

Food Additives and Dyes

TX RPC Project Legislative Rapid Response Request

March 7, 2025

KEY TAKEAWAYS

1. Synthetic food colorings and dyes have been linked to negative health effects, including hyperactivity, irritability, and sleep disruptions in children.
2. Some additives such as synthetic food dyes and some artificial sweeteners found in ultra-processed foods are associated with higher cancer risks and are being evaluated for additional negative health outcomes by the Food and Drug Administration.

Background

- Food additives are substances primarily added to processed foods or other foods produced on an industrial scale.¹
 - Additives are added to ensure processed food remains safe and in good condition throughout its journey from factories or industrial kitchens to warehouses and shops, and finally to customers.²
- Color additives are a type of dye, pigmentation, or other type of substance that is used to color foods, drugs, cosmetic materials, or other items.³
 - Color additives can also be known as synthetic food coloring, and includes colors such as red, blue, green, and yellow.³
 - These colors can be used to make foods like candy, sweets, fruit juice drinks, or medicine look more appealing and appetizing.³

On January 16, 2025, the Federal Food and Drug Administration (FDA) banned the use of Red Dye #3 in food, with all industries to remove red dyes from being used in items by January 15, 2027. This includes the use of Red Dye #3 in foods, dietary supplements, and ingested drugs.

Reference 4

Food Additives and Health

- Some food additives used in producing, packaging, and preserving can impact the thyroid and other hormone systems.³
- Food additive dyes contain chemicals that could worsen hyperactivity, inattentiveness, and additional behavioral problems in children.⁵
- Synthetic food coloring and dyes has been shown to be associated with increased irritability, restlessness, and disruption in sleep patterns among children who consumed foods with synthetic dyes.^{6,7}

Food additives, like sweeteners and dyes, are frequently used in ultra-processed foods.⁸



***Synthetic Food
Coloring & Dyes***



***Artificial
Sweeteners***

National Food Additive Bills

- At the federal level, the Safe School Meals Act of 2024 was introduced to amend the Richard B Russell National School Lunch Act and is to protect students from harmful food additives in school meals.⁹
 - The bill aims to limit the number of contaminants like pesticide residues and polyfluoroalkyl (PFAS) that may be served in school meals.⁹
 - The bill would mandate regular testing of school meal program foods for contaminants and require supplies to certify that the food adheres to safety standards.⁹
 - The bill proposes allocating funding to the Department of Agriculture for soil and water remediation funding, offering grants to schools to assist in purchasing safe food serving equipment, and allowing smaller agricultural producers to exempt from certification costs to participate in school meal programs if their food meets the safety standards.⁹

Additional synthetic dyes under review by the FDA:



Red Dye #40



Yellow Dye #3

Reference 10

U.S. State Bans on Food Additives

- In 2023, California's Governor Gavin Newsom, signed the California School Food Safety Act, which prohibits schools from serving or selling foods containing synthetic food dyes, including Red Dye #3.⁸
- California has also banned the use of Red Dye #40, Yellow Dye #5 and #6, Blue Dye #1 and #2, and Green Dye #3, all of which have been found to contribute to neurological and behavioral issues in children.¹¹

As of October 2024, prior to the FDA's ban on Red Dye #3, 10 other states had proposed legislation to ban types of food dyes and additives in foods, including:



Missouri



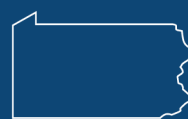
South Dakota



West Virginia



New Jersey



Pennsylvania



Maryland



Illinois



Rhode Island



Washington



New York

Reference 12

References

1. World Health Organization. Food Additives. <https://www.who.int/news-room/fact-sheets/detail/food-additives>. Published November 16, 2023. Accessed January 21, 2025.
2. Food and Drug Administration. Color Additives History. <https://www.fda.gov/industry/color-additives/color-additives-history>. Published November 2023. Accessed January 22, 2025.
3. Healthy Children. Food Additives: What Parents Should Know. <https://www.healthychildren.org/English/healthy-living/nutrition/Pages/Food-Additives.aspx>. Accessed January 22, 2025.
4. National Archives: Federal Register. Color Additive Petition from Center for Science in the Public Interest, et al; Request to Revoke Color Additive Listing for Use of DF&C Red No. 3 in Food and Ingested Drugs. . Released January 16, 2025. Accessed January 20, 2025.
5. Galligan, T. California Continues Leading Nation on Food Additive Safety, Bans Harmful Food Dyes in Schools. <https://www.cspinet.org/statement/california-continues-leading-nation-food-additive-safety-bans-harmful-food-dyes-schools>. Updated September 30, 2024. Accessed January 21, 2025.
6. Rowe KS, Rowe KJ. Synthetic food coloring and behavior: a dose response effect in a double-blind, placebo-controlled, repeated-measures study. *J Pediatr*. 1994;125(5 Pt 1):691-698. doi:10.1016/s0022-3476(94)70059-1
7. Trasande L, Shaffer RM, Sathyanarayana S, COUNCIL ON ENVIRONMENTAL HEALTH, Lowry JA, Ahdoot S, Baum CR, Bernstein AS, Bole A, Campbell CC, Landrigan PJ, Pacheco SE, Spanier AJ, Woolf AD; Food Additives and Child Health. *Pediatrics* August 2018; 142 (2): e20181408. 10.1542/peds.2018-1408
8. Center for Science in the Public Interest. CSPI's Food Additive Safety Ratings. <https://www.cspinet.org/page/chemical-cuisine-food-additive-safety-ratings>. Accessed February 20, 2025.
9. United States 118th Congress. S.5084 Safe School Meals Act of 2024. <https://www.congress.gov/bill/118th-congress/senate-bill/5084/titles#:~:text=A%20bill%20to%20amend%20the,meals%2C%20and%20for%20other%20purposes..> Accessed January 20, 2025.
10. Zhang Q, Chumanevich AA, Nguyen I, et al. The synthetic food dye, Red 40, causes DNA damage, causes colonic inflammation, and impacts the microbiome in mice. *Toxicol Rep*. 2023;11:221-232. Published 2023 Sep 6. doi:10.1016/j.toxrep.2023.08.006
11. Consumer Reports. California leads the nation with first ban on six harmful food dyes in school food. https://advocacy.consumerreports.org/press_release/california-leads-the-nation-with-first-ban-on-six-harmful-food-dyes-in-school-food/. Accessed January 21, 2025.
12. Higham A. Map Shows 11 US States Banning Food Dyes. <https://www.newsweek.com/map-11-states-food-dye-bans-1961920>. Updated October 1, 2024. Accessed January 21, 2025.

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Suggested Citation

Flores-Thorpe S, Linton R, Brand K, Zhang Y, Menendez T, van den Berg AE, Hoelscher DM. A report of the Texas Research-to-Policy Collaboration Project. *UTHealth Houston School of Public Health in Austin, Michael & Susan Dell Center for Healthy Living*. Published February 4, 2025. Updated March 7, 2025