

# Treatment Approaches to Vector Borne Disease and Environmental Illness

in the  
Pregnant and Breastfeeding Patient

# Normal physiological changes in pregnancy and breastfeeding

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- Weight gain
- Cardiovascular
- Immunologic
- Metabolic
- Renal
- Respiratory
- Hormonal
  - Thyroid
- Hematologic

# Weight gain

- Enlarging uterus with growing fetus
- Placenta and amniotic fluid
- Acquisition of fat
- Water retention
- Breasts increase 1-2 bra sizes, then another 1-2 sizes with initial engorgement and milk production, by 8-12 weeks post partum reduce to 1-2 times pre-pregnancy bra cup size

# Cardiovascular changes

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- Blood volume slowly increases by 40-50%
  - Mainly due to increased aldosterone
- Heart rate increases about 15 beats/min
  - Decrease in vagal tone
  - Increase in sympathetic tone
- Stroke volume increases
  - Starling's law – higher blood volume creates higher stroke volume

# Cardiovascular changes

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- Cardiac output increases by 50%
  - Rises from 4 to 7 liters in 2nd trimester
- Systemic vascular resistance decreases
  - Vasodilation due to elevated progesterone
  - Diastolic blood pressure decreases between 12–26 weeks, and increases again to pre-pregnancy levels by 36 weeks

# Renal and lower GU changes

- Increase in kidney and ureter size
- Glomerular filtration rate (GFR) commonly increases by 50%, returning to normal around 20 weeks postpartum
- Decreased blood urea nitrogen (BUN) and creatinine
- Glycosuria (saturated tubular reabsorption) possible
- Renin-angiotensin system is up-regulated
  - Causing increased aldosterone levels
- Pregnancy reduces species/genus diversity of vaginal microbiome

# Gastrointestinal changes

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- Nausea and vomiting (morning sickness)
  - Due to elevated  $\beta$ -hCG and should resolve by 14 to 16 weeks
- Prolonged gastric emptying time
- Decreased gastroesophageal sphincter tone
  - Can lead to acid reflux
- Decreased colonic motility
  - Leads to increased water absorption and constipation

# Respiratory changes

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- Progesterone has noticeable effects on respiratory physiology, increasing minute ventilation by 40% in the first trimester
- Greater chance of hypoxia due to low minute volume and lower vital capacity as uterus enlarges



# Immunologic changes

- Immune tolerance

- Placenta creates immunologically privileged site although maternal IgG passes to fetus
  - Several mechanisms such as Neurokinin B, trophoblasts, syncytium
- Regulatory T cells may play a role
- Shift from cell-mediated toward humoral-immunity may occur

# Immunologic changes

- Sequelae of insufficient tolerance
  - Spontaneous abortion
    - Akin to transplant rejection
  - Rh incompatibility
    - Maternal attack on fetal RBCs
  - Pre-eclampsia
    - Autoimmune attack on placenta
    - Hypercoagulability

# Hormonal changes

## ■ Placenta

- Human Chorionic Gonadotropin (hCG) – AM sickness
- Estrogen – AM sickness, breast duct development
- Progesterone – 1<sup>st</sup> by corpus luteum, then placenta
- Human placental lactogen (hPL)
  - Stimulates lipolysis and fatty acid metabolism by mother
  - Conserves blood glucose for fetus
  - Can decrease maternal insulin sensitivity contributing to gestational diabetes

## ■ Maternal

- Pituitary increases 50% in size - makes more prolactin
- Parathyroid gland - increase in  $\text{Ca}^{++}$  absorption
- Adrenal gland - increase in cortisol and aldosterone

# Hormones – thyroid in pregnancy

- Normal changes in thyroid
  - 10-15% increase size, but palpable goiter requires investigation
  - hCG – weak stimulator of thyroid (low TSH in 1<sup>st</sup> trimester, then returns to normal)
  - Estrogen – increases thyroid hormone binding globulin (THBG) elevating levels protein bound hormone
  - If T3, T4, TSH, within normal limits, the thyroid is functioning normally

# Hormones – thyroid in pregnancy

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- Baby is dependent on mother for thyroid hormone until about end first trimester then can make its own
- Baby needs iodine from mother throughout the whole pregnancy – therefore make sure mother gets at least 200 µgm iodine daily
- Thyroid autoimmune antibodies do cross placenta
  - Check for thyroid autoantibodies each trimester
  - Thyroid autoimmunity most common autoimmune disorder in women of reproductive age with a prevalence between 5-15%
  - Hashimoto's thyroiditis most common

# Hyperthyroidism – Graves' disease

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- Uncontrolled hyperthyroidism in mother can cause the following in the baby
  - Tachycardia
  - Small for gestational age
  - Prematurity
  - Stillbirth
  - Possibly congenital defects

# Hypothyroidism – Hashimoto's

- Inadequately treated hypothyroidism can cause
  - Maternal anemia
  - Myopathy
  - Congestive heart failure
  - Pre-eclampsia
  - Placental abnormalities
  - Miscarriage
    - Significant association between the presence of thyroid autoantibodies, infertility and higher miscarriage rate

Thyroid Autoimmunity, Infertility and Miscarriage Gerasimos E. Krassas; Petros Perros; Athina Kaprara *Expert Rev Endocrinol Metab.* 2008;3(2):127-136.

[http://www.medscape.com/viewarticle/576126\\_4](http://www.medscape.com/viewarticle/576126_4)

# Hypothyroidism – Hashimoto's

- Inadequately treated hypothyroidism can cause
  - Preterm delivery
  - Low birth weight infants
  - Postpartum hemorrhage
  - Neonatal respiratory distress
  - Fetal abnormalities
    - Hydrocephalus
    - Hypospadias

Thyroid Autoimmunity, Infertility and Miscarriage Gerasimos E. Krassas;  
Petros Perros; Athina Kaprara *Expert Rev Endocrinol Metab.*  
2008;3(2):127-136.

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# Hypothyroidism – Hashimoto's

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- Pregnant women with autoimmune thyroid antibodies
  - Prone to subclinical or overt hypothyroidism
    - Due to reduced functional reserve of thyroid unable to meet increased hormone requirement of pregnancy
  - TPO titers are on average 60% lower at parturition than when first pregnancy

# Thyroid testing during pregnancy

- Levothyroxine requirements often increase during pregnancy
  - Usually by 25-50%
  - Rarely by 100%
- Check TFTs every 6-8 weeks during pregnancy
- If levothyroxine dose changed, check TFTs in 4 weeks
- Patient may go back to pre-pregnancy dose post-partum
- Prenatal vitamins contain iron and calcium that can impair the absorption of thyroid medicine
  - Separate levothyroxine and prenatal vitamins by at least 2-3 hours

# Normal thyroid test results in pregnancy

Thyroid Test	1 <sup>st</sup> trimester	2 <sup>nd</sup> trimester	3 <sup>rd</sup> trimester
TSH	normal or decreased	normal	normal
Free T4	normal	normal	normal
Free T3	normal	normal	normal
Total T4	high	high	high
Total T3	low	low	low
T3 Resin Uptake	normal	normal	normal
Free T4 Index	normal	normal	normal

# Post partum thyroiditis

- In the United States, postpartum thyroiditis occurs in approximately 5-10% of women
- Postpartum thyroiditis can cause first thyrotoxicosis then hypothyroidism
- 20% reoccurrence with subsequent pregnancies
- Risks include:
  - Any autoimmune disease
  - Thyroid autoantibodies (higher levels = higher risk)
  - Previous thyroid dysfunction
  - Family history of thyroid disease

# Metabolic changes in pregnancy

- Early pregnancy is like an anabolic state
  - Increase in maternal fat stores
  - Small increases in insulin sensitivity
  - Nutrients are stored in early pregnancy to meet the feto-placental and maternal demands of late gestation and lactation
- Late pregnancy is like a catabolic state
  - Decreased insulin sensitivity – increased insulin resistance resulting in increased maternal glucose and free fatty acid concentrations
  - Greater substrate availability for fetal growth

# Metabolic changes in pregnancy

- Overall increased requirement for nutrients due to fetal growth and maternal fat deposition caused by steroid hormones, lactogen, and cortisol.
- Protein metabolism
  - One kilogram of extra protein is deposited, with half going to the fetus and placenta, and another half going to uterine contractile proteins, breast glandular tissue, plasma protein, and hemoglobin.
- Carbohydrate metabolism
  - Maternal insulin resistance can lead to gestational diabetes. Increased liver metabolism is also seen, with increased gluconeogenesis to increase maternal glucose levels.

# Hematologic changes in pregnancy

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- Plasma volume increases by 50%
- Red blood cell volume increases by 20–30%
- Hematocrit decreases due to dilution
- White blood cell count increases - up to 20 mg/ml during stress
- Platelets decrease to low normal values - 100-150 mil/ml

# Normal hemostasis

<b>Anti-coagulant:</b>		<b>Fibrinolysis:</b>
Anti-thrombin Protein S Protein C		uPA, tPA Plasminogen (plasmin) Streptokinase Lumbrokinase, nattokinase
	<i>Clot degradation</i>	
	<b>Normal hemostasis</b>	
	<i>Clot formation</i>	
<b>Pro-coagulant:</b>		<b>Anti-fibrinolytic:</b>
Thrombin Tissue Factor (on outer surface blood vessels) Platelet factors		PAI-1 Lipoprotein(a) $\alpha$ -2 anti-plasmin TAF-1



# Pregnancy is hypercoagulable state

- Changes in liver metabolism
  - Increases in fibrinogen (up to 3x nl), thrombin, Factor VIII, PAI-1, PAI-2 (from placenta)
  - Decreases in protein S
- Increased risk for thrombosis (already 5x nl)
  - Underlying thrombophilia or prothrombotic state
    - Genetic - antithrombin III deficiency, Factor V Leiden, protein C or S deficiencies, lipoprotein a
    - Acquired – infections, toxins, antiphospholipid antibodies or lupus anticoagulant
  - Cesarean section

# Consequences of HC in pregnancy

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- Maternal hypertension
- Deep vein thrombosis
- Pre-eclampsia
- Recurrent miscarriage
- Placental vascular thrombosis
- Small for gestational age
- Maternal death
  - Pulmonary emboli
  - Eclampsia

# Hypercoagulability in chronic illness

- Infections causes a pro-coagulant state
  - Fibrin deposition on endothelial membrane can trap toxins and infections
- Heavy metals can cause a hypercoagulable response
- Inflammatory cytokines worsen hypercoagulable state
  - Causing increase in pro-coagulants and anti-fibrinolysis
- Most chronically ill patients have genetic predisposition
  - Protein S or C deficiencies
  - Elevated lipoprotein a
  - Antithrombin III deficiency
  - Factor V Leiden

# Lyme and pregnancy

- Lyme can pass through the placenta and infect a growing baby at any stage of pregnancy
- At birth, the baby can die, be anywhere from severely to mildly ill or appear completely well
- Maternal antibiotic treatment during pregnancy does not guarantee that the fetus will be free of infection
- Mothers with Lyme disease should be treated throughout pregnancy
- Breast feeding poses unclear risks as *Bb* has been cultured out of breast milk

# Treat infected pregnant women

- Luft, BJ, Halpern, JJ, Datwyler, RJ et al., A perspective on the Treatment of Lyme Borreliosis. *Reviews of Infectious Diseases* **1989**; 2(6): S1518-S1525
  - “The aim of treatment of early Lyme disease during pregnancy is not only to treat the infection and prevent long-term sequelae but to eliminate the infections as quickly as possible so as to prevent congenital transmission to the fetus.”

# Transplacental passage of *Borrelia*

- Schlessinger, PA, Duray, PH, Steere, AC, et al., Maternal-fetal transmission of the Lyme disease spirochete *Annals of Internal Medicine* **1985**; 103: 67-8
- Markowitz, L., Steere, AC, et al., Lyme disease during pregnancy. *JAMA* **1986**; 255: 3394-6
- Barbour, AG, Duray, PH et al., Culture positive seronegative transplacental Lyme borreliosis infant mortality. *Arthritis Rheumatism* **1987**; 30(suppl): S50
- MacDonald, A., Burgdorfer, W. Stillbirth following maternal Lyme disease *NY State J Med* **1987**; 87(616).

# *Bb* can infect the fetus despite maternal antibiotic treatment

- Weber, K., Duray, PH., et al., *Borrelia burgdorferi* in a newborn despite oral penicillin for Lyme Borreliosis during pregnancy *Pediatric Infectious Disease Journal* **1988**; 7(4):286-289.
- MacDonald, A. 1989: Gestational Lyme Borreliosis Implications for the Fetus. *Rheumatic Disease Clinics of North America* November **1989**; 15(4): 657-677
  - *Borrelia* spirochetes found at autopsy in fetal brain, liver, adrenal glands, spleen, bone marrow, heart and placenta
  - None of the infected tissues showed any sign of inflammation

# *Bb* found in breast milk

- Schmidt, et al. Detection of *Borrelia burgdorferi* DNA by polymerase chain reaction in the urine and breast milk of patients with Lyme Borreliosis. *Diagn Microbiol Infect Dis* **1995**; 21(3): 121-128
- Gardner, T. Lyme disease. *Infectious disease of the fetus and newborn infant*, Remington and Klein, ed. Philadelphia, Saunders, **1995**. p. 447-528



# Transmission of *Bb* via semen

- Gustafson, J. M. (1993) The *in utero* and seminal transmission of *Borrelia burgdorferi* in *Canidae*. PhD Thesis, University of Wisconsin, Madison.
  - Fetal tissue from female dogs that had been artificially inseminated with semen from *Borellia burgdorferi* infected dogs were PCR positive for *Bb*

# Viable *Bb* in stored semen

- Kumi D J, Harris O. Viability of *Borrelia burgdorferi* in stored semen. *Br Vet J* **1995** Mar-Apr;151(2): 221-4 PMID:8920118
- Three species tested: dog, bull, ram
  - *Borrelia burgdorferi* survived semen cryopreservation
  - *Borrelia burgdorferi* survived significantly better than spermatozoa

# Human sexual transmission *Bb*

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- Stricker, R.B., D.H. Moore, and E.E. Winger. Clinical and immunologic evidence of transmission of Lyme disease through intimate human contact. *J. Invest. Med.* **2004**; 52, S15.

# *Babesia* gestationally transmitted

- Fox, et al., Neonatal Babesiosis: Case Report and Review of the Literature. *Pediatr Infect Dis J* **2006**; 25(2):169.
- Sethi, S., Alcid, D., Kesarwala, H., Tolan, R.W. Jr. Probable congenital babesiosis in infant, New Jersey, USA. *Emerg Infect Dis.* **2009**;15:788–91.
- Yager, P., Luginbuhl, L., Dekker, J. Case Records of the Massachusetts General Hospital, Case 6-2014: A 35-Day-Old Boy with Fever, Vomiting, Mottled Skin, and Severe Anemia. *N Engl J Med* **2014**;370:753-62.

# *Bartonella* gestationally transmitted

- Johnson R1, Ramos-Vara J, Vemulapalli R. Identification of *Bartonella henselae* in an aborted equine fetus. *Vet Pathol.* **2009** Mar;46(2):277-81.
- Breitschwerdt et al., Molecular Evidence of Perinatal Transmission of *Bartonella vinsonii* subsp. *berkhoffii* and *Bartonella henselae* to a Child. *Journal of Clinical Microbiology* June **2010**, (48):6, p. 2289–2293.
- Tuya, Escalante-Kanashiro, Tinco, Pons, Petrozzi, Ruiz, del Valle. Possible vertical transmission of *Bartonella bacilliformis* in Peru. *Am J Trop Med Hyg.* **2015** Jan;92(1):126-8.

# RF *Borrelia* gestationally transmitted

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- CDC: MMWR. Tickborne relapsing fever in a mother and newborn child--Colorado, 2011. *Morb Mortal Wkly Rep.* **2012** Mar 16;61(10):174-6.

# Gardner's meta-analysis

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- Meta-analysis of 263 pregnancies affected by Lyme
- In mothers with active Lyme disease
  - Treated: 14.6% pregnancies with sequelae
  - Untreated: 66.7% with sequelae
  - Unknown treatment: 30.3% with sequelae
- Highest rate of adverse outcome (72.7%) in women with infection acquired prior to or during first trimester, without treatment

# Gardner's meta-analysis

- Specific adverse outcomes included
  - Cardiac 22.7%,
  - Neurologic 15.2%,
  - Orthopedic 12.1%,
  - Ophthalmic 4.5%,
  - Genitourinary 10.6%,
  - Miscellaneous anomalies 12.1%,
  - 2nd trimester demise 12.1%



# Dr. Jones study of gestational Lyme

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- 80% irritability
- 80% cognitive problems, learning disabilities and mood swings
- 72% fatigue and lack of stamina
- 68% rashes
- 60% low grade fevers, pallor, dark circles under eyes
- 50% arthritis and painful joints
- 40% gastroesophageal reflux with vomiting and coughing
- 40% noise, light and skin sensitivity

# Dr. Jones study of gestational Lyme

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- 40% frequent upper respiratory tract infections and otitis
- 30% cavernous hemangiomas
- 30% eye problems
  - Posterior cataracts, myopia, astigmatism, conjunctival erythema (Lyme eyes), optic nerve atrophy and optic neuritis and/or uveitis
- 20% abdominal pain
- 18% developmental delays
  - Language, speech problems
  - Hypotonia

# Mold toxin exposure during pregnancy

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- Medical literature denies any significance of mold exposure to the unborn fetus
  - None take into consideration that small ionophoric molecules that are both fat and water soluble might easily diffuse through placenta
  - Sickest babies are from mold toxin exposed mothers
    - Floppy or hypertonic and jerky
    - Jaundiced
    - Heart defects
    - Irritable and difficult to console
    - Poor feeder, poor sleepers
    - FTT, developmental delays, bad reactions to vaccines

# TBD complexities same in pregnancy

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- Toxic encumbered matrix, organs and tissues
  - Environmental, metal and biological toxins
- Polymicrobial pathogenic biofilms infecting most, if not all, organ systems
- Unregulated systemic inflammation
- Vasculitis and hypercoagulability
- Mitochondrial dysfunction
- Gut dysbiosis with liver/gallbladder dysfunction
  - Dysbiotic infections
  - Dietary toxins – glyphosate, heavy metals, etc.
  - Methylation faults, genetic and epigenetic

# TBD complexities same in pregnancy

- Immune system dysfunction
  - Anergy and/or up-regulation, confusion
  - Allergic up regulation (toxins, infections)
  - Autoimmunity (thyroid)
- Biotoxin illness from biological toxins
  - Genetic predisposition – HLA type chromosome 6
  - CIRS chronic inflammatory response syndrome
    - Leptin and pro-opiomelanocortin system disruption
- Hormonal disruption CNS to periphery
- Nutritional deficiencies and deficits
  - Acquired- dietary toxins, 'indiscretions'
  - Genetic – methylation defects

# General treatment principles

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- Restore vitality
  - Rebuild vital heat and energy
- Restore health and function of matrix
  - Clear toxicity, hypercoagulability, biofilms, infections, scars, restore communication and fluidity throughout extracellular matrix
- Restore metabolic function of
  - Intestine, liver, kidney, bone marrow
- Restore regulatory function to
  - Neuro-immune, neuro-endocrine and vascular systems

# Pre-pregnancy cleanup

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- Treat infections as aggressively as tolerated
  - Pathogenic biofilms
  - Gut parasites and dysbiosis
  - TBD and opportunistic pathogens
- Chelate heavy metals
  - Get rid of amalgams before conception
- Remove toxins of all kinds
  - Bile sequesterants, sauna
  - Methylation and detoxification support
  - Clean up diet and limit toxin exposure
  - Reduce EMR exposure

# Pre-pregnancy cleanup

- Drainage and regulation medicines
  - Liver and gallbladder
    - Cholagogues
  - Kidneys
  - Lymphatics
  - CNS
- Mucor suppositories (San Pharma)
  - Start with one night a week and work up to ten in a row (total 20-30 suppositories) to clean up congestion in the pelvis



# Patient responsibilities pre-conception

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- Clean air – purifiers as needed
- Clean water – filter entire house
- Clean diet – oligoantigenic, organic, anti-inflammatory
- Tick avoidance
  - <https://www.lymedisease.org/lyme-basics/>
- Toxin avoidance in home, work, school and automobile
  - Household cleaners, personal care products, toothpaste, soaps, shampoos, hair dyes, nail polish, lotions, cosmetics, cigarettes, alcohol

# Patient responsibilities pre-conception

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- Mold avoidance – mold toxins are teratogens
  - Can cause miscarriage, intra-uterine demise
- Metal amalgam removal by biological dentist
  - [www.iabdm.org](http://www.iabdm.org)
  - <https://iaomt.org>
- Deal with root canals and cavitations
- EMR (electromagnetic radiation) reduction
  - [www.mercola.com](http://www.mercola.com) search EMF
  - [www.emfrelief.com](http://www.emfrelief.com)

# Nutritional needs preconception

- Multivitamin
  - Extra folic acid/folate/5-MTHF
  - Extra Vit D3, Vit K2
  - Extra alpha lipoic acid
- Essential fatty acids – omega 3 (later 3,6,9)
- Phospholipids
- Trace minerals
  - Iodine, manganese, magnesium, zinc, selenium
- Binders
  - Activated charcoal, clays, Microchitosan, chlorella

# Adverse effects of glyphosate

- Chelates important minerals
  - Iron
    - Leads to anemia
  - Cobalt
  - Zinc
  - Manganese
    - Mn deficiency suppresses growth of lactobacilli, contributing to gut dysbiosis
    - Mn deficiency can cause CNS ammonia and glutamate toxicity as glutamine synthetase is Mn dependent enzyme

# Adverse effects of glyphosate

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- Kills beneficial gut bacteria allowing pathogens to overgrow
- Interferes with function of cytochrome P450 enzymes
  - Leads to impaired bile flow
  - Impairs detoxification of toxic chemicals
- Interferes with synthesis of aromatic amino acids and methionine
  - Leads to shortages in glutathione, critical neurotransmitters and folate

# Adverse effects of glyphosate

- Glyphosate is a glycine analogue, is inserted in glycine's place in proteins, importantly, collagen
  - Gelatin is made from animal collagen
  - Gelatin is found in:
    - Many foods
    - Main constituent of gel caps
    - Vaccines
- Glyphosate is a teratogen
  - Microcephaly in chick embryos

A Paganelli et al. *Chem. Res. Toxicol* 2010;23(10): 1586-1595.

# Glyphosate in vaccines – Seneff

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- “The most serious consequence of glyphosate in collagen is likely to be glyphosate contamination in vaccines. Gelatin is an additive in many vaccines, and the measles, mumps and rubella (MMR) vaccine contains an especially high level of gelatin.”
- “Many vaccines test positive for glyphosate, but MMR stood out as having more glyphosate by an order of magnitude than any of the others. The live measles virus is grown on gelatin, and this provides the virus with the opportunity to incorporate glyphosate into its own proteins.”

# Patient responsibilities during pregnancy

- Ongoing compliance with lifestyle modifications
  - Clean diet
    - Organic, Paleolithic, clean meats, rare fish (if at all)
    - No processed food, no glyphosate, no HFCS, no MSG
    - Limit sugar and grains
    - Best to avoid gluten and dairy
  - Toxin avoidance
    - No smoking, no alcohol, no mold exposure, limit EMR,
  - Avoid common OTCs, e.g. acetaminophen
- Compliance with treatment protocols
  - Supplements and medicines
- Compliance with referral suggestions



# Nutritional needs during pregnancy

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- Caloric increase of 300 kcal/day
  - Increase protein to 70 or 75 g/day
  - Increase folate from 0.4 to 0.8 mg/day
- Essential fatty acids
- Phospholipids
- Choline supplementation
  - Phosphatidylcholine, acetylcholine
- Vitamins C, D, E
- Prenatal vitamins with iron and copper
- Trace minerals – Mn, Mg, selenium, zinc, iodine

# General pregnancy management

## ■ Gut health

### ■ Starts in mouth

- Teeth care, floss, non-toxic toothpastes, no aggressive cleaning or amalgam work while pregnant or nursing

### ■ Keep bowels moving

- Support liver/GB

### ■ Probiotics, fiber

## ■ Drainage and regulation medicines

- Gently remove toxins, e.g. chlorella. Do not provoke deep seated toxins when pregnant or breastfeeding
- Do not stimulate immune system of pregnant women, avoid all vaccinations

# Mold toxin treatment in pregnancy

- Remove patient from ongoing mold toxin exposure
- Remove biological toxins from body
  - Glutathione
  - Bind bile – activated charcoal, Microchitosan, CSM
  - Sweat – far infrared sauna, exercise
- Reduce inflammatory cytokines
  - Flex Now, nrf2 activator, curcumin products
- Repair leaky gut
- Reduce effects of hypercoagulability
  - Lumbrokinase or nattokinase with or without proteases
- Individualized nutraceuticals

# Pregnancy is hypercoagulable state

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- Pregnancy is a hypercoagulable state in normal patients
- In chronically ill population, HC is worsened by up-regulated systemic inflammation from any cause including:
  - Infections (esp. of endothelium)
  - Mold toxins
  - Heavy metals
  - Herxheimer reactions
  - Stress

# Treatment of hypercoagulability

- Treatment of hypercoagulability:
  - Fibrinolytic enzymes
    - Lumbrokinase
    - Nattokinase
  - Proteolytic enzymes
  - Heparin
  - Herbals
- Treat to reduce complications of:
  - Maternal HTN
  - Pre-eclampsia and eclampsia
  - Placental insufficiency
  - Miscarriage, prematurity, fetal hypoxia, distress/demise

# Antimicrobial treatment during pregnancy

- Antibiotic treatment during pregnancy
  - Azithromycin 500 - 600 mg daily
  - Cell wall antibiotic
    - Amoxicillin
    - or
    - Cephalosporin (cefuroxime axetil, Cefdinir)
- Antimicrobial herbs during pregnancy
  - Vital Guard Supreme (Chrysanthemum)
  - Manjistha Supreme (Rubia cordifolia)

# Antibiotics in pregnancy

- Antibiotics safe in pregnancy
  - Penicillins
  - Cephalosporins
  - Azithromycin
  - Atovaquone
- Antibiotics unsafe during pregnancy
  - Quinolones
  - Clarithromycin
  - Tetracyclines
  - Metronidazole
  - Trimethoprim-sulfamethoxazole

# Supreme Nutrition products safe in pregnancy

- Vital Guard Supreme – Chrysanthemum
  - Broad spectrum antimicrobial, protects against oxidative damage in CNS and heart
- Manjistha Supreme – Rubia cordifolia
  - Used for threatened miscarriage up until 3<sup>rd</sup> trimester
- LuRong Supreme – antler velvet
  - Collagen, minerals, growth factors, anti-inflammatory prostaglandins, anabolic, used in 3<sup>rd</sup> trimester to ease delivery and aid lactation
- Illicium Supreme – Chinese star anise
  - Used to facilitate birth and increase milk production



# Herbs helpful in pregnancy

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- Ginger root – for nausea
- Spearmint, peppermint – helps relieve nausea
- Lavender – calming
- Chamomile, marshmallow root, and lemon balm for heartburn and indigestion
- Witch hazel – for soaking hemorrhoids
- Chamomile and calendula in oil – massage on itchy skin and stretch marks
- Chamomile – for sleep
- Cranberry – for bladder

# Herbs helpful in pregnancy

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- Stinging nettle – high in iron
- Oat straw – high in calcium
- Red raspberry leaf – helps prepare for birth, rich in iron, helps tone the uterus in third trimester, increase milk production

# Herbs to avoid in pregnancy

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- Aloe (*Aloe Barbadensis*)
- Anise seed (*Pimpinella anisum*)
- *Artemisia annua*, artemisinin and derivatives
- Black Cohosh (*Cimicifuga racemosa*)
- Barberry (*Berberis vulgaris*)
- Blessed Thistle (*Cnicus benedictus*)
- Bloodroot (*Sanguinaria canadensis*)
- Cascara Sagrada (*Rhamnus purshiana*)
- Comfrey (*Symphytum*)
- Ephedra (*Ephedra vulgaris*)

# Herbs to avoid in pregnancy

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- Fennel (*Foeniculum vulgare*)
- Fenugreek (*Trigonella foenum-graecum*)
- Feverfew (*Chrysanthemum parthenium*)
- Goldenseal (*Hydrastis canadensis*)
- Horsetail (*Equisetum arvense*)
- Juniper (*Juniperus communis*)
- Lady's Mantle (*Alchemilla vulgaris*)
- Licorice (*Glycyrrhiza glabra*)
- Nutmeg (*Myristica fragrans*)
- Oregano Oil (*Origanum vulgare*)

# Herbs to avoid in pregnancy

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- Oregon Grape (*Mahonia aquifolium*)
- Pennyroyal (*Mentha pulegium*)
- Rue (*Ruta graveolens*)
- Sage (*Salvia officinalis*)
- Senna (*Cassia acutifolia*)
- Sweet wormwood (*Artemisia annua*)
- Thyme Oil (*Thymus vulgaris*)
- Wormwood (*Artemisia absinthium*)

Note: this is only a partial list

# Researched Nutritionals products to avoid in pregnancy

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- Artemisinin
- Microbinate
- BLt
- Crypto-Plus
- Don't use transfer factors during pregnancy due to the relative unregulated TH2 state in pregnancy.
- Check uric acid levels in pregnant women before using RibosCardio

# Supreme Nutrition products to avoid in pregnancy

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- Ashwagandha
- BFB-1
- BFB-2
- Body Guard Supreme (*Phyllanthus niruri*)
- Endo Supreme (*Pfaffia paniculata*)
- Golden Thread Supreme (coptis)
- HemoGuard Supreme (ginko, ginger, papaya)
- Melia Supreme (neem)
- Morinda Supreme (noni)
- Mucuna Supreme

# Supreme Nutrition products to avoid in pregnancy

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- Olive Leaf Supreme
- Schisandra Supreme (causes uterine contractions)
- Tulsi Supreme (holy basil)
- Woad Supreme (*Isatis*)

<http://www.supremenutritionproducts.com/>



# Pregnant TBD patient referrals

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- Cranial osteopathy for mother and baby
  - [www.thecranialacademy.com](http://www.thecranialacademy.com)
- Acupuncture

# Normal breastfeeding

## ■ Colostrum:

- Low in volume, rich in protein, calories, vitamins and minerals.
- High doses of antibodies, esp. IgA which protects baby's mucous membranes of throat, lungs and intestines
- Normal bacteria to help the baby digest the milk as it increases
- Laxative effect that helps the infant to pass early stools, aiding in the excretion of excess bilirubin, which helps to prevent jaundice

# Normal breastfeeding

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- By the third or fourth day after birth, the colostrum will have changed to more mature milk
- After six weeks, milk supply is settled and breast size decreases somewhat

# Treatment during breastfeeding

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- Continue antimicrobials and supplements
  - Replace azithromycin?
- Continue to limit toxic exposures
- Ongoing treatment of mother can continue to help protect baby
- Use best clinical judgment regarding which antimicrobials to add
- Avoid aggressive detoxification of mother until baby weaned

# Herbs that assist breastfeeding

- Nursing tea
  - Fennel seed
  - Goat's rue (galega)
  - Red raspberry leaf
  - Alfalfa
  - Nettle
  - Chamomile
- Chinese star anise (*Illicium*)
- *Rubia cordifolia* (Manjistha)
- Fenugreek seed
- Blessed thistle
- Lemon grass
- Borage leaf
- Marshmallow
- Coriander
- Comfrey leaf

# Supreme Nutrition products contraindicated while breastfeeding

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- Ashwagandha
- BFB-1 & BFB-2
- Endo Supreme
- Golden Thread Supreme
- Melia Supreme
- Mucuna Supreme
- Olive leaf Supreme
- Schisandra Supreme
- Woad Supreme

# Infant testing at birth

- Cord Blood to several labs
  - Advanced Labs Borrelia culture
    - [www.advanced-lab.com](http://www.advanced-lab.com)
  - Fry Labs smears and molecular diagnostics
    - [www.frylabs.com](http://www.frylabs.com)
  - Galaxy Diagnostics for Bartonella
    - <http://www.galaxydx.com/>
  - Igenex PCRs for TBDs
    - <http://www.igenex.com>
  - PCRs for other infectious organisms
    - EBV, HHV-6, Parvo, Chlamydia, Mycoplasma
- Baby's first urine for *Bb* PCR (Igenex)
- Placenta and foreskin biopsies for *Bb* PCR (Igenex)

# Initial infant evaluation

## ■ History

- Labor and delivery
- Apgar scores, temperature and glucose control, jaundice, breast or bottle fed
- Immunizations
- Feeding, sleeping, voiding, stooling patterns

## ■ Physical examination

- Birth marks, cry, skin color and temp, muscle tone, skin infections (cradle cap, diaper rash), suck, grasp, hip click, red light reflex, defects



# Subsequent infant evaluations

- Sequential examinations bimonthly
- Follow baby's urine for Bb PCR monthly for first 6-12 months
- Again, serologies not helpful until after about 15 months
- Follow for normal growth and developmental stages
- Long term follow up necessary as *Borrelia* may remain dormant and symptoms may not develop immediately but months to years later, presenting as
  - Psychiatric or behavioral problem
  - Feeding problem
  - Autoimmune problem

# CDC

## Recommended Vaccine Schedule

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 -----→											
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 -----→				5 <sup>th</sup> dose				
Tetanus, diphtheria, & acellular pertussis <sup>4</sup> (Tdap: ≥7 yrs)														(Tdap)		
<i>Haemophilus influenzae</i> type b <sup>5</sup> (Hib)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	See footnote 5		←----- 3 <sup>rd</sup> or 4 <sup>th</sup> dose, See footnote 5 -----→									
Pneumococcal conjugate <sup>6</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>6</sup> (PPSV23)																
Inactivated poliovirus <sup>7</sup> (IPV) (<18 yrs)			1 <sup>st</sup> dose	2 <sup>nd</sup> dose	←----- 3 <sup>rd</sup> dose -----→							4 <sup>th</sup> dose				
Influenza <sup>8</sup> (IIV; LAIV) 2 doses for some: See footnote 8																
Measles, mumps, rubella <sup>9</sup> (MMR)							←----- 1 <sup>st</sup> dose -----→					2 <sup>nd</sup> dose				
Varicella <sup>10</sup> (VAR)							←----- 1 <sup>st</sup> dose -----→					2 <sup>nd</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-Men-CY ≥ 6 weeks; MenACWY-D ≥ 9 mos; MenACWY-CRM ≥ 2 mos)														1 <sup>st</sup> dose		Booster

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

# Vaccines are full of toxins

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- Aluminum, mercury, other metals
- Formaldehyde, MSG
- Neomycin, gentamycin, streptomycin, polymyxin B
- Polyethylene glycol, squalene
- Killed and/or live viruses, viral contaminants
- Animal or human tissue
- Glutamate
  - Manganese depletion by glyphosate (and *Bb*?) prevents glutamate breakdown

# 2016 Italian study of vaccine toxins

- Gatti AM, Montanari S. New Quality-Control Investigations on Vaccines: Micro- and Nanocontamination. *International Journal of Vaccines and Vaccination* **2016** 4(1): 00072
  - “The results of this new investigation show the presence of micro- and nanosized particulate matter composed of inorganic elements in vaccines’ samples which is not declared among the components and whose unduly presence is, for the time being, inexplicable. A considerable part of those particulate contaminants have already been verified in other matrices and reported in literature as non biodegradable and non biocompatible.”

# Aluminum adjuvant in vaccines

- DTaP: 170 to 625 mcg, depending on manufacturer
- Hepatitis A: 250 mcg
- Hepatitis B: 250 mcg
- Hib: (PedVaxHib brand): 225 mcg
- HPV: 225 mcg
- Pediarix (DTaP–hep B–polio combo): 850 mcg
- Pentacel (DTaP–Hib–polio combo): 330 mcg
- Pneumococcus: 125 mcg

FDA safety limit for aluminum from parenteral sources  
is 5 pg/kg/day

# Adverse health effects aluminum

- Cooke K, Gould MH. The health effects of aluminium-a review. *J R Soc Health*. **1991** Oct;111(5):163-8.
  - “This review covers the occurrence of aluminium in soil, air, water and food. In addition, aluminium levels in body tissues and its movement within the body have been considered. The adverse effects of aluminium that have been reported in recent years include Alzheimer's disease, dementia and **hyperactivity** and **learning disorders** in children.”
- <https://vactruth.com/2012/01/02/aluminum-fda-got-it-all-wrong/>

# Adverse health effects aluminum

- R.K. Gherardi, H. Eidi, G. Crépeaux , F.J. Authier and J. Cadusseau. Bio persistence and brain translocation of aluminum adjuvants of vaccines. *Frontiers in Neurology* **2015** Volume 6: Article 4, 1-8.
  - “Concerns linked to the use of alum particles emerged following recognition of their causative role in the so-called macrophagic myofasciitis (MMF) lesion detected in patients with myalgic encephalomyelitis/chronic fatigue/syndrome. Some patients with MMF are of the HLA-DRB1\*01 group which is associated with an increased risk to develop autoimmune diseases.”

# Malfeasance in research claiming 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  
<https://www.hindawi.com/journals/bmri/2014/247218/>



# Flu shots harm mother and baby

- Flu vaccines still contain thimerosal
- Only work against 10% of the viruses that cause flu-like symptoms
- Have questionable efficacy against flu viruses
- Elicit inflammatory reactions that may harm the human heart, the pregnant woman, the developing fetus and the fragile immune system of infants

<http://www.greenmedinfo.com/blog/studies-find-flu-shots-can-harm-your-heart-infant-and-fetus>

# Epidemic of inflammatory diseases

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- “There has been an epidemic of inflammatory diseases that has paralleled the epidemic of iatrogenic immune stimulation with vaccines.”
- “The author believes that the sum of the data described and reviewed in this paper supports a causal relationship.”
  - Classen JB. Review of Vaccine Induced Immune Overload and the Resulting Epidemics of Type 1 Diabetes and Metabolic Syndrome, Emphasis on Explaining the Recent Accelerations in the Risk of Prediabetes and other Immune Mediated Diseases. *J Mol Genet Med* **2014**; S1:025.

# Seneff hypothesizes

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- Cumulative glyphosate exposure sets up a weakened immune system, a leaky gut barrier and a leaky brain barrier
- Vaccines introduce foreign proteins, including glyphosate as contaminants
- Children develop overactive antibody response to foreign protein contaminated with glyphosate and autoimmune disease through molecular mimicry

# Management and treatment for mandatory vaccination

- For mandatory vaccinations that you cannot avoid even with medical or religious exemptions:
  - Delay for several months
    - Refuse Hep-B at birth
    - Only give one at a time several months apart
    - No MMR before 3 years of age
  - Preservative free – single use vial
  - Prevent and reduce reactions
    - Homeopathics (Thuja)
    - Phosphatidyl serine 10 days pre and 3 weeks post
    - Chelate metals for fecal elimination
    - Drainage medicine for toxin removal

# Thomas Jefferson (1743-1826)

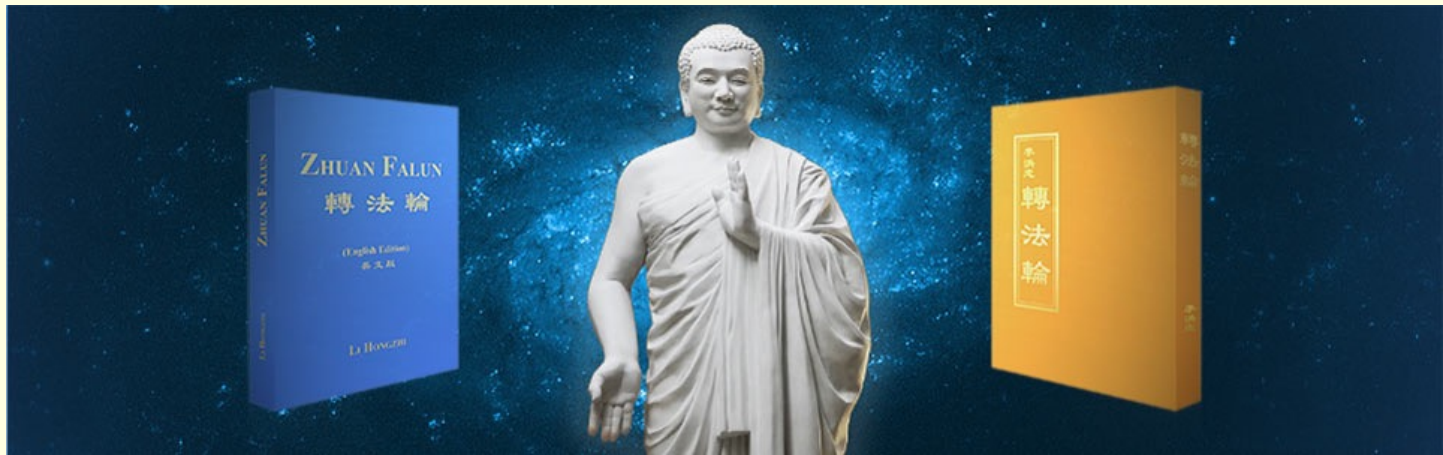
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- “Was the government to prescribe to us our medicine and diet, our bodies would be in such keeping as our souls are now.”

Notes on Virginia, Query XVII (1781-1785)

# Falun Dafa for spiritual perfection

[falundafa.org](http://falundafa.org)



真

Zhen  
Truthfulness

善

Shan  
Compassion

忍

Ren  
Tolerance



# Lyme and Pregnancy Resources

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- Dr. Jones' gestational study:
  - <https://www.lymedisease.org/wp-content/uploads/2014/08/Image21-Gestational-Lyme-Studies.pdf>
- Full reference of gestationally acquired Lyme and other vector borne diseases:
  - <http://lymediseasechallenge.org/pregnancy-children/>



# Hypercoagulability references

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- Roberto Patarca-Montero. Chronic Fatigue Syndrome: Advances in Epidemiologic, Clinical, and Basic Science Research. 1999. The Hayworth Medical Press, Binghamton, NY p. 113-114.
- Berg D, Berg LH, Couvaras J, Harrison H. Chronic fatigue syndrome and/or fibromyalgia as a variation of antiphospholipid antibody syndrome: An explanatory model and approach to laboratory diagnosis. *Blood Coagul Fibrinolysis* 1999 Oct;10(7): 435-8.

# Hypercoagulability references

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- [http://www.springboard4health.com/notebook/health\\_hypercoagulation\\_ill.html](http://www.springboard4health.com/notebook/health_hypercoagulation_ill.html)
- [https://cfsremission.com/treatment/thick-blood-clots-dimension-of-cfs-etc/hemex-protocol-and-dave-berg/dave-berg-cfs-radio-program-1999-08-29 /](https://cfsremission.com/treatment/thick-blood-clots-dimension-of-cfs-etc/hemex-protocol-and-dave-berg/dave-berg-cfs-radio-program-1999-08-29/)
- Researched Nutritionals April 2011 DVD

# Mold references

- [www.survivingmold.com](http://www.survivingmold.com)
- Public Health Alert August 2011
  - <http://www.publichealthalert.org/Articles/miscellaneous/Shoemaker-%20Mold.pdf>
- Gordon Medical Assoc. DVD 10/22-23/2011
  - [http://www.aaimed.com/resources\\_and\\_events.html#Anchor-Biotoxin](http://www.aaimed.com/resources_and_events.html#Anchor-Biotoxin)

# Vaccine resources

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- Antonietta M Gatti and Stefano Montanari. New Quality-Control Investigations on Vaccines: Micro- and *Nanocontamination International Journal of Vaccines and Vaccinations* 2017; (4):1
- <http://www.vacinfo.org/>
- <http://www.nvic.org/>
- <http://www.vaccinesrevealed.com/>
- <http://robertfkennedyjr.com/mercury-vaccines/>
- <http://vaxxedthemovie.com/>

# Vaccine resources

- Classen JB. Review of Vaccine Induced Immune Overload and the Resulting Epidemics of Type 1 Diabetes and Metabolic Syndrome, Emphasis on Explaining the Recent Accelerations in the Risk of Prediabetes and other Immune Mediated Diseases. *J Mol Genet Med* **2014**; S1:025.
- Pdf available at:  
<https://www.omicsonline.com/open-access/vaccine-induced-immune-overload-and-the-resulting-epidemics-of-type-diabetes-and-metabolic-syndrome-1747-0862.S1-025.pdf>

# Vaccine resources

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- <http://www.greenmedinfo.com/anti-therapeutic-action/vaccination-all>
- <http://www.greenmedinfo.com/blog/studies-find-flu-shots-can-harm-your-heart-infant-and-fetus>
- <http://search.mercola.com/search/Pages/results.aspx?k=vaccines>
- <http://articles.mercola.com/sites/articles/archive/2016/11/19/vaccine-safety-greater-good.aspx>

# Vaccine resources

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- <http://drsuzanne.net/dr-suzanne-humphries-vaccines-vaccination/>
- <http://drsuzanne.net/2015/03/vaccination-and-renal-patients-a-critical-examination-of-assumed-safety-and-effectiveness-suzanne-humphries-md/>
- [http://preventdisease.com/news/14/102114\\_Dissolving-Illusions-and-The-Dangers-of-Vaccination.shtml](http://preventdisease.com/news/14/102114_Dissolving-Illusions-and-The-Dangers-of-Vaccination.shtml)
- [http://www.naturalnews.com/Vaccines\\_Get\\_the\\_full\\_story.html](http://www.naturalnews.com/Vaccines_Get_the_full_story.html)

# Glyphosate references

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- U.S. researchers find Roundup chemical in water, air, and honey
  - <http://www.reuters.com/article/us-glyphosate-pollution-idUSTRE77U61720110831>
  - [http://www.huffingtonpost.com/carey-gillam/fda-finds-monsantos-weed\\_b\\_12008680.html](http://www.huffingtonpost.com/carey-gillam/fda-finds-monsantos-weed_b_12008680.html)
- Glyphosate: Unsafe on any Plate
  - [https://s3.amazonaws.com/media.fooddemocracynow.org/images/FDN\\_Glyphosate\\_FoodTesting\\_Report\\_p2016.pdf](https://s3.amazonaws.com/media.fooddemocracynow.org/images/FDN_Glyphosate_FoodTesting_Report_p2016.pdf)



# Glyphosate references

- Depletes manganese and zinc in plants
  - D Huber, What About Glyphosate-Induced Manganese Deficiency? *Fluid Journal* 2007: 20-22.
- Severely depletes Mn and cobalt in cows – all had glyphosate in urine ? leads to cobalamin deficiency
  - M. Krüger et al., *J Environ Anal Toxicol* 2013, 3:5
- Mn deficiency suppresses growth of lactobacilli
  - FS Archibald and M-N Duong. *Journal of Bacteriology* 1984, Vol. 158:1-8.

# Glyphosate references

- Glutamine synthetase depend on Mn
  - Deficiency Mn can cause CNS ammonia and glutamate toxicity
- Interrupts production Vit K2
  - <http://chriskresser.com/vitamin-k2-the-missing-nutrient>
- <http://www.greenmedinfo.com/blog/roundup-weedkiller-brain-damaging-neurotoxin>
- D Cattani et al., *Toxicology* 2014; 320: 34-45.
- H Gerlach et al., *J Environ Anal Toxicol* 2014, 5:2

# Glyphosate in collagen and gelatin

- <https://www.westonaprice.org/health-topics/environmental-toxins/glyphosate-in-collagen/> Stephanie Seneff Feb 1, 2017

Glyphosate is glycine analogue, inserting itself into proteins where glycine should be – Collagen, most abundant protein in the body, is loaded with glycine.

- <http://jeffreydachmd.com/wp-content/uploads/2015/04/Genetically-engineered-crops-glyphosate-deterioration-health-United-States-Swanson-J-Organic-Systems-2014.pdf>

Various specific proteins would be adversely affected by glyphosate substitution, and how these could account for the steep rise that we are currently seeing in a number of diseases and conditions such as diabetes, obesity, autism, celiac disease, Alzheimer's disease and cancer.

# Stephanie Seneff, PhD references

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- Home page of Stephanie Seneff, PhD, senior scientist at MIT with links to her research and presentations on glyphosate, statins, vaccines and nutrition:
  - <https://people.csail.mit.edu/seneff/>
- S. Seneff et al., Entropy 2012, 14, 2227-2253.
- A Samsel and S Seneff, *Journal of Biological Physics and Chemistry* 2016;16:9-46.