symptoms
- Metal toxicity enhances symptoms
- Lyme can predispose the child to autism
- Lyme can imitate Parkinson’s disease in the adult

\*[healing4soul.com/articles/lyme/227-is-lyme-disease-linked-to-autism-parkinsons-and-other-chronic-conditions](http://healing4soul.com/articles/lyme/227-is-lyme-disease-linked-to-autism-parkinsons-and-other-chronic-conditions)

## WIKI on Borrelia burgdorferi

“*B. burgdorferi* [infective agent in Lyme disease] is one of the few pathogenic bacteria that can survive without iron, having replaced all of its iron-sulfur cluster enzymes with enzymes that use *manganese*, thus avoiding the problem many pathogenic bacteria face in acquiring iron.”

*B. burgdorferi* infections have been linked to non-Hodgkin lymphomas – commonly associated with pesticides



## WIKI on Borrelia burgdorferi

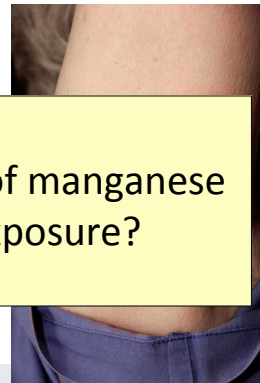
“*B. burgdorferi* [infective agent in Lyme disease] is one of the few pathogenic

b  
h  
c  
m

Is this connected to the dysbiosis of manganese associated with glyphosate exposure?

many pathogenic bacteria face in acquiring iron.”

*B. burgdorferi* infections have been linked to non-Hodgkin lymphomas – commonly associated with pesticides



## Lyme Pathogen Induces Autophagy\*

- Borrelia induces pro-inflammatory IL-1 $\beta$  and IL-6 expression in human cells
- Borrelia also induces autophagy expression
  - Clears cellular debris
- Impaired autophagy expression leads to enhanced production of inflammatory agents

**Hypothesis:** Manganese is needed for healthy autophagy

\*K Buffin et al., J. Biol. Chem. 2013, 288:8658-8666.

## Summary

- Our gut bacteria are essential to our health, and they are in trouble
- The gut-brain axis links gut dysbiosis to neurological disorders & obesity
- Vaccines are not the answer: they are a causal factor in autism, anaphylaxis and food allergies
- Antibiotics are not the answer: they are leading to massive antibiotic resistance among bacteria and a dead end in treatment plans
- Influenza and other infections can be explained as ways to improve the distribution of sulfate and manganese to the tissues