

AUTISM RELATED TO NUTRITION

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It Was A Dark And Ice Stormy Night In Cleveland In November 2009

An autistic alcoholic mother and her two autistic daughters came to the medical practice needing help. They were the only patients that came out that night. I felt sorry for them because they had to be desperate to travel in an ice storm.

WHAT IS AUTISM

- ASD sometimes diagnosed by age 2. Some diagnosis are not made until they are 4.
- 1. There may be no speech or it may be severely delayed
- 2. They may be socially awkward
- 3. Rituals must be followed

AUTISM RATES

- Rates are increasing at a rate of 10-15% per year
- Boys have a 4 to 1 chance of developing autism than girls
- About 1.5 million children have some form of autism with 500,000 cases under age 21. This includes Aspergers Disorder, Retts Syndrome, Childhood Disintegrative Disorder and Pervasive Disorder.

COSTS OF AUTISM

- 1 School Boards have difficulty with special education with costs of \$20,000 to 40,000 per year per individual.
 - 2 Lifetime of expenses may amount to 3 million. Funds are available until age 18.
 - 3 Total costs may be 9 billion in 2011
 - 4 Additional costs from for a lifetime may be as high as 130 billion

Postulated Causes of Autism

1. Certain Foods
2. Infectious Disease
3. Heavy Metals
4. Solvents
5. Diesel Exhaust
6. PCB'S
7. Phenols Plastics
8. Pesticides
9. Brominated Flame Retardants
10. Alcohol
11. Smoking
12. Illicit Drugs
13. Vaccines

Does Pollution Cause Autism

The incidence of autism is 1 in 68, but New Jersey has an incidence of 1 in 45.

Bruce Springsteen is a famous singer and is known as the pollution singer.

1. Trouble River. The river runs through this valley combing deep and black.
2. Youngstown . Them smokestacks reaching like the arms of God into a beautiful sky of soot and clay.

VACCINE ISSUE

- 1 Parents became aware of autism around the time of inoculation.
- 2 Thimersol was a mercury preservative in vaccines. However, as the mercury was removed the rates of autism seemed to increase.
 - 3 There was no evidence that MMR – Measels Mumps & Rubella increased autism.
 4. Original vaccine study was discredited.

Nutritional Epidemiology

Nutritional epidemiology can be useful in linking nutritional processes to disease.

1. 1947 Captain James Lind tested sailors with 12 different diets. One group was given oranges and they recovered from a disease called scurvy
2. Captain Tabaki found polished rice led to a disease called berberi, or thiamine deficiency
3. Sandhu linked meat consumption to colorectal cancer.



Infant Nutrition Breastfeeding

1. Breastmilk is easy to digest
2. Baby stools are soft and easy to pass
3. Breastmilk contains antibodies that protect the infant from germs and illness
4. Breastmilk babies have few ear infections colds and allergies and diarrhea
5. Breastfeeding enhances brain development and learning readiness.

Infant Nutrition Breastfeeding 2

6. Children have less diabetes, childhood cancers
7. Children are less likely to be overweight
8. Breastfeeding has physical and emotionally benefits for the mother
9. Breastfeeding causes the uterus to quickly return to its size before pregnancy

Infant Breast Feeding 3

10. Breastfeeding can help the mother lose weight after birth.
11. Breastfeeding lowers the mothers risk of breast and ovarian cancer, osteoporosis, diabetes and heart disease.
12. Hormones developed from breastfeeding helps for relaxation and develop a feeling of closeness to the infant and helps create a special bond with the mother

Infant Breast Feeding 4

13. Breastmilk is always ready night feeding
14. Cost benefits: breastmilk is free. Mothers miss less work caring for sick children.
15. Less health care costs for infants
16. If eligible mothers get WIC foods
17. SIDS and AHDH rates in infants is lower

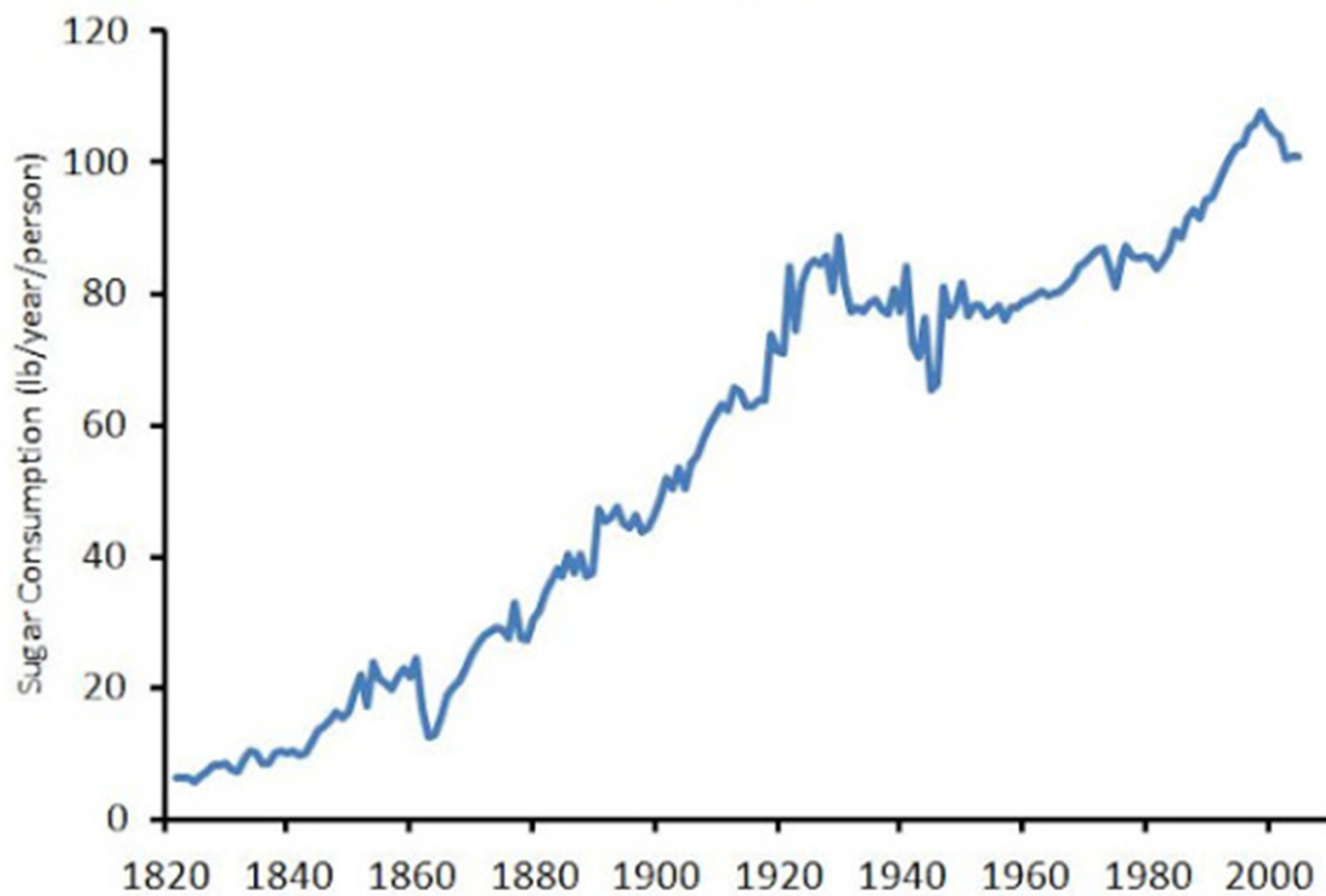
The % WIC recipients in Washington, New Jersey, Oregon and all 50 states

• State	Year	Counties	WIC/Autism	P
• Washington	2009	36	-0.39	<0.02
• New Jersey	2004	21	-0.49	<0.02
• Oregon	2010	30	-0.39	<0.05
• All 50 states	2004	all	-0.37	<0.02

The total daily B-vitamin content of 20 and 30 ounces of milk for 1 and 4 months

Vitamin	MDR/unit	Human1	H4	Bovine1	B4
Thiamine	0.2	0.083	0.124	0.27	0.4
Riboflavin	0.3	0.21	0.32	1.15	1.72
Niacin	2.0	1.05	1.57	0.6	0.9
Pant. Acid	2.0	1.32	1.5	2.2	3.4
B-6	0.1	0.065	0.098	0.3	0.45
Folate	65mcg	29.7	44.6	35.6	53.5
B-12	0.4mcg	0.3	0.45	2.6	3.8

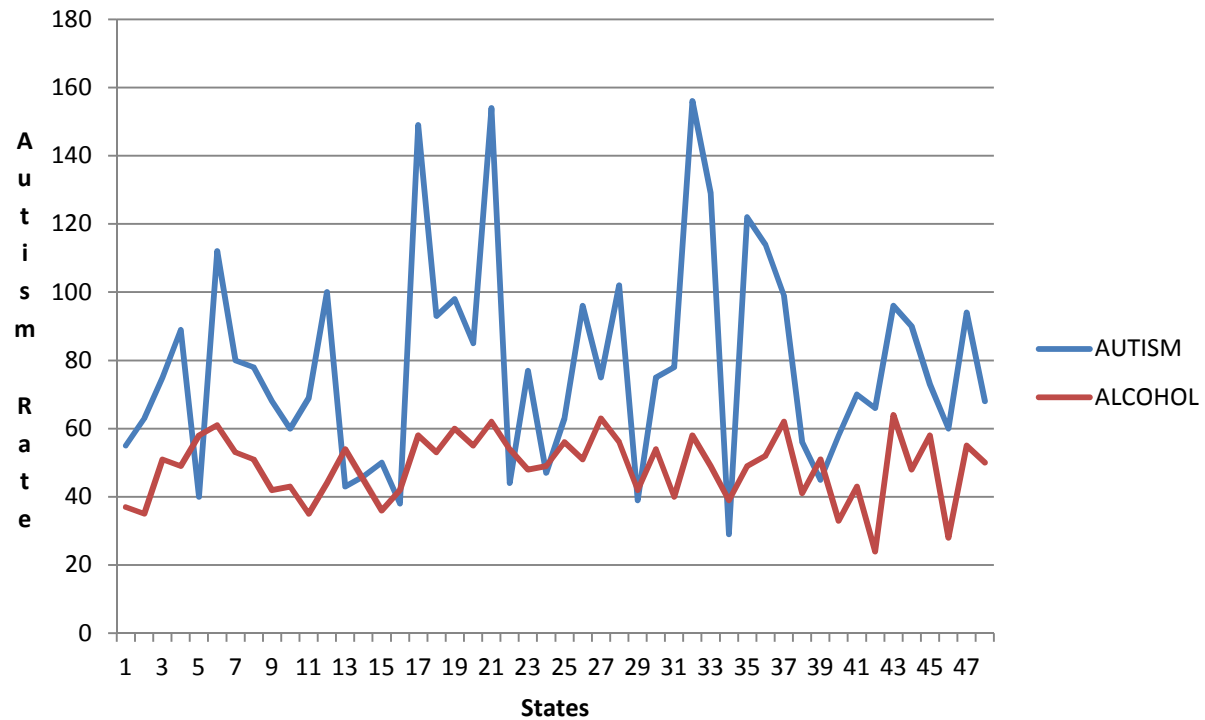
US Sugar Consumption, 1822-2005



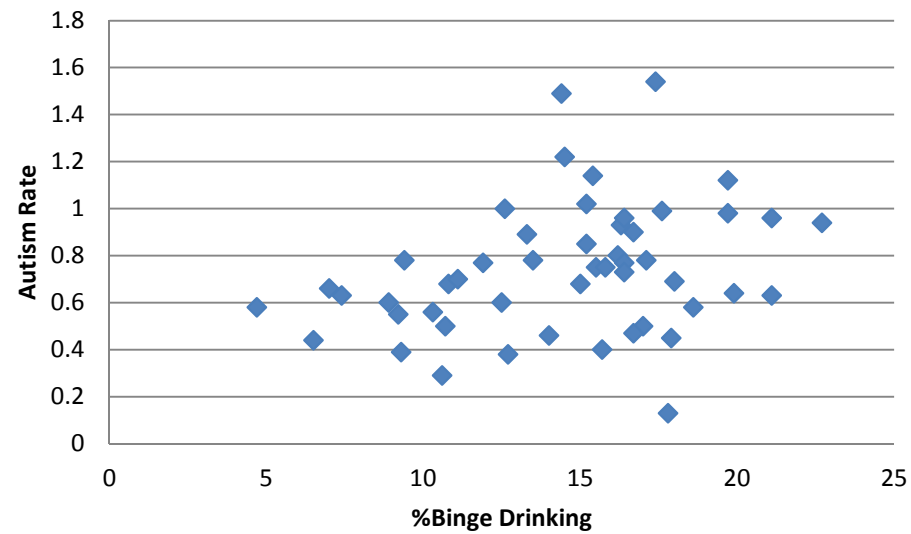
Amish Autism Rate

- Robinson (2010) showed that the Amish had a
- lower rate of autism 0.28 compared to the national rate of 1.09%

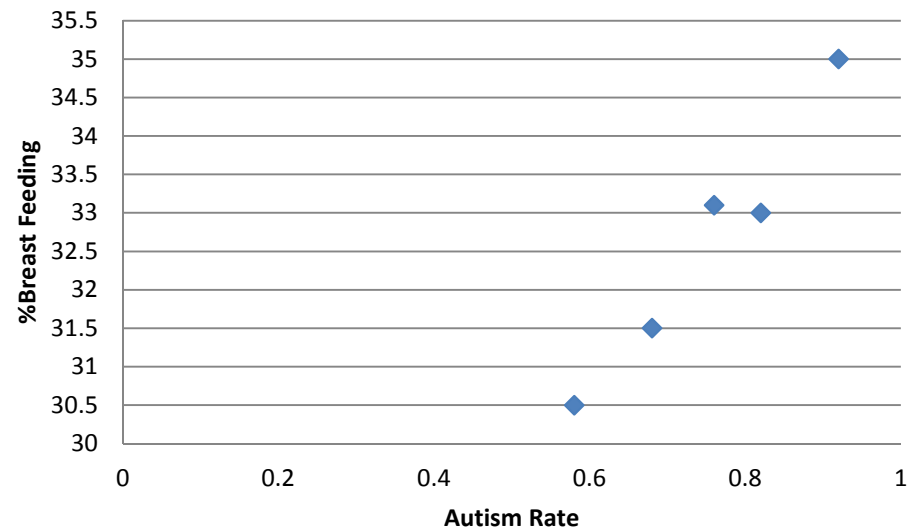
The Total Autism Rate and Alcohol Consumption in 48 States



Autism Rates and % Binge Drinking in 50 States



% Breast Feeding And Autism Rates in 50 States



Summary 1 Thiamine

- Thiamine acts as a coenzyme for transketolase and helps link glycolysis with the Krebs cycle.
Excess sugar may decrease thiamine levels.

Summary 2 Alcohol

- 1.The WIC program limits alcohol. WIC states have lower autism rates.
- 2.Alcohol limits intestinal thiamine absorption. Brain glial cells are damaged.
- 3.In 48 states alcohol consumption is related to autism rates.

Summary 3 Thiamine MDR

- Mothers milk is low in thiamine perhaps due to excess sugar consumption and alcohol consumption.