

Seafood, Spas, & Sandwiches: The Story Behind (a few) Common Pregnancy Questions

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Objectives

- Define the debate over common pregnancy questions
- Review (briefly) the data behind these questions
- Discuss the recommendations for management and patient counseling
- Topics of focus:
 - Fish consumption during pregnancy
 - Hyperthermia during pregnancy
 - Risk of Listeria from food sources during pregnancy

Seafood.....

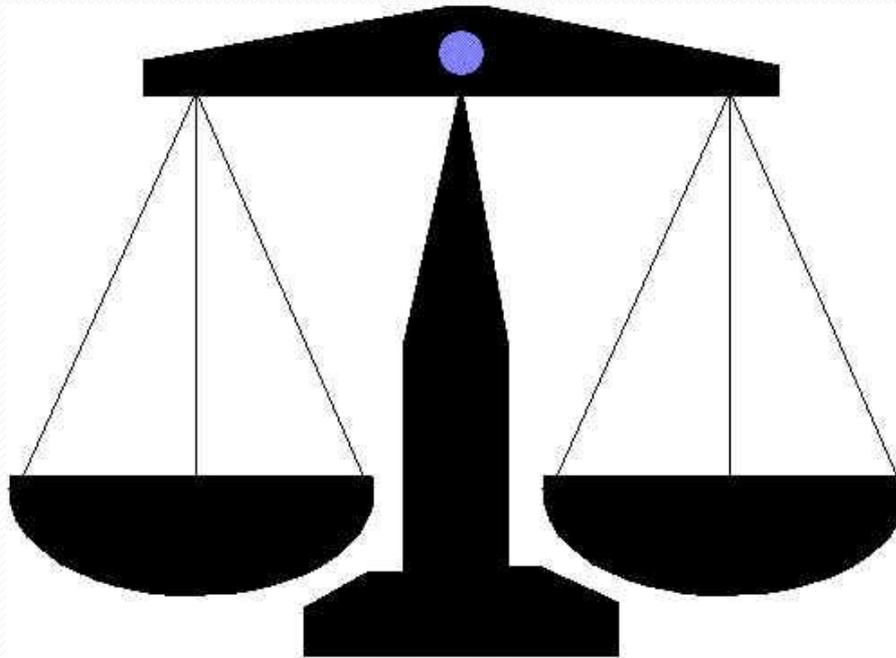
“Doctor,
will this
happen to
my baby?”



Why the debate?

Positives:

- contain high-quality protein
- are low in saturated fat
- are high in omega-3 fatty acids and vitamin D



Negatives:

Nearly all fish contain traces of mercury which may effect neurodevelopment of the fetus

The FDA says (2014)...

- 1. Eat 8-12 oz (2-3 servings)/week of a variety of fish
- 2. Choose fish lower in mercury (e.g. salmon, shrimp, pollock, light canned tuna, tilapia, catfish, cod)
- 3. Avoid: tilefish from GOM, shark, swordfish, king mackerel
 - Limit while albacore tuna to 6oz per week
- 4. Pay attention to fish advisories for locally caught fish
- <http://www.fda.gov/Food/ResourcesForYou/HealthEducat/ucmo83324.htm>



Dueling Cohorts

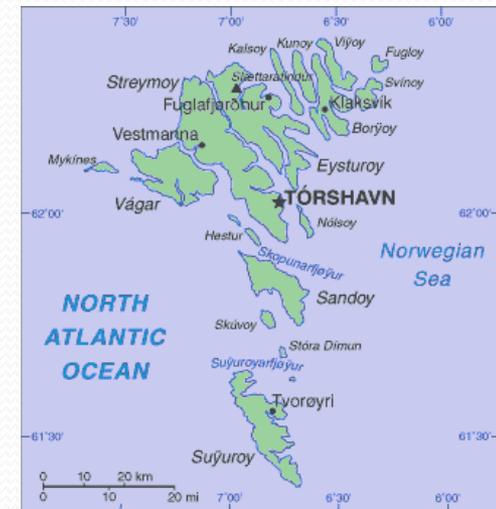
- Two studies showing conflicting results published in same journal in 2006

Republic of Seychelles



Bottom line: At 11 y/o, NO pattern (positive OR negative) noted with mercury exposure

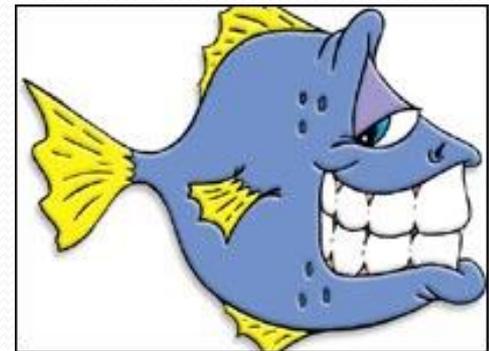
VS. Faroe Islands



Bottom line: mixed

What about US population?

- None of the aforementioned studies/cohorts are applicable to US population
- They eat A LOT more fish than us
 - Among US women of childbearing age median levels of mercury in hair or 0.19 ppm overall
 - Mean 0.34 ppm among women consuming 3+ servings or more of fish per month
- Children in these cohorts continued to be exposed to higher levels of mercury post-natally
- Several epidemiologic studies exist in populations more similar to the US population (ALSPAC, Oken)



ALSPAC study

- Avon Longitudinal Study of Parents and Children
- Low maternal seafood intake associated with increased risk of suboptimal outcomes for prosocial behavior, fine motor, communication, & social development scores
- Maternal seafood consumption of <340g/week was ass'd with increased risk of lowest quartile for verbal IQ with OR 1.48 (CI 1.16-1.9)
- Dose/response curve noted with lower intake=lower scores & higher intake=higher scores
- Results persist after controlling for 28 confounders

ALSPAC conclusions

- More than 340g was not detrimental
- More fish resulted in higher developmental scores
- Less fish was associated with increased risk of lower developmental scores
- ***Risks from loss of nutrients were greater than the risks of harm from exposure to trace contaminants***

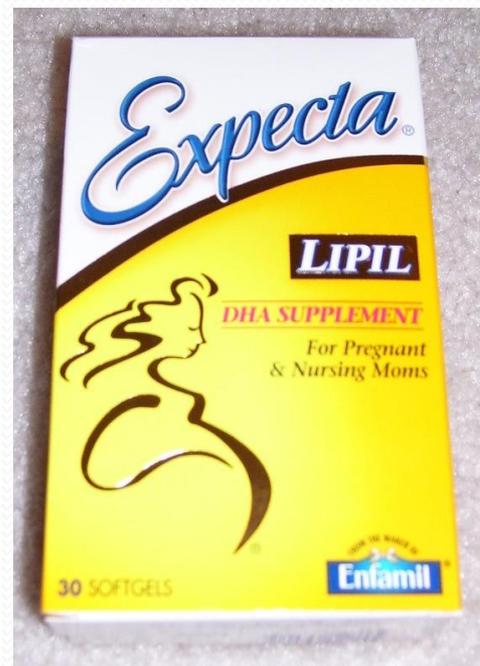
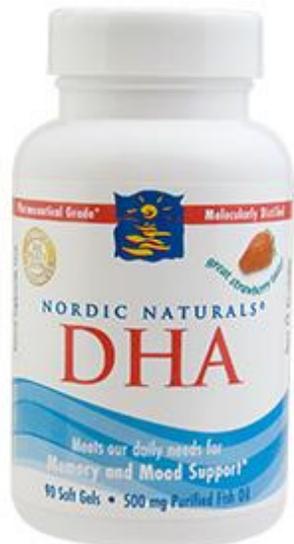
Oken, et al. Study

- Prospective cohort study of 341 mother-child pairs in Massachusetts
- Maternal fish intake directly correlated with erythrocyte total mercury
- Maternal fish intake of >2servings/week was directly ass'd with higher neurodevelopment scores
- No benefit with fish consumption at or below 2 servings per week
- However, within those groups, higher mercury levels were ass'd with lower scores

Oken study conclusions

- More fish=higher scores
- Higher mercury dulled this effect
- “Maternal consumption of fish lower in mercury and reduced environmental mercury contamination would allow for stronger benefits of fish intake.”

Q: So, why not just take DHA?



A: Because it probably doesn't work and it's expensive

- Cochrane review, 2015
 - 8 RCTs with a total of 1567 patients
 - Quality of evidence: moderate to low
 - Supplementing did NOT improve growth, problem-solving ability, intelligence, psychomotor, motor, or language development, visual acuity
 - Age of children at last assessment was 7 years
 - There is inconclusive evidence to support or refute supplementation in pregnancy and breastfeeding
- CVS web site:
 - Prenatals (regular): \$11 for 100 pills
 - Prenatals (+DHA): \$15 for 60 pills

Bottom Line

- Fish intake (>2-3 servings per week) is probably good for fetal neurodevelopment
- Current FDA recommendations may be too conservative and result in women not receiving many of the beneficial effects of fish intake
- Limit intake of high mercury fish and choose those low in mercury
- Not enough evidence for routine supplementation with DHA

Spas/Hot tubs...

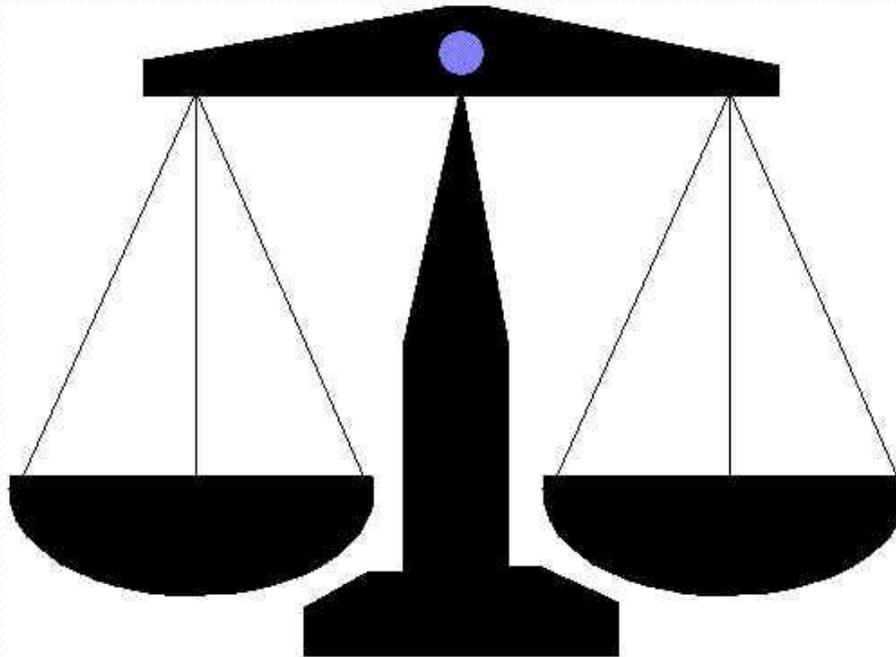
“Doctor, how can this be avoided?”



Why the debate?

Positives:

-MSK relief



Negatives:

-Effect of hyperthermia on developing embryo/fetus
-miscarriage
-birth defects

Current Recommendations

- Organization of Teratology Information Specialists (OTIS)
- Before 6 weeks of pregnancy hot tub/sauna use should be limited to 10 minutes secondary to risk of NTD
- After 6 weeks of pregnancy use should be limited to 10 minutes to avoid overheating or dehydration BUT normal use does NOT seem to increase risk of birth defects
- Electric blankets, heated beds, etc not likely to raise body temp enough to increase risk

Bottom Line

- Healthy women
- Limit use or do not use hot tubs/saunas during early pregnancy secondary to use of NTD and +/- SAB
- Until NT closure ~ 28d post conception or first 6w of pregnancy
- Use is likely safe after NT closure
- Use common sense

Sandwiches(etc)....

“Doctor, will my baby turn into lunch?”



Why the debate?

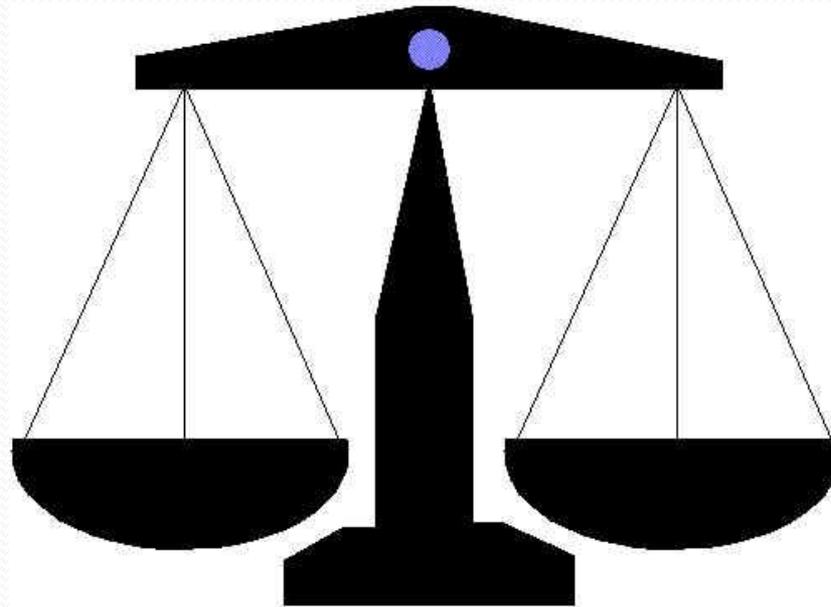
Positives:

-nutrition

-convenience

Negatives:

-Listeria



Listeriosis—What is it?

- *Listeria monocytogenes* (gram + intracellular rod)
- Disease most severe in people with weakened immune systems (e.g. pregnancy)
- Symptoms are fever, muscle aches, GI upset
- If spreads to nervous system, can lead to h/a, stiff neck, confusion, convulsions
- Risk of miscarriage, stillbirth, uterine infection, PTL, NND, NN meningitis, NN sepsis
- May occur 2-14 days following maternal infection
- No increased risk has been reported in women who did NOT have symptoms

Where does it come from?

- Naturally occurs in soil, water, animal digestive tracts
- First foodborne infection reported in 1981 from coleslaw in Nova Scotia
- Has been reported in a variety of other foods such as:
 - uncooked meats
 - Vegetables/fruits (unwashed)
 - hot dogs/cold cuts/lunch meat (unless heated)
 - unpasteurized milk or foods/cheese made with unpasteurized milk
 - Refrigerated pate and meat spreads, refrigerated seafood
 - The list keeps getting longer: ice-cream, hummus, queso (even with pasteurized milk)

How great is the risk?

- In US, about 1600 people annually become ill from Listeria (about 1/7 of these are in pregnant patients=228)
- About 250 of them die
- 90% of cases are in high risk groups (e.g. pregnancy)
- Pregnant women are about 13x more likely than other healthy adults to get listeria
- However, remains relatively uncommon
- 0.27 cases per 100K=1 in 400K



Things that are more
common than
pregnancy
complications from
listeria...

Being bitten by a dog in NYC (n=8, 064)

NYC 1987



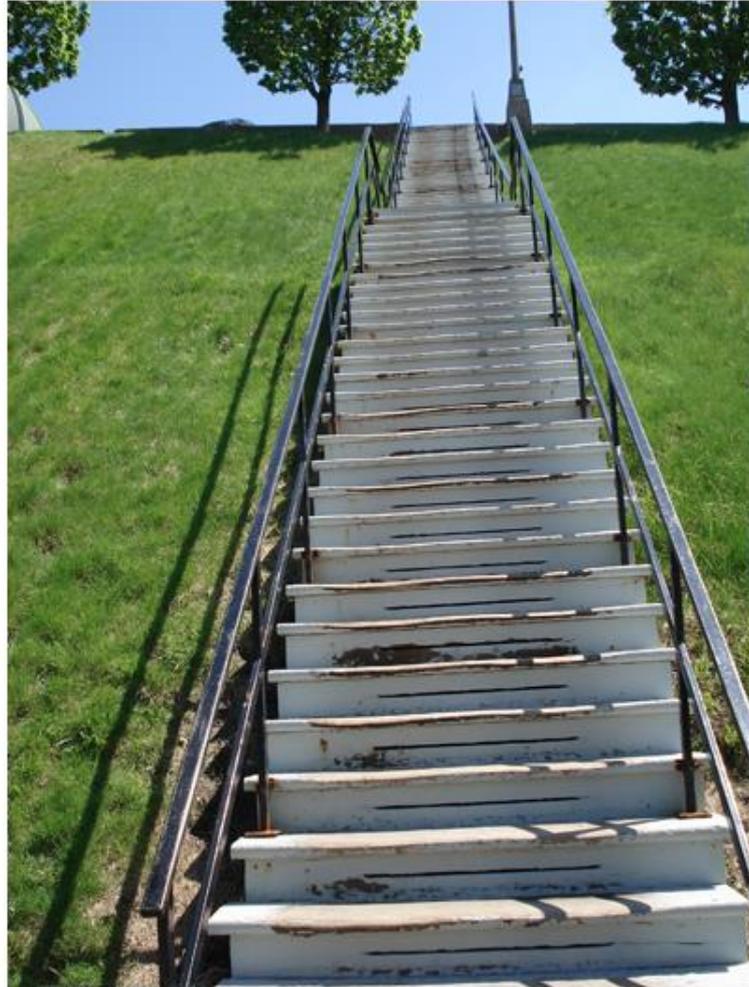
Getting in a car accident on your way to buy deli meet/hot dogs/etc.

2008 traffic fatalities = 39,800



Death by Falling down stairs

n=1000





Things that are less
common than
listeriosis related
pregnancy
complications...

Shark Attack



Being Struck by Lightning



Death by Coconut

n~150/year



Bottom Line

- Risk of listeria from contaminated food sources is **real but rare**
- Patients often received information from sources other than health care providers but would prefer to receive information from providers

Resources



Resources:

www.cdc.gov

www.cfsan.fda.gov

www.mohtertobaby.org

www.acog.org

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