

POOR HEALTH OUTCOMES OF ARTIFICIAL FOOD DYES

A Functional Health Perspective

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HISTORY

- 1856: William Henry Perkin accidentally discovered mauveine, the first synthetic food dye, while trying to make a malaria drug.
- Soon after, coal tar–derived dyes began to be used in foods, cosmetics, and textiles because they were cheaper and more vibrant than natural dyes.
- Many were later found to be toxic or contaminated with heavy metals (arsenic, lead, mercury).
- 1906: The U.S. passed the Pure Food and Drug Act, banning “poisonous or deleterious” colors. At the time, there were over 80 synthetic dyes in foods; only 7 were initially approved.
- Current Acceptable Daily Intakes (ADI’s) proposed by FDA are not accurate and are based on 30–70 year old studies that were not designed to detect the issues we are seeing

FOOD DYES CURRENTLY USED IN FOODS

NATURAL FOOD DYES

- Tumeric
- Beets
- Saffron
- Carrots
- Spinach
- Paprika
- Sirulina

ARTIFICIAL FOOD DYES

- FD&C Blue No. 1 “brilliant blue”
- FD&C Blue No. 2 “indigotine”
- FD&C Green No. 3 “fast green”
- FD&C Red No. 3 “erythrocine”
- FD&C Red No. 40 “allura red”
- FD&C Yellow No. 5 “tartrazine”
- FD&C Yellow No. 6 “sunset yellow”

BEHAVIORAL ISSUES AND OTHER NEUROCONGITIVE PROBLEMS IN CHILDREN

- Due to its petroleum based manufacturing, Yellow No.6 can contain contaminants of lead, arsenic, and formaldehyde creating neurotoxicity.
- Yellow No. 5 causes Oxidative Stress/Reactive Oxygen Species and lipid peroxidation – neuronal damage
- Depolarization of mitochondria, lowering ATP production
- Activation of microglia – brains immune cells causing inflammatory response that damages brain cells
- In 20 years diagnosis of ADHD in children and adolescents have increased 10.2%
- Microscopic changes in brain structure involving activity, learning, and memory



ALLERGIES

- More common in children with other allergy conditions
- IgE mediated immune reactions/cross reactivity

HYPERSENSITIVITIES

- Not full blown allergies
- Nervous system/histamine response to toxins
- Rashes, hives, headaches, worsening of asthma, facial swelling
- Mainly with Blue 1, Red 40, Yellow 5, and Yellow 6

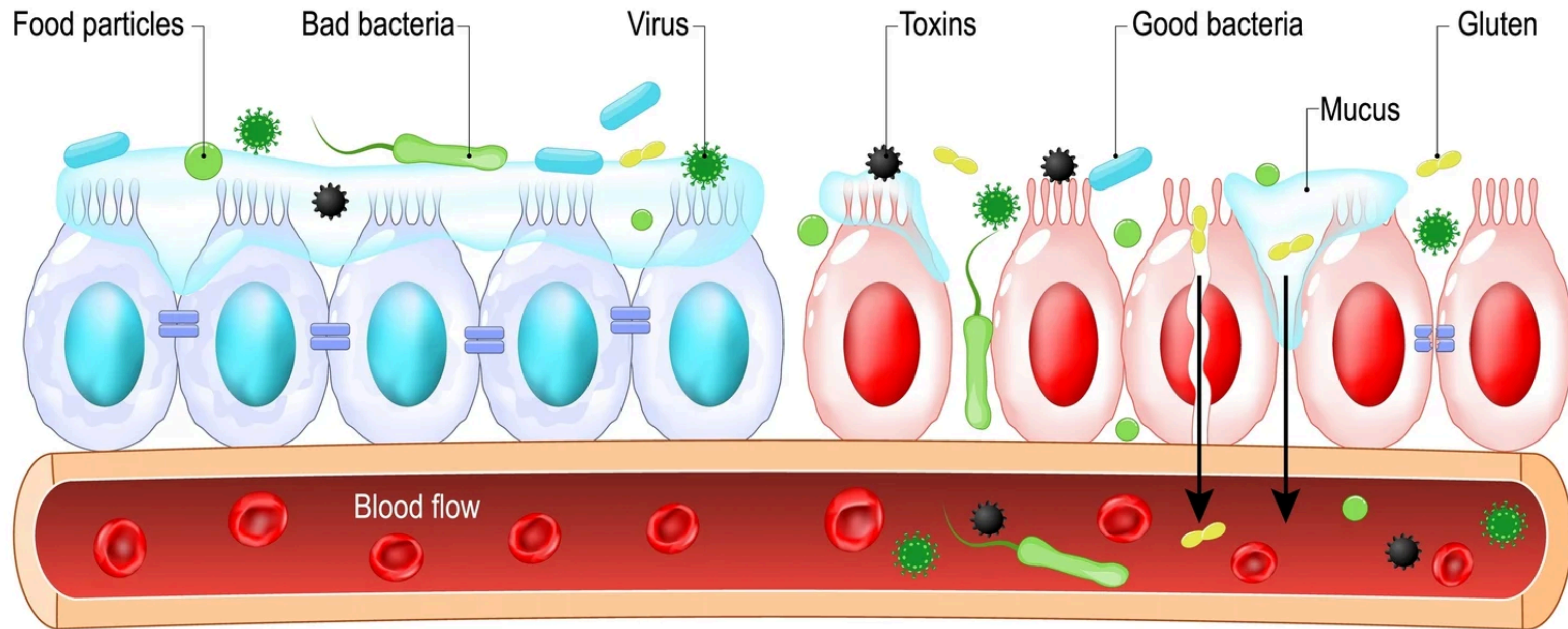
THYROID AND OTHER ENDOCRINE SYSTEM ISSUES

- Yellow No. 6 is a xeno-estrogen which mimics estrogen in the body leading to hormone imbalances, reproductive issues, and interfere with other estrogen related functions
- Red No. 3 increasing TSH in men
- The European Food Safety Authority suggests negative effects on testicular health
- Red No 3 blocks iodine which is crucial to thyroid health
- Interferes with hormone signaling
- Red No 3 can lower T3 and T4 by blocking thyroid hormone receptor sites
- Genotoxic effects/oxidative stress and DNA damage - adrenal and thyroid tumors
- Tartrazine interferes with enzymes related to hormone clearance
- Can alter genetic expression - epigenetics

GASTROINTESTINAL DYSFUNCTION

- Malabsorption Syndrome – nutrient deficiencies
- Mucosal layer weakening – increased intestinal permeability – triggering systemic inflammation and autoimmunity
- Gut microbiome disruption, weakened commensal bacteria
- Increased susceptibility to IBS and Crohn's Disease

INCREASED INTESTINAL PERMEABILITY “LEAKY GUT”



Retrieved from <https://vibrant-wellness.com/blog/the-role-of-functional-testing-in-diagnosing-leaky-gut>

CANCER

- Animal studies
- DNA damage findings
- Benzidine contamination (Red 40, Yellow 5, and Yellow 6) – FDA has permitted low, presumably safe levels, “just under concern for cancer risk” however, bound benzidine has been found in higher levels than free benzidine
- Red 3 increases cellular proliferation leading to tumors

RECOMMENDATIONS AND MOVING FORWARD

- All artificial food dyes are removed from all foods in the state of Oklahoma
- Manufacturers produce safer foods by switching to using natural food colorings
- Public education initiatives creating informed consumerism
- Transparent food labeling without “greenwashing” or misleading food labels

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THANK YOU



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