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I. INTRODUCTION

Among Americans' many consumable vices (e.g., illicit drugs, tobacco, alcohol, sugars, salt, high fat foods), caffeine represents a unique and popular ingredient that infiltrates multiple product lines, directly impacts individual and communal health (especially among children and adolescents), and yet enjoys relatively little regulation.[1] Caffeine is

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1. *See* discussion *infra* Part IV.

pervasive in our beverages, foods, and medicines.[2] Americans may find it difficult, even impossible, to completely eliminate caffeine from their diets. Caffeine is a natural ingredient in coffees, chocolates, and teas. It is intentionally added to products ranging from sodas, sports drinks, "high-performance" dietary supplements, alcoholic beverages, headache medicines, and even drinking water.[3] Routine, extensive ingestion of "America's favorite drug" reflects our societal acquiescence in addiction.[4] A "caffeine high" is an innocent pleasure that millions undertake one or more times each day to stimulate their minds and bodies to perform at peak levels. Caffeine provides a daily, inexpensive boost of energy that makes life better for many Americans, regardless of their social class, ethnicity, or status.[5]

Caffeine, it seems, is the perfect drug. It is widely-available, cheap, and fast-acting. For many adult users, its ingestion presents relatively few short- or long-term health effects.[6] Research studies have shown that moderate levels of caffeine can improve intellectual and athletic performance and help treat or prevent some physical and mental health conditions.[7] Caffeine may

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2. *See* discussion *infra* Part II.A.

3. *See* discussion *infra* Part II.

4. Meredith Melnick, *A Man Dies after Overdosing on Caffeine*, TIME, Nov. 2, 2010, *available at* http://healthland.time.com/2010/11/02/a-man-dies-after-overdosing-on-caffeine/ (describing caffeine as "America's favorite drug"). There are a number of academic discussions that debate whether habitual use of caffeine is classifiable as an addiction. *See, e.g.*, Jennifer L. Temple, *Caffeine Use in Children: What We Know, What We Have Left to Learn, and Why We Should Worry*, 33 NEUROSCIENCE & BIOBEHAVIORAL REVIEWS 793, 796 (2009), *available at* http://www.ncbi.nlm.nih.gov/pubmed/19428492; *contra* Sally Satel, *Is Caffeine Addictive?—A Review of the Literature*, 32 AM. J. DRUG & ALCOHOL ABUSE 493, 499-500 (2006), http://dionysus.psych.wisc.edu/Lit/Articles/SatelS2006a.pdf.

5. Lisa Roberts, *AMPED UP – Everyone Knows About the Caffeine in Coffee and Cola, but Get Ready for a Buzz from Your Pancake Syrup or Your Soap!*, THE ORLANDO SENTINEL, Mar. 28, 2006, at E3, *available at* http://articles.orlandosentinel.com/ 2006-03-28/news/CAFFEINE_1_caffeine-pancake-syrup-energy-drinks; Abby Goodnough, *Caffeine and Alcohol Drink is Potent Mix for Young*, N. Y. TIMES, Oct. 26, 2010, at A12, *available at* http://www.nytimes.com/2010/10/27/us/27drink.html.

6. *See* discussion *infra* Part III.A.

7. *See* discussion *infra* Part III.A.

even boost one's personal confidence and self-esteem.[8] However, the collective impact of caffeine on public health is notable. When taken in multiple doses or in extreme amounts over prolonged periods, caffeine use contributes directly to multiple physical and mental health conditions, especially among children and adolescents.[9] Early addiction to caffeine can be a precursor to experimentation and use of more serious, illicit drugs.[10] Caffeine may be tied to the national obesity epidemic because (1) its use leads people to intake more calories and (2) many high-calorie foods and drinks include it to stimulate individuals to consistently consume them.[11] Widespread caffeine use may also negatively affect national productivity as employees' constant drive for caffeine to quell caffeine "headaches" contributes to lost hours of work and potentially reduces on-the-job performance.[12]

Perhaps the potential downsides of extensive caffeine use seem relatively minor for a substance that is otherwise harmless and may even be beneficial for millions of consumers. It is hard to vilify consumers or manufacturers for their use or inclusion of caffeine in foods, drinks, supplements, and medications. Unlike second-hand tobacco smoke, there is no readily identifiable "caffeine industry" to attack, no direct impact of caffeine use on others, and few deaths are directly attributable to the use of caffeine.[13]

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8. Harris R. Lieberman, et al., *The Effects of Low Doses of Caffeine on Human Performance and Mood*, 92 PSYCHOPHARMACOLOGY 308, 308 (1987); *see also* Hank Clever, *Coffee, Tea, or Chocolate? Caffeine Is Mild, Addictive and Everywhere*, ST. LOUIS POST-DISPATCH, Feb. 9, 2004, at 1, *available at* NEWSBANK, Rec. No. 0402090318.

9. *See* discussion *infra* Part III.A.

10. Roland R. Griffiths & Geoffrey K. Mumford, *Caffeine: A Drug of Abuse?, in* PSYCHOPHARMACOLOGY: THE FOURTH GENERATION OF PROGRESS (Floyd E. Bloom & David J. Kupher, 2000); *see also* Gail A. Bernstein, et al., *Caffeine Dependence in Teenagers*, 66 DRUG & ALCOHOL DEPENDENCE 1, 3-4 (2002); *see also infra* Part III.B.

11. *See* discussion *infra* Part III.B.2.

12. Laura M. Juliano & Roland R. Griffiths, *A Critical Review of Caffeine Withdrawal: Empirical Validation of Symptoms and Signs, Incidence, Severity, and Associated Features*, 176 PSYCHOPHARMACOLOGY 1, 12-21 (2004); *contra* Andrew P. Smith, *Caffeine at Work*, 20 HUMAN PSYCHOPHARMACOLOGY: CLINICAL & EXPERIMENTAL 441, 444 (2005) (suggesting that moderate caffeine use may stimulate employees and improve worker safety).

13. Brigid Schulte, *Group Dares FDA to Regulate Caffeine, Institute Supported by the Tobacco Industry Thinks It's Only Fair*, AKRON BEACON J., Oct. 25, 1995, at A8.

These facts may help explain why caffeine is relatively unregulated.[14] Largely treated as a food additive or a dietary supplement, like sugar or salt, caffeine is included in a panoply of consumable products available anywhere foods or beverages are sold and marketed extensively to people of all ages, including children and adolescents.[15] Except for select state-based regulations, there are relatively few prohibitions of the sale and marketing of even highly-caffeinated products to minors of any age.[16] A seven-year old child cannot lawfully purchase cigarettes, alcohol, or illicit drugs, but she can buy a can of Red Bull® energy drink, a Starbucks® coffee, and over-the-counter caffeinated medications. While a retailer may refuse to sell any product to a minor,[17] they have no more legal reason to deny minors the purchase of a caffeinated Vitamin Water® than an avocado. Many parents or caretakers of children may cringe at the sight of their child gulping down a can of Pepsi Max® (with sixty-nine milligrams of caffeine), but parents, retailers, and manufacturers are not legally barred from allowing children to purchase or consume these and other caffeinated products.[18]

This Comment explores the scope of caffeine use in the United States, its positive and adverse affects on health, and modern legal themes to address these impacts, focusing on caffeine consumption by children and adolescents. Part II describes the use of an ever-expanding array of caffeinated products among American consumers, as well as the extensive marketing efforts designed to ensure their continued consumption. In Part III, individual and communal health impacts of widespread caffeine use are examined. Specifically, Part III explores (1) the positive and negative health

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14. *See* discussion *infra* Part IV.

15. *See* discussion *infra* Part II.B.

16. *See* discussion *infra* Part IV.B.

17. Prior to majority, an individual may enter into sales or other contracts but these are considered voidable. *See* Restatement (Second) of Contracts § 14 (1981) ("a natural person has the capacity to incur only voidable contractual duties [. . .] before the person's eighteenth birthday"). For this reason, merchants may decline to sell to minors, or "infants" as defined in the Uniform Commercial Code, because their contracts are potentially voidable.

18. *See infra* Part IV.A; *see, e.g.*, Saritha Prabhu, *Teens Pressured to Stay Over-Stimulated with Caffeine*, THE TENNESSEAN (Apr. 14, 2008), *available at* http://www.commercialfreechildhood.org/news/teenspressured.htm ("The FDA doesn't regulate caffeine content in energy drinks, nor does it require manufacturers to list the caffeine content on the cans. With no regulation, the sky is apparently the limit when it comes to caffeine content.").

effects stemming from casual and extreme uses of caffeine as a stimulant; and (2) how caffeine may serve as a gateway not only to illicit drug use, but also to the consumption of high calorie and fatty foods linked in part to the national obesity epidemic. Part IV outlines the various direct and indirect regulations of caffeine as an ingredient in foods, drugs, and dietary supplements. In addition, federal and state laws concerning labeling requirements for food products, prohibitions on sales or marketing to minors, and other key themes are examined. Finally, in Part V, legal themes and strategies for addressing the potential negative impacts of extensive caffeine use and inclusion in foods, beverages, and drugs on child and adolescent health are proposed.

II. CAFFEINE AVAILABILITY, USE, AND PROMOTION

A. National Prevalence and Use of Caffeinated Products

The availability and consumption of caffeinated products are prevalent in the United States. Adult consumers are largely aware of the presence of caffeine in consumables like coffees, teas, soft drinks, medications, energy drinks,[19] and certain alcoholic beverages.[20] Many adults and minors, however, may not know about the gamut of additional food and medicinal products that contain caffeine. Especially popular among children and adolescents are food products combining caffeine, sugars, and sweeteners,[21] such as candies, gum, mints, lollipops, marshmallows, cookies, and brownie mixes.[22] Health conscious consumers may be surprised to know that some

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19. Energy drinks, which feature a large dose of caffeine, may also include other ingredients which have similar effects as caffeine, such as taurine, ginseng and carnitine, but do not require labeling and may not be included in the caffeine content calculations. Kavita M. Babu et al., *Energy Drinks: The New Eye-Opener for Adolescents*, 9 CLIN. PED. EMERG. MED. 35, 36 (2008).

20. David Kesmodel, *Buzz Kill? Critics Target Alcohol-Caffeine Drinks*, WALL ST. J. (Aug. 3, 2009), http://online.wsj.com/article/SB10001424052970203674704 574 3283222 93679870.html.

21. Caffeine and sweets may reinforce each other. Studies in adults have indicated that consuming caffeine together with sugar (for example, coffee with a doughnut) act synergistically to release dopamine and increase the reinforcing properties of both foods. As a result, caffeine and sweets may have a mutually addictive effect when consumed together. *See* Katrina A. Bramstedt, *Caffeine Use by Children: The Quest for Enhancement*, 42 SUBSTANCE USE & MISUSE 1237, 1244 (2007).

22. For a more complete list of caffeinated candies, *see Caffeinated Candy*, THINK GEEK, http://www.thinkgeek.com/caffeine/candy/ (last visited Nov. 10, 2010). Caffeine

brands of oatmeal, yogurt, cereal, sunflower seeds, beef jerky, and bottled water contain caffeine.[23] Even certain brands of soap, such as Shower Shock and Bath Buzz, are designed to provide caffeine by absorption through the skin.[24]

Caffeine, however, is not added to foods to enhance flavor. As a natural ingredient, caffeine, which serves as a natural pest deterrent in coffee, tea, and cocoa plants,[25] has a bitter, unpalatable taste. One study by Johns Hopkins University School of Medicine concluded that caffeine is added to soft drinks not for taste, but for its addictive qualities and ultimately to boost consumption.[26] Pepsi, for example, started including caffeine in 1919 to boost declining sales.[27] Table 1. Prevalence of Caffeine in Select Products, below, lists popular caffeinated products, many of which are available for less than two dollars each at nearly every grocery store, convenience store, or vending machine in the United States.[28]

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bakeries are also gaining popularity. *See* Reid Forgrave, *Ames Bakery Harnesses Power of Caffeine*, DES MOINES REGISTER, Sept. 19, 2010, http://www.desmoinesregister.com/article/20100919/NEWS/9190336/Ames-bakery-harnesses-power-of-caffeine.

23. David Schartdt, *Caffeine: The Good, the Bad, and the Maybe*. CENTER FOR SCI. IN THE PUB. INTEREST (Mar. 2008), http://www.cspinet.org/new/cafchart.htm; *see also* Austin G. Caudle and Leonard N. Bell, *Caffeine and Theobromine Contents of Ready-to-Eat Chocolate Cereals*, 100 J. AM. DIETETIC ASS'N 690, 690-91 (2000).

24. John Cloud, *Hey! Who Put the Caffeine in my Soap?*, TIME, Oct. 20, 2008, http://www.time.com/time/printout/0,8816,1851855,00.html; *see also Shower Shock Caffeinated Soap,* THINK GEEK, http://www.thinkgeek.com/caffeine/ accessories/5a65/ (last visited Nov. 10, 2010).

25. Bramstedt, *supra* note 21.

26. Roland R. Griffiths & Ellen M. Vernotica, *Is Caffeine a Flavoring Agent in Cola Soft Drinks?*, 9 ARCH. FAM. MED. 727 (2000), *available at* http://archfami.ama-assn.org/cgi/content/full/9/8/727.

27. Priscilla Norwood Harris, *Undoing the Damage of the Dew*, 9 APPALACHIAN J.L. 53, 63 (2009).

28. Schartdt, *supra* note 23; *see also* Mayo Clinic Staff, *Caffeine Content for Coffee, Tea, Soda and More*, MAYOCLINIC.COM, http://www.mayoclinic.com/health/caffeine/AN01211 (last visited Nov. 10, 2010).

TABLE 1. PREVALENCE OF CAFFEINE IN SELECT PRODUCTS

Coffees	Serving Size	Caffeine (mgs)
Starbucks Brewed Coffee (Grande)®	16 oz.	320
Einstein Bros.® regular coffee	16 oz.	300
Dunkin' Donuts® regular coffee	16 oz.	206
Soft Drinks	Serving Size	Caffeine (mgs)
Vault®	12 oz.	71
Coca-Cola® (regular or diet)	12 oz.	54
Mountain Dew® (regular or diet)	12 oz.	54
Energy Drinks	Serving Size	Caffeine (mgs)
Spike Shooter®	8.4 oz.	300
Cocaine (aka. No Name)®	8.4 oz.	288
Monster Energy®	16 oz.	160
Full Throttle®	16 oz.	144
Tab Energy®	10.5 oz.	95
Red Bull®	8.3 oz.	80
Desserts, Candy, Snacks	Serving Size	Caffeine (mgs)
Sumseeds Sunflower Seeds®	1.8 oz.	140
Ben & Jerry's Coffee Heath Bar Crunch®	8 fl. oz.	84
Morning Spark Energy Oatmeal®	1 packet	60
Snickers Charged®	1 bar – 2 oz.	60
Jolt® Caffeinated Gum	1 stick	33
Dannon All Natural Yogurt® (Coffee Flavor)	6 oz.	30
Over the Counter Medicines	Serving Size	Caffeine (mgs)
NoDoz®	1 tablet	200
Excedrin, Extra Strength®	2 tablets	130
Anacin, Maximum Strength®	2 tablets	64

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29. Mayo Clinic Staff, *Caffeine Content for Coffee, Tea, Soda and More*, MAYOCLINIC.COM, http://www.mayoclinic.com/health/caffeine/ AN01211 (last visited Nov. 10, 2010).

With the widespread availability of inexpensive products containing caffeine, it is not surprising that over eighty percent of American adults consume caffeinated products daily.[30] An average adult who consumes caffeine ingests approximately 200 milligrams a day.[31] This is roughly the equivalent of the amount of caffeine contained in four twelve-ounce cans of soda, one ten-ounce cup of coffee, three Excedrin Extra Strength® tablets, or six Anacin Max Strength® tablets.[32] The average daily caffeine intake of Americans who drink coffee may be considerably higher.[33]

Caffeine consumption among children and adolescents nationally is not well-documented and may vary by region.[34] Nevertheless, studies show that caffeine consumption among minors increased at least seventy percent from 1977 to 1999.[35] Carbonated soft drinks, with little or no nutritional value, have replaced milk as the primary beverage consumed in the U.S. for all age

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30. BENNET ALAN WEINBERG & BONNIE K. BEALER, THE WORLD OF CAFFEINE: THE SCIENCE AND CULTURE OF THE WORLD'S MOST POPULAR DRUG xi–xii (Routledge 2002); *see also* C.D Frary et al., *Food Sources and intakes of caffeine in the diets of persons in the United States*, 105 J. AM. DIETETIC ASS'N 110, 110–13 (2005).

31. *Medicines in My Home: Caffeine and My Body*, U.S. FOOD & DRUG ADMIN., http://www.fda.gov/downloads/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/UnderstandingOver-the-CounterMedicines/UCM205286.pdf (last visited Nov. 10, 2010). *See Why isn't the Amount of Caffeine a Product Contains Required on a Food Label?*, U.S. FOOD & DRUG ADMIN. (Dec. 30, 2009), *available at* http://www.fda.gov/AboutFDA/Transparency/Basics/ucm194317.htm. (finding that measuring the national daily average for American consumers of caffeine is difficult). As discussed in Part IV, although the FDA requires caffeine to be listed in the ingredients of food products (for which caffeine is not a natural part), specific amounts of caffeine in some products are not entirely known.

32. *See* Mayo Clinic Staff, *supra* note 28. *See also Excedrin® Extra Strength*, NOVARTIS CONSUMER HEALTH, INC., http://www.excedrin.com/extra-strength-excedrin-drug-facts.shtml (last visited Nov. 10, 2010); *Anacin®*, INSIGHT PHARMACEUTICALS, http://www.anacin.com/anacin_max_strength.html (last visited Nov. 10, 2010).

33. G. Schreiber et al., *Measurement of Coffee and Caffeine Intake; Implications for Epidemiologic Research*, 17 PREVENTIVE MED. 280, 280–94 (1988) (finding total caffeine intake for coffee drinkers was 363.5 mg per day - this includes caffeine from coffee and other sources like soft drinks, food, and drugs).

34. Joseph Ax, *Teens are Waking up to the Caffeine Habit*, WASH. POST, July 17, 2007, at HE08.

35. Temple, *supra* note 4, at 794.

groups.[36] For children, milk consumption declines as soft drink consumption increases.[37] One recent study reported that ninety-eight percent of children and adolescents between five and eighteen years old consume caffeine weekly.[38] In one dietary survey conducted in 2003, children who reported eating fast food consumed only 260 grams of milk, but drank 358 grams of carbonated soft drinks per day.[39] A 2008 study involving 191 students in seventh to ninth grade revealed their caffeine intake over a two-week period ranged from 0 and 800 milligrams per day.[40] Other researchers suggest that caffeine use among minors may increase as

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36. Judith Jones Putnam & Jane E. Allshouse, *Food Consumption, Prices and Expenditures, 1970-97*, ECON. RESEARCH SERV., USDA (April 1999). Average U.S. consumption of carbonated soft drinks in the U.S. in 1997 was 53 gallons, followed by milk at 24 gallons, and coffee at 23.5 gallons. *Id.* at 25.

37. Lisa Harnack et al., *Soft Drink Consumption Among US Children and Adolescents: Nutritional Consequences*, 99 J. AM. DIETETIC ASS'N 436, 439 (1999). By age five, children consume more carbonated soft drinks than 100% fruit juice, and by age thirteen, adolescents consume more carbonated soft drinks than milk, fruit juice and fruit-based drinks combined. *Id.* at 440. Studies show that milk consumption declined dramatically between the 1970s and the 1990s, while soft drink consumption greatly increased during the same period. *See* Samara Joy Nielsen & Barry M. Popkin, *Changes in Beverage Intake Between 1977 and 2001*, 27 AM. J. PREVENTIVE MED. 205, 206 (2004).

38. Charles P. Pollak & David Bright, *Caffeine Consumption and Weekly Sleep Patterns in US Seventh-, Eighth-, and Ninth-Graders*, 111 PEDIATRICS 42, 42 (2003).

39. Sahasporn Paeratakul et al., *Fast-food Consumption Among US Adults and Children: Dietary and Nutrient Intake Profile*, 103 J. AM. DIETETIC ASS'N 1296, 1335 (2003).

40. Pollak & Bright, *supra* note 38. Mean use of caffeine among these minors averaged 62.7 mg/d. *Id.* at 42.

they age.[41] Nearly one-third of twelve to twenty-four year olds, for example, regularly consume energy drinks loaded with caffeine.[42]

B. Consumer-based Marketing of Caffeinated Products

National consumption of caffeinated products is propelled by extensive marketing efforts to promote their use among consumers, especially minors. Marketing of caffeinated products, particularly soft drinks, is long-standing, extensive, and at times impressionable. Until 1920, advertisements for caffeinated soft drinks emphasized their stimulant qualities.[43] Such marketing claims ceased only after the federal government investigated the use of caffeine in soft drinks.[44] This federal scrutiny did not deter creative marketing campaigns for caffeinated sodas, as illustrated by the success of the Coca-Cola® Company's iconic 1930's marketing campaign to increase product consumption in colder months, in which advertisements featured Santa Claus drinking bottles of Coke® and literally reshaped the public's conception of Santa.[45]

Comparative data on the respective advertising strategies of the top-selling caffeinated and non-caffeinated food products are not readily available to compare marketing trends directly. However, significant anecdotal evidence suggests that caffeinated products, especially sodas and

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41. *See generally* Joel V. Oberstar et al., *Caffeine Use and Dependence in Adolescents: One-Year Follow-up,* 12 J. CHILD ADOLESCENT PSYCHOPHARMACOLOGY 127, 127 (2002). After follow-up of one year of original research subjects, caffeine consumption from beverages increased from 179.9 +/- 151.8 mg/day, which was higher than consumption rates among middle school aged children. *Id.* at 127. *See also* Bertil Fredholm et al., *Actions of Caffeine in the Brain with Special Reference to Factors That Contribute to Its Widespread Use,* 51 PHARMACOLOGICAL REVS. 83, 99, 101, 103 (1999).

42. Tara Parker-Pope, *Taste for Quick Boost Tied to Taste for Risk*, N. Y. TIMES (May 27, 2008), http://www.nytimes.com/2008/05/27/ health/27well.html? r= 1&th& emc=th.

43. *Caffeine in Colas: "The Real Thing" Isn't the Taste*, SCI. DAILY (Aug. 16, 2000), http://www.sciencedaily.com/releases/2000/08/000816073153.htm.

44. *Id.*

45. *Coke Lore: Coca-Cola® and Santa Claus*, THE COCA-COLA CO., http://www .thecoca-colacompany.com/heritage/cokelore_santa.html. The character was traditionally portrayed with a variety of body shapes and attire until Coca-Cola® introduced the now-familiar rotund, red-suited character in a 1931 advertising campaign conceived to encourage consumption of Coke® in colder weather. *Id.*

energy drinks, are heavily marketed to teenagers and young adults. Historically, soft drink manufacturers have aggressively promoted their caffeinated products[46] to all age groups, including children as young as nine years old.[47] Of the ten top-selling carbonated soft drinks in the United States in 2009, eight are caffeinated.[48] Before the voluntary withdrawal of sugar-containing soft drinks from many schools, soft drink manufacturers used numerous methods to target children at school, including passing out free samples (which one U.S. Senator assimilated to tobacco companies handing out free cigarettes to children[49]) and giving away coupons for fast food.[50] Many younger consumers consume soft drinks and fast food in combination. Correspondingly, soft drink manufacturers use promotions involving major fast food chains to market their products.[51] Following the threat of lawsuits and to counter numerous critics, Coca-Cola® and PepsiCo® announced in March 2008 that they would eliminate soft drink marketing aimed toward children under twelve years of age.[52] Despite this pledge, indirect marketing to children and adolescents continues in non-school forums. For instance,

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46. Jill Stark, *Coke in the Firing Line as Caffeine Flunks the Taste Test*, THE AGE (Jan. 9, 2007), http://www.theage.com.au/news/national/coke-in-the-firing-line-as-caffeine-flunks-the-taste-test/2007/01/08/1168104922295.html.

47. David Barboza, *More Hip, Higher Hop: Caffeinated Drinks Catering to Excitable Boys and Girls*, N. Y. TIMES, Aug. 22, 1997, at D1.

48. The best-selling carbonated soft drinks include: Coca-Cola®, Pepsi-Cola®, Diet Coke®, Mountain Dew®, Dr Pepper®, Diet Pepsi®, Sprite®, Diet Mountain Dew®, Fanta®, and Diet Dr Pepper®. All ten are marketed by either the Coca-Cola Co.®, PepsiCo, Inc.®, or Dr Pepper Snapple Group, Inc.®, which collectively control over 75% of the U.S. market for carbonated soft drinks. No other company is responsible for more than a 5% share. *Top-10 CSD Companies and Brands for 2009*, 56 BEVERAGE-DIGEST (Mar. 24, 2010), http://www.beverage-digest.com/pdf/top-10_2010.pdf.

49. Marion Nestle, *Soft drink "Pouring Rights": Marketing Empty Calories*, 115 PUB. HEALTH REP. 308, 315 (2000).

50. *Id.* at 311.

51. *Id.*

52. Harris, *supra* note 27, at 94; Caroline E. Mayer, *Lawyers Ready Suit Over Soda*, WASH. POST (Dec. 2, 2005), http://www.washingtonpost.com/wp-dyn/content/article/2005/12/01/AR2005120101467.html ("A coalition of lawyers who have actively and successfully sued tobacco companies says it is close to filing a class-action lawsuit against soft-drink makers for selling sugared sodas in schools.").

Coca-Cola® spends millions each year to co-sponsor the *American Idol* program and, in a practice also employed by other soda manufacturers, disseminates text messages offering prizes and coupons directly to cell phones, including those used by minors.[53]

Caffeinated products are also extensively advertised through sponsorship of athletes and entertainment events by high-caffeine energy drink products such as Red Bull®,[54] Rockstar®,[55] and Monster®,[56] as well as the more

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53. Susan Gunelius, *Ford, Coke & AT&T Pay More to Sponsor American Idol*, EVERYJOE (Jan. 18, 2008), http://everyjoe.com/work/ford-coke-att-pay-more-to-sponsor-american-idol/?utm_source=everyjoe&utm_medium=web&utm_campaign= b5hubs_ migration; *See also* Federal Trade Commission, *Marketing Food to Children and Adolescents, A Report to Congress*, July 2008, http://www.ftc.gov/os/ 2008/07/P064504foodmktingreport.pdf (finding that manufacturers of carbonated beverages spent more on advertising directed toward children (ages two to eleven) and adolescents (ages twelve to seventeen) than any other industry. Carbonated beverage companies also spent more on "new media" than any other food or beverage category.); *See Twist, Text & Win,* COKE REWARDS, http://mycokerewards. com (last visited Nov. 20, 2010); *See also* Jenna Wortham, *Coupons You Don't Clip, Sent to Your Cellphone*, N. Y. TIMES, Aug. 28, 2009, at B1.

54. *Athletes and Teams,* RED BULL USA, http://www.redbullusa.com/cs/Satellite/ en_US/Athletes/001242746208554 (last visited Nov. 20, 2010) (noting that Red Bull® sponsors nearly 100 individual athletes, as well as Motocross and Supercross teams); *See also Events*, RED BULL USA, http://www.redbull.com/cs/Satellite/en_INT /Events/ 001242745950157 (last visited Nov. 20, 2010) (noting that the company also sponsors a variety of concerts and sports competitions); *What is Flug?,* RED BULL FLUGTAG USA, http://www.redbull flugtagusa.com/what-is-flug (last visited Nov. 20, 2010) (describing the company's "Flugtag," an event repeated dozens of times since its inception in 1991, in which "homemade, human-powered flying machines" are launched from a thirty-foot-deck in front of large crowds); *Red Bull GmbH v. Matador Concepts, Inc.*, 2006 WL 4749923, at *2 (C.D. Cal. 2006) (stating that Red Bull GmbH alone spent nearly $1 billion by 2006 promoting its flagship product in the U.S.).

55. Rockstar® sponsors individual music artists, concert tours in genres from country to heavy metal, and athletes and competitions in sports ranging from mixed martial arts to wakeboarding. *Sports,* ROCKSTAR ENERGY DRINK, http://www. rockstar69.com/sports.php (last visited Nov. 20, 2010); *Music,* ROCKSTAR ENERGY DRINK, http://www.rockstar69.com/music.php (last visited Nov. 20, 2010).

56. Monster® similarly sponsors a variety of athletes, musicians, and entertainment events. *Athletes,* MONSTER BEVERAGE CO., http://www.monsterenergy. com /web/athletes (last visited Nov. 20 2010); *Bands & Music,* MONSTER BEVERAGE CO., http://www. monsterenergy.com/web/bands (last visited Nov. 20, 2010); *News & Events,* MONSTER BEVERAGE CO., http://www.monsterenergy.com/web/events/ (last visited Nov. 21, 2010).

provocatively named Cocaine®[57] (recently renamed "Censured®" following a 2007 FDA warning[58]). Backed by aggressive advertising campaigns targeted at youth and young adults,[59] energy drinks are the fastest growing sector of the U.S. beverage industry.[60] Some energy drinks like TAB Energy® and HER® ("Health Energy Revitalizer") are marketed largely toward a female audience.[61]

However, the premier market for highly-caffeinated energy drinks is young males.[62] Red Bull® advertising includes the use of promotional teams that provide free product samples on college campuses and other locations with large young adult and youth attendance.[63] Hansen Natural Corporation, initially known for producing preservative-free sodas, distributes free samples of its Monster® energy drinks at concerts and beach parties.[64] Highly-caffeinated sodas are often advertised in mainstream

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57. *See* COCAINE, http://drinkcocaine.com/ (last visited Nov. 21, 2010); *see also Releases,* BAWLS, http://www.bawls.com/press_releases.html (last visited Nov. 21, 2010); NOS, http://www.drinknos.com/ (last visited Nov. 21, 2010).

58. January W. Payne, *Energy Drink Pulled over for Speeding*, WASH. POST, May 29, 2007, at HE02, (noting that the FDA warned against naming a product after an illegal drug).

59. Shelley Donald Coolidge, *Soft-Drink Market Awash in Caffeine*, CHRISTIAN SCI. MONITOR, Dec. 19, 1996, at 3.

60. Melanie Warner, *A Jolt of Caffeine, by the Can*, N. Y. TIMES, Nov. 23, 2005, at C15, *available at* http://www.nytimes.com/2005/11/23/business/23drinks.html.

61. Joanna Cosgrove, *Riding the Energy Buzz: Ingredients for Today's Hottest Beverage Segment*, BEVERAGE INDUSTRY, http://www.bevindustry.com/Archives_Davinci?article=1790 (last visited Nov. 10, 2010).

62. Moira Herbst, *Welcome to Caffeine Country*, BLOOMBERG BUSINESSWEEK (Jan. 26, 2007, 7:52PM EST), http://www.businessweek.com/bwdaily/dnflash/content/jan2007/db20070126_163045.htm; *see also* Bruce Horovitz, *Energy drinks take a chill*, USA TODAY (May, 8, 2007, 12:15PM EST), http://www.usatoday.com/money/industries/ food/2007-05-06-energy-slush-usat_N.htm (stating that the target demographic for the new 7-Eleven® Energy Slurpees® is males ages eighteen to thirty-four).

63. *Events,* RED BULL USA, http://www.redbull.com/cs/Satellite/en_INT/Events/001242745950157 (last visited Nov. 20, 2010).

venues, including major television events such as the Academy Awards and the Super Bowl.[65] PepsiCo's high-caffeine Mountain Dew® beverage has been formally tied to the popular video game franchise Halo®.[66]

Some manufacturers of highly caffeinated products have been criticized for marketing campaigns aimed at children and adolescents.[67] KickStart SPARK Smart®, for example, is an energy drink made specifically for children "ages four and older."[68] The manufacturer of Monster® recommends its product is only for those over the age of thirteen.[69] Marketing of caffeinated products mixed with alcohol to youthful audiences has led some large companies to voluntarily drop such products due to public outcry, potential health risks, and ongoing criminal and civil litigation.[70] In the Fall of 2010, a recent spate of hospitalizations of

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64. Christopher Palmeri, *Hansen Natural: Charging at Red Bull with a Brawny Energy Brew*, BLOOMBERG BUSINESSWEEK (June 6, 2005), http://www.businessweek.com/magazine/content/05_23/b3936409.htm.

65. The Academy Awards commercial was the consumer debut of TAB Energy® from the Coca-Cola Co.®, one of a handful of newer energy drinks aimed at female consumers. Cosgrove, *supra* note 61. PepsiCo® plans to air user-created advertisements during the Super Bowl on February 6, 2011 for its highly caffeinated Pepsi MAX® cola, paying out a total of $5 million for top submissions. Andrea Tse, *Pepsi to pay Consumers $5 Million for Super Bowl Ads*, THESTREET.COM, http://www the street.com/story/10862117/1/pepsi-to-pay-consumers-5-million-for-super-bowl-ads.html?cm_ven= GOOGLEN.

66. *Promotions: Honor the Code*, MOUNTAINDEW.COM, http://www.mountaindew.com/#/promos/honorthecode_com/index.php. As a result of this marketing campaign, alternate product labels for the soda (featuring game characters) and limited-edition soda flavors under the brand banner "Mountain Dew Game Fuel" were created. *Id.*

67. *See* Editorial, *Cocaine for Your Kids*, BAKERSFIELD CALIFORNIAN (Apr. 17, 2008), http://people.bakersfield.com/home/Blog/editorials/24988 (last visited Nov. 10, 2010) (attacking high-caffeine powdered drink mix "Blow," packaged to intentionally resemble cocaine, for sending website visitors to a company MySpace page that was "'owned' by a host identifying herself as a 14-year-old female.").

68. *See* KICKSTART SPARK, https://www.advocare.com/00023063/Pdf / kickstart.pdf (last visited Nov. 10, 2010).

69. Warner, *supra* note 60.

70. *See* David Kesmodel, *Drinks with a Jolt Draw New Scrutiny – After Taming Big Brands, States Examine Other Caffeinated Malt Liquors*, WALL ST. J., July 17, 2009, at B1; *see* Allie Grasgreen, *The Next Student Health Problem?*, INSIDE HIGHER ED, Oct. 18,

consumers of the caffeinated alcohol drink Four Loko® led the state of Washington and other jurisdictions to ban its sale.[71]

III. NATIONAL HEALTH IMPACTS OF CAFFEINE USE

Widespread public consumption of caffeinated products, propelled by extensive marketing (particularly to a youthful audience), would not raise concerns if these products posed little to no risk to the health or safety of adult or minor consumers. If caffeine is the "perfect drug," it is because its use in moderation not only poses little to no risks, but may even offer positive health benefits. There is, however, a dark side to extensive caffeine use among consumers, especially children and adolescents. Negative health effects stem not only from the direct ingestion of the drug, but also from the potential that caffeine may serve as a gateway to collateral harms to individual and communal health.

A. Assessing the Health Effects of Caffeine Use

While research on caffeine's effect on individual health is inconclusive, moderate, routine use of caffeine does not generally lead to long-term negative impacts on individual adult health.[72] In fact, regular caffeine consumption, even at higher than average levels, can positively improve adult health. A 1999 study concluded that people who regularly drank at least two cups of coffee halved their risk for gallstone disease[73] and reduced the risk of colorectal cancer by one-quarter.[74] Harvard University

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2010 *available at* http://www.insidehighered.com/news/2010/10 /18/ramapo (last visited Nov. 20, 2010); Brett Barrouquee, *Caffeine Consumption an issue in Ky. Murder Trial*, ASSOCIATED PRESS, Sept. 20, 2010, *available at* http://news.yahoo.com/s/ap/20100920/ap_on_re_us/us_caffeine_defense.

71. *See* Abby Goodnough, *Second State Bans Caffeinated Alcoholic Drinks*, N.Y. TIMES, Nov. 10, 2010, at A24, (noting that Michigan also imposed such bans).

72. *See* Peter Nawrot, *Effects of Caffeine on Human Health*, 20 FOOD ADDITIVE & CONTAMINANTS 1 (2003) (reviews a number of studies on potential adverse effects of caffeine).

73. *See* Michael F. Leitzmann et al., *A Prospective Study of Coffee Consumption and the Risk of Symptomatic Gallstone Disease in Men*, 281 JAMA 2110, 2106–12 (1999).

74. *See also* Edward Giovannucci, *Meta-analysis of Coffee Consumption and Risk of Colorectal Cancer*, 147 AM. J. EPIDEMIOLOGY 1043, 1050 (1998). Another study conducted in Italy showed an 80% drop in liver cirrhosis risk, though the caffeine in coffee may not be a contributor to that outcome. Maria Daglia et al., *Isolation of High Molecular Weight Components and Contribution to the Protective Activity of Coffee*

researchers found that men who drank at least six cups of caffeinated coffee per day were half as likely to develop diabetes as those who did not.[75] Additional research supports the role of caffeine in delaying the onset of Alzheimer's disease,[76] preventing death due to heart failure,[77] increasing energy expenditure,[78] and preventing the onset of type 2 diabetes.[79] Moreover, the Institute of Medicine (IOM) notes that the U.S. military relies on caffeine as a way to improve performance of sleep-deprived soldiers.[80]

Caffeine ingestion can also enhance athletic prowess, particularly among endurance athletes.[81] One study found that consumption of 140 – 400 mg of caffeine at least a half hour before exercise can improve an individual's athletic performance and endurance.[82] Caffeine's propensity to improve athletic performance, however, led to its classification as a banned substance

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against Lipid Peroxidation in a Rat Liver Microsome System, 56 J. AGRIC. & FOOD CHEMISTRY 11653, 11653–60 (2008).

75. Webster G. Ross et al., *Association of Coffee and Caffeine Intake With the Risk of Parkinson Disease*, 283 JAMA 2674, 2676–77 (2000). This effect is directly tied to caffeine. Parkinson's drugs are currently being developed with a derivative based on caffeine as a result of these findings. Sid Kirchheimer, *Coffee: The New Health Food?*, WEBMD (FEB. 24, 2010, 2:05 AM), http://men.webmd.com/features/coffee-new-health-food.

76. Maria Daglia et al., *Isolation, Identification, and Quantification of Roasted Coffee Antibacterial Compounds*, 55 J. AGRIC. & FOOD CHEMISTRY 10208, 10208–13 (2007).

77. Lauren Russell Griffin, *The Caffeine Advantage*, MEN'S HEALTH, Feb. 4, 2008, http://www.menshealth.com/nutrition/health-benefits-caffeine.

78. Temple, *supra* note 4, at 796.

79. Eduardo Salazar-Martinez et al., *Coffee Consumption and Risk for Type 2 Diabetes*, 140 ANNALS OF INTERNAL MED. 1, 2–8 (2004).

80. INST. OF MED., NUTRIENT COMPOSITION OF MILITARY RATIONS FOR SHORT-TERM, HIGH-STRESS SITUATIONS, (National Academies Press 2006). *See* INST. OF MED., USE OF DIETARY SUPPLEMENTS BY MILITARY PERSONEL, (M.R.C. Greenwood et al. eds., Natl' Acad. Press 2008), http://www.ncbi.nlm.nih.gov/ books/NBK3972/.

81. Matthew S. Ganio et al., *Effect of Caffeine on Sport-Specific Performance: A Systematic Review*, 23 J. STRENGTH & CONDITIONING RES. 315, 316–24 (2009).

82. Griffin, *supra* note 77.

at the Olympic Games (until 2004).[83] It continues to be banned over certain maximum allowed levels by the International Olympic Committee and the National Collegiate Athletic Association.[84]

Surprisingly little research focuses on the positive health impacts of caffeine use among minors.[85] Some researchers conclude that caffeine doses of less than 3.0 mg/kg of body weight have essentially no effects on children.[86] Select studies suggest that caffeine may even benefit children with attention deficit hyperactivity disorder (ADHD), which is generally treated with prescription stimulants, although other studies have shown minimal benefits.[87]

Despite the positive effects of moderate caffeine use, there are extensive negative health impacts of caffeine consumption, especially among minors and adults who consume high levels of caffeine. Adverse impacts of caffeine among adults include headaches, nausea, irritability, palpitations, and sleep disorders,[88] particularly for those consuming in excess of 400 mg of caffeine a day.[89] Caffeine can negatively impact fertility.[90] Pregnant women are urged to limit their caffeine consumption, as high, daily consumption increases the risk of spontaneous abortion and impaired fetal growth.[91] Breastfeeding mothers are expressly warned against consuming

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83. Nancy Shute, *Over the Limit?*, U.S. NEWS & WORLD REP., (Apr. 15, 2007), http://health.usnews.com/usnews/health/articles/070415/23caffeine.htm.

84. Temple, *supra* note 4, at 780.

85. *Id.*

86. Jane V. Higdon & Balz Frei, *Coffee and Health: A Review of Recent Human Research*, 46 CRITICAL REVIEWS IN FOOD SCI. & NUTRITION 101, 114 (2006).

87. Bramstedt, *supra* note 21, at 1244-45. For a study finding minimal benefits, *see* John R. Hughes & Kelly L. Hale, *Behavioral Effects of Caffeine and Other Methylxanthines on Children*, 6 EXPERIMENTAL & CLINICAL PSYCHOPHARMACOLOGY 87, 91 (1998).

88. Babu, *supra* note 19, at 38; *see also* John Hopkins Bayview Medical Center, "Information about Caffeine Dependence," *available at* http://www.caffeine dependence.org/caffeine_dependence.html (last visited Nov. 10, 2010).

89. Nawrot, *supra* note 72, at 6-7.

90. Higdon & Frei, *supra* note 86, at 113.

91. Krzysztof M. Kuczkowski, *Caffeine in Pregnancy*, 280 ARCHIVES OF GYNECOLOGY & OBSTETRICS 695 (2009). Groups such as the Organization of Teratology

large amounts of caffeine because caffeine can enter the breast milk ingested by their babies.[92]

The negative effects of over-ingestion of caffeine for millions of children and adolescents vary depending on their age and weight,[93] but some common effects include jitteriness, nervousness, stomachaches, nausea,[94] dependence/withdrawal,[95] and increased risks of sleep disturbances.[96] A 2003 study correlated caffeine with poor sleep habits in seventh to ninth graders.[97] Excessive caffeine intake in children can mimic or contribute to a number of psychiatric and behavioral disorders, including poor attention span, anxiety neuroses, anger,[98] ADHD,[99] eating disorders,[100] and serotonin

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Information Specialists, March of Dimes, and Motherisk agree that high caffeine intake (more than 300 milligrams per day) should be avoided during pregnancy.

92. The American Academy of Pediatrics recommends that nursing women limit caffeine intake. *See* National Toxicology Program, Caffeine, *available at* http://cerhr.niehs.nih.gov/common/caffeine.html (last visited Nov. 10, 2010).

93. Eileen O'Connor, *A Sip Into Dangerous Territory*, Am. Psych. Ass'n (2001), *available at* http://www.apa.org/monitor/jun01/dangersip.aspx. The smaller size of children magnifies the impact of the caffeine they consume. For a thirty-five kg adolescent, the forty-five mg of caffeine in a can of soda is the equivalent of the ninety mg of caffeine in a cup of brewed coffee for the average seventy kg adult. *See* Kelly L. Hale et al., *Caffeine Self-Administration and Subjective Effects in Adolescents*, 3 EXPERIMENTAL & CLINICAL PSYCHOPHARMACOLOGY 364 (1995). For a forty pound, four-year old, one can of cola is the equivalent, on a pound-for-pound basis, of a 150 pound adult consuming two cups of coffee. *See Caffeine Dependency "Brewing,"* 13 Tufts Univ. Diet & Nutrition Letter 9 (Nov. 1995).

94. Hughes & Hale, *supra* note 87, at 92.

95. *Id.* at 90-91.

96. Rebecca L. Orbeta et al., *High Caffeine Intake in Adolescents: Associations With Difficulty Sleeping and Feeling Tired in the Morning*, 38 J. ADOLESCENT HEALTH 451 (2006). *See also* Christina J. Calamaro et al., *Adolescents Living the 24/7 Lifestyle: Effects of Caffeine and Technology on Sleep Duration and Daytime Functioning*, 123 PEDIATRICS 1005 (2009) (noting that sleep disturbance is associated with mood disorders, atopic conditions, asthma exacerbations, obesity, lowered sense of well-being, decreased quality of life, and possibly automobile accidents in young adults).

97. Pollak & Bright, *supra* note 38.

98. O'Connor, *supra* note 93.

syndrome.[101] High caffeine consumption and cycles of caffeine withdrawal among children can negatively impact their academic performance.[102]

Caffeine can be a dangerous drug, even lethal, when taken in extreme quantities.[103] In exceptional cases, ingestion of highly-caffeinated diet pills or other medications can kill users.[104] The death of a British man in October 2010 was attributed to his over-ingestion of a caffeine powder that he had purchased online.[105] Poison control centers and emergency rooms report increasing numbers of people suffering from symptoms of caffeine overdose,[106] as well as deaths – including suicides – from caffeine overdoses (i.e., ingesting caffeine pills).[107] Caffeine toxicity can occur among persons who consume high levels of caffeine or are particularly sensitive to its effects. One survey suggested that seven percent of caffeine users met criteria for caffeine intoxication.[108]

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99. *Caffeine Dependency*, *supra* note 93. Caffeine can be used as a treatment for ADHD, although some studies have found little benefit. Caffeine also can cause some children without ADHD to manifest its symptoms following consumption. *Id.*

100. Bramstedt, *supra* note 21, at 1244.

101. *Id.*

102. Bramstedt, *supra* note 21, at 1246; Temple, *supra* note 4, at 801; J. Canton et al., *Caffeine Use, Sleep Patterns, and Academic Performance in Middle School Students*, 20 SLEEP A68 (2007), www.journalsleep.org/PDF/AbstractBook2007.pdf.

103. Nawrot, *supra* note 72, at 2 (the lethal range of caffeine is between 6.5 g/person and higher; there is, however, a reported survival at 24 g/person).

104. Bramstedt, *supra* note 21, at 1240-42.

105. Melnick, *supra* note 4.

106. Babu, *supra* note 19, at 37 (one source indicates that the American Association of Poison Control Centers received 4,600 calls related to caffeine overuse in 2005; over half of these cases (2,345) required treatment).

107. Shute, *supra* note 83; Bramstedt, *supra* note 21.

108. John Hopkins Bayview Medical Center, "Information about Caffeine Dependence," *available at* http://www.caffeinedependence.org/caffeine_dependence.html (last visited Nov. 10, 2010) (users reported more than 250 mg of caffeine/day, five or more symptoms, and symptoms that interfered with normal functioning); *see also* Chad J. Reissig et al., *Caffeinated energy drinks – A growing problem*, 99 DRUG & ALCOHOL DEPENDENCE 1 (2008) (symptoms of caffeine intoxication

FDA has determined that regular consumption of large amounts of caffeine can lead to "habituation," a mild form of addiction.[109] The social acceptance of caffeine use can cause the addiction to be treated differently than other addictions.[110] Individuals attempting to quit their caffeine habit may experience withdrawal symptoms such as headaches, fatigue, difficulty concentrating, depression, irritability, nausea, and muscle aches[111] that peak between twenty and forty-eight hours after the last consumption of caffeine.[112]

B. Caffeine as a Gateway Drug

Notable negative health effects of caffeine use among adults and adolescents are only part of the story. Caffeine use serves as a gateway to more serious health implications, especially among children. For example, caffeine's ability to increase dopamine in the body's central nervous system may sensitize users, especially children, to the reinforcing effects of all stimulants, increasing their risks for drug and alcohol abuse.[113] Researchers in one study concluded that excessive caffeine consumption among adolescents has been linked to the use of alcohol, cigarettes, multiple illegal drugs, and steroids.[114]

In addition, increased consumption of energy drinks among teens has been correlated with engagement in other high-risk behaviors, including higher rates of unprotected sex, substance abuse, and acts of violence,[115] although it is unclear whether caffeine has any causative effect on these high-risk

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may include nervousness, anxiety, restlessness, insomnia, gastrointestinal issues, and tremors).

109. Food and Drug Administration, *Stimulant Drug Products for Over-the-Counter Human Use; Final Monograph*, 53 Fed. Reg. 6100, 6103 (Feb. 29, 1988).

110. Reissig et al., *supra* note 108, at 2 (substance abuse is characterized by inability to quit, use despite harm, using more than intended, withdrawal, and tolerance).

111. *Id.* at 5.

112. Jasvinder Chawla & Amer Suleman, *Neurologic Effects of Caffeine*, EMEDICINE (Nov. 26, 2008), http://www.emedicine.medscape.com/article/1182710-overview.

113. Hughes & Hale, *supra* note 87.

114. Bramstedt, *supra* note 21, at 1245-46.

115. Parker-Pope, *supra* note 42.

behaviors. Though difficult to measure, corollary public health impacts of widespread availability and overuse of caffeine products may also include increased rates of obesity and lower consumption of essential nutrients.[116]

1. Caffeinated Beverages

Caffeinated soft drinks and other beverages consumed by minors are linked to increases in childhood obesity. Popular among children, caffeinated soft drinks contribute to children's weight gain because most of these products include high sugar and calorie contents.[117] The presence of caffeine in foods or beverages is commonly thought to increase their consumption. Comparable to how tobacco companies claimed nicotine was non-addictive for decades,[118] the American Beverage Association (ABA) (formerly known as the National Soft Drink Association) has disputed that caffeine is addictive.[119] Coca-Cola's website compares an "addiction" to caffeine on par with an addiction to shopping or running.[120]

ABA asserts alternatively that caffeine is added to soft drinks solely as a flavoring agent.[121] Researchers, Griffiths and Vernotica, who conducted

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116. Molly Mann, *Is Caffeine a Culprit in the Childhood Obesity Epidemic?*, CHANGE.ORG, http://health.change.org/blog/view/is_caffeine_a_culprit_in_the_childhood_obesity_epidemic (last visited November 28, 2010). *See also* David S. Ludwig et al., *Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis*. 357 LANCET 505, 507-08 (2001); Lenny R. Vartanian et al., *Effects of Soft Drink Consumption on Nutrition and Health: A Systematic Review and Meta-Analysis*, 97 AM. J. PUB. HEALTH 667, 670-72 (2007).

117. Rodrick D. McKinlay, M.D., *Childhood Obesity: The Link to Drinks*, OBESITY ACTION COALITION, *available at* www.obesityaction.org (other effects reported by this organization included hyperactivity, sleep disturbance and restlessness).

118. Philip J. Hilts, *Tobacco Chiefs Say Cigarettes Aren't Addictive*, N. Y. TIMES, Apr. 15, 1994, at A1.

119. Letter from Richard H. Adamson & Howard R. Roberts to The Journal of the Am. Med. Ass'n, *Caffeine Dependence Syndrome*, 273 JAMA 1397, 1418 (1995). Unlike soft drinks, energy drink manufacturers tout the stimulant effect of their products, which feature large amounts of caffeine. These manufacturers' promotion of caffeine as stimulant suggests that soft drink manufacturers add caffeine for its stimulant and addictive qualities. Reissig et al., *supra* note 108, at 3-4.

120. The Coca-Cola Company Top Ten: Answers to the Ten Most Frequently Asked Questions About Coca-Cola Brand Soft Drinks, *available at* http://www.thecoca-colacompany.com/ourcompany/hal_yourhealth.html (last visited Nov. 10, 2010).

121. Letter from Adamson & Roberts, *supra* note 119, at 1418.

extensive research on caffeine in soft drinks, dispute this claim. They found that ninety-two percent of adults in their study could not distinguish between a regularly-caffeinated cola and a non-caffeinated cola when the base soft drink was identical.[122] When caffeine levels were raised in the sodas, however, the bitterness of the caffeine is more easily distinguished as an unpleasant flavor in the beverage.[123] Griffiths and Vernotica suggested that consumers of caffeinated sodas can become physiologically and psychologically dependent on these drinks, experience withdrawal symptoms if they discontinue their use, and may even feel compelled to consume them.[124] They concluded that "[h]igh consumption rates of caffeine-containing soft drinks are more likely to reflect the mood-altering and physical dependence-producing effects of caffeine as a central nervous system-active drug than its subtle effects as a flavoring agent."[125] In another study, teenagers who stated a taste preference for caffeinated colas were unable to distinguish between caffeinated and decaffeinated versions of their preferred beverage in blind taste tests.[126] Researchers concluded that the teens were likely not choosing their beverage based on its taste, but based instead on the pharmacologic effects of caffeine.[127]

Particularly troubling is research indicating that consumers primarily ingest caffeine not for its positive mood altering and performance enhancing effects, but to avoid withdrawal symptoms.[128] Given a choice between caffeinated and decaffeinated coffee, consumers experiencing caffeine

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122. Griffiths & Vernotica, *supra* note 26.

123. *Id.*

124. *Id.* at 728, 732.

125. *Id.* at 732.

126. Alan R. Hirsch et al., *Health Effects of Caffeine in Commercial Cola Beverages*, ALTERNATIVE & COMPLEMENTARY THERAPIES 298, 301 (2007). For a study demonstrating that caffeine-dependent users will prefer a fruit tea or juice spiked with caffeine over a non-caffeinated version when deprived of caffeine overnight, *see* Martin R. Yeomans et al., *Conditioned Flavor Preference Negatively Reinforced by Caffeine in Human Volunteers*, 137 PSYCHOPHARMACOLOGY 401 (1998).

127. Hirsch et al., *supra* note 126.

128. Kory J. Schuh & Roland R. Griffiths, *Caffeine Reinforcement: The Role of Withdrawal*, 130 PSYCHOPHARMACOLOGY 320 (1997).

withdrawal are 2.3 to 2.6 times more likely to choose caffeinated coffee.[129] Including caffeine in soft drinks is thus a potent marketing tool, as consumers likely interpret the cessation of withdrawal symptoms as a positive effect associated with their caffeinated beverage of choice, leading to increased sales.[130] Cyclical caffeine withdrawal for children may be especially acute, because they cannot always control their supply of caffeine like adults.[131]

Furthermore, consumption of sugary, caffeinated soft drinks, or even diet soft drinks containing no nutritional benefit, may displace the consumption of more nutritional beverages, including milk and fruit juice.[132] Backed by data from the U.S. Department of Agriculture (USDA) showing a corresponding decline in children's milk consumption as soft drink consumption rose between 1977 and 2001,[133] New York City has sought USDA approval for a proposal to ban the use of food stamps for soft drink purchases.[134] Children who regularly consume soft drinks tend to choose full-calorie versions, and as a result, consume more calories per day than children who do not consume soft drinks.[135] These excess calories contribute to childhood obesity rates, which correlate with increases in childhood soft drink consumption.[136] One study determined that each

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129. John R. Hughes et al., *Caffeine Self-Administration and Withdrawal: Incidence, Individual Differences and Interrelationships*, 32 DRUG & ALCOHOL DEPENDENCE 239 (1993).

130. Hirsch et al., *supra* note 126.

131. O'Connor, *supra* note 93.

132. Nestle, *supra* note 49, at 310.

133. Nielsen & Popkin, *supra* note 37.

134. Thomas Farley & Richard F. Daines, *No Food Stamps for Sodas*, N. Y. TIMES, Oct. 7, 2010, at A39, *available at* http://www.nytimes.com/2010/10/07/opinion/07farley.html.

135. Nestle, *supra* note 49, at 309-10.

136. *See generally* STEPHEN CHERNISKE, CAFFEINE BLUES: WAKE UP TO THE HIDDEN DANGERS OF AMERICA'S #1 DRUG (Warner Books 1998).

additional serving of a sugar-sweetened beverage per day increases a child's risk of becoming overweight by nearly sixty percent.[137]

A recent meta-analysis demonstrated a clear association between increasing soft drink consumption, and increasing calorie intake and body weight in children and adults.[138] The increased calorie intake cannot be explained by the calories in the soft drinks alone, raising the possibility that soft drinks "increase hunger, decrease satiety, or simply calibrate people to a high level of sweetness that generalizes to preferences in other foods."[139] Calories absorbed through sugar-sweetened soft drinks are not generally offset by reductions in calories from other sources in the diet, as compensation for liquid calories is not as strong as the body's natural compensation mechanisms for calories in solid foods.[140] Some studies suggest this effect may be enhanced by soft drinks that are sweetened with high fructose corn syrup instead of sugar.[141] One physician has opined that family doctors have a duty to oppose the addition of caffeine to a child's diet, principally because it encourages the consumption of nutrition-poor liquids.[142]

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137. Simone A. French et al., *National Trends in soft drink consumption among children and adolescents age 6 to 17 years: Prevalence, amounts, and sources, 1977/1978 to 1994/1998*, 103 J. AM. DIETETIC ASS'N 10 (2003).

138. Vartanian et al., *supra* note 116, at 667.

139. *Id.* at 672.

140. James Binkley & Alla Golub, *Comparison of Grocery Purchase Patterns of Diet Soda Buyers to those of Regular Soda Buyers*, 49 APPETITE 561 (2007); *see also* Simone A. French et al., *National Trends in soft drink consumption among children and adolescents age 6 to 17 years: Prevalence, amounts, and sources, 1977/1978 to 1994/1998*, 103 J. AM. DIETETIC ASS'N 10 (2003).

141. James Binkley & Alla Golub, *Comparison of Grocery Purchase Patterns of Diet Soda Buyers to those of Regular Soda Buyers*, 49 APPETITE 561 (2007); *see also* Simone A. French et al., *National Trends in soft drink consumption among children and adolescents age 6 to 17 years: Prevalence, amounts, and sources, 1977/1978 to 1994/1998*, 103 J. AM. DIETETIC ASS'N 10 (2003) (each provide an overview of a number of studies on the impact of soft drink consumption on calorie intake and obesity). Even diet soft drinks have been shown in animal studies to disrupt appetite control and increase calorie consumption, although human studies have been inconclusive. Binkley and Golub, *supra* note 140 (citing Terry L. Davidson & Susan E. Swithers, *A Pavlovi an approach to the problem of obesity*, 28 INT'L J. OBESITY 933 (2004)).

142. Griffiths & Vernotica, *supra* note 26, at 734.

2. Caffeine and Fast Food

The potential link between fast food consumption and the obesity epidemic in the United States is well-documented.[143] What is less discussed, however, is how extensively caffeinated beverages underpin the fast food industry. For millions of Americans, fast food and caffeinated beverages go hand in hand.[144] Caffeinated soft drinks and coffees are inexpensive to serve, widely available, and profitable items within the industry.[145] Profits from the sale of caffeinated beverages may flow from increased food sales as well. Following the 2006 debut of its Premium Roast® coffees, McDonalds'® Chief Marketing Officer confirmed that coffee sales had a positive effect on the sale of breakfast food items.[146] The fast food industry is already attempting to capture consumers seeking high-caffeine energy drinks. In 2008, McDonald's® tested the sale of a variety of bottled and canned drinks in its restaurants, including Red Bull® energy drinks, which an industry marketing consultant called "a great opportunity for [McDonald's®] to get incremental sales."[147] In a 2010 survey, energy drinks were fifth on the list of beverages quick-service operators planned to increase on their menus over the next three months.[148]

Studies have demonstrated a clear connection between children eating at fast-food restaurants and higher intakes of calories, fat, added sugars, and sugar-sweetened beverages, together with lower intakes of milk, fruit and

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143. Rachel Rosenheck, *Fast Food Consumption and Increased Caloric Intake: A Systematic Review of a Trajectory Towards Weight Gain and Obesity Risk*, 9 OBESITY REVIEWS 535 (2008).

144. French et al., *supra* note 140 (between 1977/1978 and 1994/1998, USDA data documented an increase in soft drink consumption by children at fast food restaurants from 14.4% to 22.1%). *See generally* Nikhil Deogun, *Enrico Presents Plan to Put Fizz in PepsiCo Sales*, WALL ST. J., Oct. 15, 1998, at B1 (discussing PepsiCo's® marketing strategies to increase sales of Frito-Lay® snacks together with Pepsi® products).

145. Kenneth Hein, *The Last Vice Standing*, BRANDWEEK May 15, 2006, http://www.commercialexploitation.org/news/lastvicestanding.htm.

146. *Id.*

147. Natalie Zmuda and Emily Bryson York, *McD's Tries to Slake Consumer Thirst for Wider Choice of Drinks*, ADVERTISING AGE (June 9, 2008), http://adage.com/article?article_id=127622.

148. *What Are Quick-Service Consumers Drinking?* 44 NATION'S RESTAURANT NEWS 11, 34 (2010).

vegetables that are low in starch.[149] Recent research demonstrates a direct association between consumption of sugar-sweetened beverages and each additional fast food restaurant visit per week in middle school students.[150] Still, there is no direct evidence that manufacturers of caffeinated products use caffeine to directly manipulate consumer dietary choices toward high calorie, fatty foods. The principal correlation is that the addictive nature of caffeine coupled with market-driven consumer preferences encourages further consumption of the caffeinated product itself, which is often high in calories. Of course, food manufacturers may not readily admit to "spiking" their products with caffeine to encourage consumption. Even if they did, they may correctly acknowledge that their products are lawfully purchased and consumed by children and adolescents, as discussed in Part IV below.

IV. REGULATION OF CAFFEINE AND CAFFEINATED PRODUCTS

Despite historic and current evidence of potential negative individual and population-based health effects of widespread caffeine consumption, particularly among children and adolescents, caffeinated products are relatively unregulated by federal, state, or local governments. Caffeine is primarily regulated on the federal level by the FDA under the Food Drug and Cosmetic Act (FDCA). The Dietary Supplement Health and Education Act (DSHEA) of 1994 provides a loophole for caffeinated beverages and other products marketed as dietary supplements. The level and rigor of the regulation of caffeine vary significantly depending on whether caffeinated products are determined to be foods, dietary supplements, or drugs. The scope and limitations of the current federal regulatory scheme, as well as proposed state and local regulations of caffeine and caffeinated products, are discussed below.

A. Federal Regulation of Caffeine in Food and Drugs

Federal regulatory requirements for caffeine differ considerably depending on whether the caffeinated product is classified as a food, dietary supplement, or drug. How a product is classified is driven in part by how it

149. Jean L. Wiecha et al., *School Vending Machine Use and Fast-Food Restaurant Use Are Associated with Sugar-Sweetened Beverage Intake in Youth*, 106 J. AM. DIETETIC ASS'N. 10 (2006) (citing multiple prior studies on the poor dietary choices associated with fast-food dining by children). For a similar study showing comparable results for a mixed sample of adults and children, *see* Sahasporn Paeratakul et al., *Fast-Food Consumption Among US Adults and Children: Dietary and nutrient intake profile*, 103 J. AM. DIETETIC ASS'N, 10 (2003).

150. Wiecha et al., *supra* note 149.

is marketed and consumed. In general, drugs are regulated more closely by the FDA than foods and dietary supplements, presumably because prescription and over-the-counter drugs entail more risks for consumers.[151] The FDA's tripartite classification scheme for caffeinated foods, drugs, and dietary supplements can obfuscate potential harms that these products may pose to the public.

1. Caffeine as "food."

The FDA defines "food" broadly to include any article (or components of such articles) "used for food or drink"[152] including caffeine when added as an ingredient to existing products, such as sodas. In this context, caffeine as an additive is classified as a food, as are foods and beverages that contain caffeine naturally (*e.g.,* coffee, tea, and chocolate). Under the FDCA, caffeine is "generally recognized as safe when used in cola-type beverages in accordance with good manufacturing practice."[153] The FDA has established that the acceptable amount of caffeine in beverages is 0.02% of the total content[154] (or no more than 71 milligrams of caffeine in a twelve ounce beverage).[155] This determination resulted from a court approved settlement in *United States v. Forty Barrels and Twenty Kegs of Coca-Cola*[156] in which the FDA approved the amount of caffeine in cola-type beverages at a level similar to the amount traditionally added to Coca Cola®.[157] Although the FDA noted its long-standing knowledge and

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151. F.D.A., HOW IS A MEDICINE APPROVED BY THE FDA?, http://www.fda.gov /Drugs/ResourcesForYou/Consumers/UCM054420; F.D.A., WHAT FDA REGULATES, http://www.fda.gov/AboutFDA/WhatWeDo/WhatFDARegulates/default.htm.

152. Dietary Supplement Health and Education Act of 1994, 21 U.S.C. § 321(f) (1994).

153. 21 C.F.R. § 182.1180 (2010).

154. *Id.*

155. Reissig et al., *supra* note 108. By way of illustration, Pepsi® contains thirty-eight milligrams of caffeine in a twelve ounce can, and Mountain Dew® contains fifty-four milligrams. Both soft drinks are within FDA' required limits.

156. United States v. Forty Barrels and Twenty Kegs of Coca Cola, 241 U.S. 265 (1916).

157. *See* James Harvey Young, *Three Southern Food and Drug Cases,* 49 J. S. LEGAL HIST. 3, 16-19 (1983) (Coca-Cola's ". . . original case was suddenly settled in December 1917 without a retrial of caffeine's toxicity . . . . The Coca-Cola Company, on its own

approval of the inclusion of caffeine in Coca-Cola® in settling *Forty Barrels*, in 1980, the FDA actually proposed eliminating caffeine from soft drinks due to health concerns.[158] The FDA continues to classify caffeine as a food product that is generally regarded as a safe ingredient instead of as a psychoactive ingredient (which would have potentially subjected soft drinks to more rigorous regulations related to the inclusion of drugs in products).

Unlike foods in which caffeine is a natural component, the FDA requires that solids or beverages to which caffeine is intentionally and artificially added, list caffeine as an ingredient, but the agency does not require the amount of caffeine to be labeled.[159] The FDA's mandatory Nutritional Panel label on foods must only list recommended dietary information for "nutrients."[160] Some manufacturers voluntarily provide the amount of caffeine artificially added to their foods for the benefit of consumers.[161] While the FDA also does not require food manufacturers to provide warning labels on their caffeinated products, it may require such warnings if future health data demonstrate that caffeine poses a public hazard.[162]

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initiative, had changed its formula, reducing the amount of caffeine in each glass and bottle of the beverage."). *Id.* at 18.

158. *Id.* FDA's proposal was resisted by soft drink companies who, as noted previously, claimed that caffeine was a flavor enhancer. *See* Comments of the National Soft Drink Association submitted to the Department of Health and Human Services Food and Drug Administration in Response to the Proposal to Delete Caffeine in Cola-Type Beverages From the List of Substances Generally Recognized as Safe and to Issue an Interim Food Additive Regulation Governing Its Future Use, 45 Fed. Reg. 69817, 69819-20, 69835 (Oct. 21, 1980) (to be codified at 21 C.F.R. pt. 180 and 182).

159. *Why isn't the amount of caffeine a product contains required on a food label*, U.S. FOOD & DRUG ADMIN., http://www.fda.gov/AboutFDA/Transparency/Basics/ucm194317.htm (last updated Dec. 30, 2009).

160. *Id.*

161. Coca Cola Company®, for example, often lists the specific amount of caffeine in milligrams contained in a single serving of its beverages, but not does not do so specifically on the Nutrition Panel. As an example, the packaging in 2010 for a twenty ounce bottle of Coke Zero® indicates that it contains fifty-seven milligrams of caffeine.

162. Caroline Cassels, *Experts Call for Health Warning Labels on Caffeinated Energy Drinks*, MEDSCAPE MED NEWS, Sept. 26, 2008.

2. Caffeine as a "dietary supplement."

The FDA may defer to the intent of the manufacturer in determining whether or not to classify a product as a food.[163] Manufacturers can effectively evade FDA regulations concerning the inclusion of caffeine in foods by marketing products as dietary supplements, which are regulated by DSHEA.[164] DSHEA classifies products that are derived from natural sources (*e.g.*, vitamins, minerals, herbs[165]) as dietary supplements, and not food or drugs.[166] High-caffeine energy drinks commonly avoid the FDA's limitations on caffeine content in soft drinks and food labeling requirements, because they are often sold as nutritional supplements.[167] One of the first energy drinks to be marketed in the United States, Red Bull®, emerged shortly after DSHEA was enacted.[168] When DSHEA was originally passed, federal legislators expressed concerns that manufacturers of these and other products might characterize their products as nutritional supplements to avoid FDA requirements.[169] Subsequently amended in part to assuage these concerns, DSHEA still allows energy drinks and other nutritional supplements to avoid comparatively stricter limitations on caffeine content and labeling requirements than food or drugs.[170]

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163. Nat'l Nutritional Foods Ass'n v. Mathews, 557 F.2d 325, 333 (2d Cir. 1977).

164. Dietary Supplement Health and Education Act of 1994, Pub. L. No. 103-417. Reissig et al., *supra* note 108, at 2 (companies avoid caffeine regulation by claiming that their products fall under DSHEA).

165. 21 U.S.C. §§ 321(ff)(1)(a–c) (1994).

166. Reissig et al., *supra* note 108. This has allowed energy drinks such as Red Bull® and Rockstar®, which contain 80 milligrams and 160 milligrams of caffeine per can, respectively, to avoid greater regulation.

167. Anne Harding, *Labels Urged for Caffeinated Energy Drinks*, REUTERS HEALTH, Sept. 30, 2008, *available at* http://www.reuters.com/article/idUSTRE48T5 VC20080930.

168. *History*, RED BULL USA, http://www.redbull.com/cs/Satellite/en_INT/Products/Company-021242751927664#/product-WORLDWIDE-EXPANSION (last visited Nov. 22, 2010) (noting introduction of its product in the U.S. market in 1997).

169. S. Rep. No. 103-410, at 20–21 (1994), which became Pub. L. No. 103-417.

170. Harding, *supra* note 167.

3. Caffeine as a "drug."

FDA defines a drug as any article "intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease."[171] Products that contain caffeine, and are classified as a drug, are subject to more comprehensive regulation than those classified as food or dietary supplements.[172] For example, FDA limits caffeine in over-the-counter (OTC) pain medicines to no more than sixty-five milligrams per dose.[173] FDA requires lengthy warning labels on OTC drugs containing caffeine[174] and labeling of stimulant products, such as caffeine.[175] Manufacturers of OTC stimulants, including caffeine, are required to provide consumers with a statement of identity, indications, warnings, and directions.[176] Warnings include the appropriate dosage, related health risks, and guidance against children taking such stimulant.[177]

The discrepancies inherent in the FDA's tripartite regulatory scheme for products containing caffeine are striking. For example, a consumer may choose a two ounce candy bar that has little to no caffeine content, or a Snickers Charged® bar with sixty milligrams of caffeine which is not required to have caffeine listed on the label. While a carbonated beverage

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171. 21 U.S.C. § 321(g)(1) (1994).

172. Gwendolyn Prothro, *The Caffeine Conundrum: Caffeine Consumption and Regulation in the United States*, 27 CUMB. L. REV. 65, 77 (1997).

173. *Id.* at 79.

174. 21 C.F.R. § 340.50 (2010). Those warnings include the following:

> The recommended dose of this product contains about as much caffeine as a cup of coffee. Limit the use of caffeine containing medications, foods, or beverages while taking this product because too much caffeine may cause nervousness, irritability, sleeplessness, and, occasionally, rapid heartbeat. For occasional use only. Not intended for use as a substitute for sleep. If fatigue or drowsiness persists or continues to recur, consult a (select one of the following: "physician" or "doctor"). Do not give to children under 12 years of age. Directions: Adults and children 12 years of age and over: oral dosage is 100–200 mg not more often than every 3–4 hours.

Id.

175. *Id.*

176. *Id.* § 340.50 (a)–(d).

177. *Id.* § 340.50 (c).

sold as food is limited to no more than 71 milligrams of caffeine per twelve ounces, the same size carbonated energy drink sold by the same manufacturer and retailer, and often found in the same refrigerated unit, may contain over 150 milligrams of caffeine. Even though a pain medication containing sixty-five milligrams of caffeine is required by the FDA to indicate the amount of caffeine, related health risks, and dosage limitations on its label, Pepsi Max® (with its sixty-nine milligrams of caffeine) is not subject to the same requirements.[178] In addition, while an OTC drug with more than 100 milligrams of caffeine must carry a warning label specifically related to the inclusion of caffeine as an ingredient, Rockstar® energy drink, which contains 160 milligrams of caffeine, is not required to display any warning.[179]

B. State and Local Regulation of Caffeine Consumption Among Minors

One of the more profound facets of regulation of the sale and consumption of caffeinated products is that there are few restrictions on how children and adolescents access these goods. Caffeinated products, whether food, dietary supplements, or drugs, may be purchased by adults, adolescents, and children at nearly every grocery, convenience store, or pharmacy in the United States. There are no national limitations on the sale or consumption of most caffeine or caffeinated products to children.[180] Recently, however, a

178. Prothro, *supra* note 172, at 78.

179. Reissig et al., *supra* note 108.

180. France, Norway, Uruguay, Iceland, and Denmark temporarily banned the sale of Red Bull® products. The ban in France was originally upheld by the European Court, which noted that the French Scientific Committee on Human Nutrition found that Red Bull® contains excessive caffeine. France's ban was prompted in part by the death of a teenager in Ireland who died while playing basketball shortly after consuming four Red Bull® drinks. This ban was lifted in 2008 due to European Union rules that forbid bans on products sold in other member states "unless there is scientific proof of a danger to consumers." Eric Pfanner, *Red Bull Storms Into France*, N. Y. TIMES, June 8, 2008, http://www. nytimes.com/2008/06/08/technology/08iht-ad09.html. Canada, Australia, New Zealand, and Lithuania are currently reviewing measures to limit or completely prohibit the sale of energy drinks to minors. *See* Carly Weeks, *Crackdown urged on caffeine drinks sold to teens*, THE GLOBE AND MAIL, July 27, 2010; *Lithuania: Opposition MPS Propose Ban on Sale of Energy Drinks to Minors,* BALTIC NEWS SERVICES, Feb. 11, 2010; Jano Gibson, Leesha McKenny, and Kelly Burke, *Move to Can Energy Drinks for Kids*, SYDNEY MORNING HERALD, Oct. 28, 2008. Shops near Cardinal Newman Catholic School, in Hove, East Sussex, England have agreed to work with the school to enforce a new ban limiting the sale of energy drinks to minors. Veronica Lorraine, *School's Red Bull Shop ban for pupils*, THE SUN, Oct. 8, 2009,

handful of states have introduced legislation to prohibit the sale of energy drinks or other highly-caffeinated beverages to minors.[181] In 2008, for example, Kentucky State Representative Danny Ford introduced House Bill 374 to prohibit the sale of energy drinks to minors.[182] The bill targeted carbonated beverages with a "caffeine content of 71 milligrams per 12 ounce serving" that also contain taurine and glucuronolactone.[183] Michigan lawmakers proposed a similar bill that same year.[184] Both bills failed to pass in their respective state legislatures. In 2009, Michigan Senator Michael Switalski introduced the Children's Health Initiative, including Senate Bill 230, also known as the "caffeine content bill." Without attempting to prohibit their sale to minors, Senate Bill 230 called for energy drinks to list caffeine content on their label.[185]

In 2009, Maine House Representatives introduced a bill outlawing the sale of energy drinks to minors,[186] relying in part on research by Johns Hopkins University suggestively linking consumption of caffeine with high blood pressure and heart palpitations.[187] The Maine Beverage Association quickly

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http://www.thesun.co.uk/sol/homepage/news/2672473/School-bans-pupils-from-buying-Red-Bull-in-local-shops.html.

181. *Pressure on Energy Drink Manufacturers*, NUTRITION BUS. J., *available at* http://nutritionbusinessjournal.com/news/01-20-pressure-on-energy-drink-manufactures/.

182. *Id.* The bill, if passed, would have also banned the common energy drink ingredients taurine and glucoronolactone. For public comments, *see* Prohibit sale of energy drinks to minors, 2008 H.B. 374, *available at* http://kentuckyvotes.org/ 2008-HB-374.

183. *Pressure on Energy Drink Manufacturers*, NUTRITION BUS. J., *available at* http://nutritionbusinessjournal.com/news/01-20-pressure-on-energy-drink-manufactures/.

184. Angela Cunningham, *Michigan Law Would Ban Some from Buying Energy Drinks*, Aug. 16, 2008, *available at* http://www.wzzm13.com/news/news_story. aspx? storyid=97154&catid=14.

185. Sen. Michael Switalski, *Switalski to Red Bull: List the Caffeine*, MICH. SEN. DEMOCRATS, Press Room, Oct. 8, 2008, *available at* http://www.senate.mi.gov/dem/pr.php?id=1093. To date, the Michigan bill has stalled due in part to the fact that its passage may be federally preempted by FDA regulations on food and beverage labeling.

186. Meg Haskell, *Bill Targets Energy Drink Sales to Minors*, BANGOR DAILY NEWS, Feb. 4, 2009, *available at* http://www.bangordailynews.com/detail/98815.html.

187. *Id.*

rebutted the bill, arguing that even with effective enforcement, "there is nothing in this bill that prevents people under the age of 18 from purchasing a variety of products containing more caffeine than what they might otherwise find in an energy drink . . . ."[188] The bill did not escape legislative committee.[189]

While state-wide bans of energy drink sales to minors have failed, some jurisdictions are focused on preventing the sale of energy drinks in schools. In 2007, IOM opined that beverages with added levels of caffeine should be eliminated from school lunches.[190] However, adoption of this guidance has been relatively unsuccessful/limited. Rhode Island's legislature failed in its attempt to ban the sale of energy drinks from all schools.[191] But a 2004 county-wide ban in Fairfax County, Virginia, prohibiting high school student-athletes from consuming energy drinks at school succeeded.[192] Another high school in New Jersey also prohibited energy drinks in 2008.[193] In Texas, state Attorney General Greg Abbott targeted the energy drink,

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188. *Id.* (statement by lobbyist Newell Augur, speaking for the Maine Beverage Association).

189. *Maine Senate Kills Proposal that Would Ban Energy Drink Sales to Minors*, BEVENET (Mar. 6, 2008, 11:22 AM), http://www.bevnet.com/news/2008/03-06-2008-Maine.asp. If the bill had passed, the act of selling energy drinks to minors would become an offense punishable by a $50 fine for the first violation, $100 for the second violation, and $500 for each subsequent violation. The bill applied only to energy drinks with more than eighty milligrams of caffeine per eight ounce serving. *Id.*

190. Food and Nutrition Board, *Nutrition Standards for Foods in Schools: Leading the Way toward Healthier Youth*, INST. OF MED. (National Academies Press 2007).

191. *Pressure on Energy Drink Manufacturers, supra* note 181.

192. Katherine Dunn, *Virginia High School League Bans Energy Drinks,* BALTIMORE SUN VARSITY LETTERS BLOG (Sep. 22, 2010, 3:35 PM), http://weblogs.baltimoresun.com/sports/highschool/varsityletters/2010/09/virginia_high_school_league_bans_energy_drinks.html. The Virginia High School League recently banned the use of energy drinks during games and practices. Dr. Katherine Dec, chair of the VHSL sports medicine advisory committee, said her committee had "enough anecdotal evidence" to approve the ban. *Id.*

193. *No More Jolt Here; School Bans Energy Drinks*, WTOP.COM (Jun. 17, 2008, 7:39 AM), http://www.wtop.com/?nid=316&sid=1423356.

Cocaine,® instead of attempting to ban all energy drinks.[194] Cocaine, now renamed "Censured" by its manufacturer, Redux, contains nearly 300 milligrams of caffeine in a single eight-ounce serving.[195] Its manufacturer claims the beverage is like "speed in a can" and a "legal alternative" to street drugs.[196] Abbott criticized the product by stating, "Texans have zero tolerance for those who peddle products meant to mimic illegal drugs. This advertising campaign enticed young people with illegal drug references and false claims of health benefits."[197] After he filed suit in Texas state court to oppose its sale, the sale of Censured® was outlawed via a court injunction.[198]

V. MODERN THEMES OF LAW AND POLICY TO COUNTER CAFFEINE USE

Caffeinated products can be relatively harmless, even beneficial, when consumed in moderation. Like other consumable vices, however, these products directly and indirectly pose short and long-term risks of mental and physical morbidity across populations, especially among minors. While children and adolescents are more negatively impacted by excessive caffeine use than adults, the U.S. marketplace for caffeine does not generally distinguish between consumers based on their age. In reality, caffeine is a common (albeit needless) ingredient in candies, sodas, and drinks popular with kids. Minors may purchase most caffeinated products to the same extent as adults even though minors lack the same capacity to control or make fully informed decisions about their consumption. Manufacturers of caffeinated products can market their products towards minors, position them in places minors frequent, and hand out samples to minors without legal limitation in most cases. Parents may serve as vanguards of their kids' caffeine habits, but this presumes parents are aware of the risks or amount of

194. Anabelle Garay, *Texas Court Halts Sale of Cocaine Energy Drink*, ASSOCIATED PRESS, May 17, 2007, *available at* http://209.189.226.235/stories/051707/texas_2007 0517016.php.

195. Michael Mason, *The Energy-Drink Buzz Is Unmistakable. The Health Impact Is Unknown*, N. Y. TIMES, Dec. 12, 2006, at F5, *available at* http://www.nytimes.com/ 2006/12/12/health/12cons.html.

196. *Id.*

197. Garay, *supra* note 194.

198. *Id.* Following the ban of Censured® in Texas, the UK began investigating the drink. *Call to Ban Cocaine Energy Drink*, BBC NEWS (Jul. 8, 2008), http://news. bbc.co.uk/2/hi/uk_news/politics/7495587.stm.

caffeine in common products. Parents may even routinely serve their children caffeinated products without significant legal ramifications (outside select cases of potential child abuse).[199]

Against this backdrop, the Comment proposes reasonable legal and policy recommendations below that are designed to limit the access, sale, and marketing of caffeinated products to minors, as well as improve the public's understanding of the direct and collateral harms of over-consumption of caffeine among children and adolescents. These recommendations include (1) directly limiting sales of highly-caffeinated products; (2) controlling aggressive marketing of caffeinated products toward minors; (3) eliminating distinctions between food and dietary supplements containing high amounts of caffeine; (4) enhancing product labeling requirements; (5) exploring litigation strategies to curb caffeine use among kids; and (6) protecting and promoting the child and adolescent health through education and prevention.

A. Limiting Sales of Highly-Caffeinated Products to Minors

Children and adolescents are unable to directly purchase other consumable vices like tobacco, alcohol, and drugs, but routinely purchase high-caffeine products like energy drinks, certain candies, and OTC medications. Without equating the harms of tobacco, alcohol, and drug use among minors to the same level of excessive use of caffeine, widespread access of children and adolescents to highly-caffeinated products is unwarranted. Some states have already limited kids' access to caffeinated sodas and energy drinks at schools,[200] but still allow children to purchase or consume these and other caffeinated products virtually unabated at home and in convenience stores, groceries, theaters, arenas, malls, sporting events, fairs, and restaurants. Any governmental effort to directly limit sales of caffeinated products to adults will be decried as yet another example of government serving as "food police,"[201] imposing its will against consumers' choices. Notwithstanding a strong history of governmental interventions through FDCA and other laws to protect the public from other,

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199. *See, e.g.*, State ex rel J.O., 189 P.3d 90, 92-94 (Utah Ct. App. 2008) (mother who allegedly dispensed caffeinated soft drink to her infant child was alleged to have engaged in child abuse, which the court summarily dismissed for lack of sufficient evidence).

200. *See* discussion *supra* Part IV.B. States are also limiting the sale of alcoholic energy drinks. *See* Curt Woodward, *State outlaws alcoholic energy drinks*, ASSOCIATED PRESS, http://www.theolympian.com/2010/11/11/1435730/state-outlaws-alcoholic-energy.html.

201. Editorial, *Food Police on Patrol*, BOSTON HERALD, Oct. 12, 2010, http://www.bostonherald.com/news/us_politics/view/20101011food_police_on_patrol/.

similar products,[202] market-wide sales restrictions of caffeinated products is a non-starter.

However, limited prohibitions of the sale of heavily-caffeinated products to children (particularly those under the age of twelve who the FDA advises against excess caffeine ingestion) are viable alternative that directly furthers the public's health and are already under consideration in some states and other countries.[203] Absent direct sales prohibitions, enhanced sales taxes of heavily-caffeinated products may stem specific purchases, particularly among adults through which some children may access these products. Although sales tax increases correlate directly with lower consumption of addictive products like tobacco,[204] product-specific taxes are often unpopular with adults. These sorts of "sin taxes" may be seen as paternalistic, particularly when use of caffeinated products does not implicate second-hand effects like those attributed to tobacco products.[205]

B. Derailing Aggressive Marketing of Caffeinated Products to Kids

As exhibited within the tobacco industry over decades, even if minors cannot lawfully purchase a product, manufacturers may still target them in marketing campaigns.[206] Thus, even if limited sales restrictions of highly-

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202. *See supra* Part IV; *see also* LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW: POWER, DUTY, RESTRAINT 181–226 (2d ed. 2008).

203. Restriction of caffeine sales is not unprecedented. For example, a recent study in Sweden shows that caffeine restrictions proved effective in preventing caffeine induced suicides and overdoses. Gunilla Thelander et al., *Caffeine fatalities – Do sales restrictions prevent intentional intoxications?*, 48 CLINICAL TOXICOLOGY 354 (2010).

204. *See* World Health Organization Tobacco Fre linitative, Key elements of tobacco control legislation, http://www.who.int/tobacco/research/legislation/key_ elements/ en/index.html ("Price and tax measures are an important and effective means of reducing tobacco consumption, especially among young people. Raising taxes . . . not only generates revenue for government, but also produces a prompt decline [of] tobacco use, particularly among young people and low income groups."); Jérôme Adda & Francesca Cornaglia, *Taxes, Cigarette Consumption, and Smoking Intensity*, 96 AM.ECON. REV. 1013 (2006).

205. Joseph Berger, *New Strategy for Soda Tax Gives Diet Drinks a Break*, N. Y. TIMES, May 19, 2010 at A22. *See also* Kelly D. Brownell. & Thomas R. Frieden, *Ounces of Prevention — The Public Policy Case for Taxes on Sugared Beverages*, 360:18 NEW ENG. J. MED. 1805, 1806 (2009); Associated Press, *FDA plans graphic cigarette warnings*, ARIZ. REPUBLIC, Nov. 11, 2010, at D1.

206. GOSTIN, *supra* note 202, at 358–61.

caffeinated products to minors take hold, marketing efforts to increase consumption of these products by children and adolescents must be separately regulated. Governmental attempts to control marketing practices, absent compelling scientific evidence, face significant challenges under the stringent commercial speech doctrine of the First Amendment.[207] Yet, government is capable of directly limiting advertising of specific products harmful to the public's health. As espoused by the U.S. Supreme Court in *44 Liquormart*,[208] government's power to regulate commercial transactions justifies its ability to regulate commercial speech linked to those transactions. The government may require commercial speech to "appear in such a form, or include such additional information, warnings, and disclaimers, as are necessary to prevent its being deceptive"[209] or to protect the public's health.[210] With sufficient evidence of their negative impact on child and adolescent health, targeted advertising of caffeinated products to children could be restricted through reasonable measures designed to limit their impact. Similar to marketing restrictions for tobacco products, government could control the placement of caffeinated products' advertisements, restrict product placement around schools, and mandate corrective advertising for caffeinated goods.[211] A recent New York City health department advertising campaign linking sodas and obesity is illustrative of governmental action in advertising.[212] Likewise, states could regulate the marketing of food or beverages containing caffeine to prevent deceptive sales practices.[213]

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207. *Id.* at 343–55.

208. 44 Liquormart v. Rhode Island, 517 U.S. 484, 499 (1996).

209. Va. State Bd. of Pharm. v. Va. Citizens Consumer Council, Inc., 425 U.S. 748, 772 (1976).

210. GOSTIN, *supra* note 202, at 361–65.

211. United States v. Philip Morris, 449 F. Supp. 2d 938, 938-41 (D.D.C. 2006).

212. Anemona Hartocollis, *E-mails Reveal Dispute Over New York's Ad Against Soda*, N.Y. TIMES, Oct. 29, 2010, at A19, *available at* http://www.nytimes.com/2010/10/29/nyregion/29fat.html.

213. Fla. Lime & Avocado Growers v. Paul, 373 U.S. 132, 144 (1963) If certain caffeinated products are considered imported foodstuffs, states could also enact higher standards than those set by FDA. *Id.* (allowing higher standards for oil ratio in imported avocados).

Voluntary measures undertaken by manufacturers of caffeinated products, vendors, or broadcasters may be equally effective as extensive government regulation. Caffeinated soda manufacturers, as noted above, have already scaled back their in-school advertising of their products.[214] Agreements between schools and beverage manufacturers to prohibit product placement for products containing high levels of caffeine in school zones are another option.[215] The Cartoon Network has sought to restrict the marketing of soft drinks and caffeinated products on its channel to children under the age of twelve.[216] These and other voluntary measures reflect sound public policy in furtherance of child and adolescent health.

C. Eliminating Distinctions for Food and Dietary Supplements with Caffeine

One of the most insidious consequences of federal regulation of foods, drugs, and dietary supplements through FDA and DSHEA is the creation of a legal environment, noted above,[217] which divergently regulates the manufacture, sale, and labeling of similar products with high caffeine content. FDA's bifurcated structure establishes one set of requirements for caffeine in foods[218] (like soda) while DSHEA sets virtually no standards for the inclusion of caffeine in dietary supplements[219] (like energy drinks). Meanwhile, children and adolescents can purchase either product without

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214. *See* discussion *supra* Part IV. B.

215. For example, to reduce youth exposure to tobacco advertising, the National Association of Attorney Generals in 2005 reached an agreement with publishers, *Time*, *People*, *Sports Illustrated*, and *Newsweek*, that required the removal of all tobacco related advertisements from the school editions of each magazine. *Tobacco Ads Will Be Removed from School Magazines*, CONSUMERAFFAIRS.COM, June 20, 2005, http://www.consumeraffairs.com/news04/2005/tobacco_schools.html.

216. Harris, *supra* note 27, at 115 (citing Cartoon Network Sets Drinks Advertising Rules, Just-Drinks (Aug. 20, 2007) (*available at* 2007 WLNR 16164353)). *See U.S. Cartoon Network Sets Drink Advertising Rules*, JUST-DRINKS.COM (Aug. 20, 2007), http://www.just-drinks.com/news/cartoon-network-sets-drinks-advertising-rules_id91265.aspx.

217. *See* discussion *supra* Part IV.A.

218. 21 U.S.C. § 321(f) (1994).

219. Dietary Supplement Health and Education Act of 1994, Pub. L. No. 103-417, 108 Stat. 4327-30.

federal restriction and often without sufficient knowledge of the considerably higher caffeine content in energy drinks. This regulatory structure needs to be reformed to ensure that comparable products contaminating caffeine are treated consistently. We recommend, for example, that FDA's current standard for caffeinated beverages (i.e., caffeine may constitute no more than 0.02% of the total content)[220] apply to all beverages that are lawfully sold and consumed by children and adolescents under the age of twelve. Any beverages containing in excess of the FDA approved amount should be subject to more stringent regulations (e.g., warning labels and restrictions as to who can purchase the product). While this recommendation may require federal legislative amendments to clarify FDA's jurisdiction over dietary supplements, elimination of such regulatory inconsistencies is essential to resolve existing deficiencies in how caffeinated products are packaged, marketed, and sold to children and adolescents.

D. Enhancing Labeling Requirements

A further consequence of the existing federal regulatory scheme is that while drugs with caffeine are required by law to include warning labels,[221] caffeinated dietary supplements, foods, and beverages are not, even when caffeine levels in these products approach the same or higher levels as regulated drugs. Providing warning labels about potential harms of OTC and prescription medications makes sense. However, it is antithetical to require a warning label about caffeine in medications and not require any warning about similar or higher rates of caffeine in foods or beverages. While research on the efficacy of warning labels is ambiguous,[222] enhanced warning labels on foods and dietary supplements could guide consumers about the health effects of caffeine, particularly for parents looking to monitor their children's caffeine consumption. Regardless of their classification pursuant to FDCA or DSHEA, consumable products with excessively high caffeine content should feature warning labels indicating that they are unsafe for children and adolescents to consume. These labels might state, for example:

> Caution. This product contains a high amount of caffeine. Do not use if you are under the age of 12 or otherwise sensitive to

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220. 21 C.F.R. § 182.1180 (2010).

221. 21 C.F.R. § 340.50 (2010).

222. David W. Stewart & Ingrid M. Martin, *Intended and Unintended Consequences of Warning Messages: A Review and Synthesis of Empirical Research*. 13 J. PUB. POL'Y & MARKETING 1, 3 (1994).

> caffeine. Do not consume simultaneously with other products containing caffeine, alcohol, other stimulants, or any prescription or over-the-counter medicine without first consulting a medical professional. Use of this product may cause sleep disturbances, anxiety, headaches, nausea, and heart palpitations, and should not be substituted for sleep. Regular use of this product may result in caffeine dependency.

Likewise, FDA should reconsider its failure to require caffeine content labeling on the Nutrition Facts panel of foods.[223] Some product manufacturers voluntarily provide this information on their products or advertising; many, however, do not.[224] Even though caffeine is not a nutrient like vitamins, fats, or sugars, consumers need precise information about the amount of caffeine in their foods to accurately track their daily caffeine consumption.

E. Exploring Litigation to Address the Harms of Caffeine Use

To date, lawsuits directly addressing the harms of caffeine among consumers are virtually non-existent.[225] This may be attributable to FDCA's disallowance of private causes of action[226] and preemption of state legal claims.[227] Even if consumers sought to restrict specific manufacturing practices of caffeinated products, only FDA can bring suit and enforce direct

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223. *Why isn't the Amount of Caffeine a Product Contains Required on a Food Label,* U.S. FOOD & DRUG ADMIN., http://www.fda.gov/AboutFDA/Transparency/Basics/ucm194317.htm (last updated Dec. 30, 2009).

224. *See* discussion *supra* Part II.B.

225. Interestingly, caffeine use has been referred to in tobacco litigation by tobacco companies comparably to use of nicotine, at least in some respects. *See, e.g.*, Prado Alvarez v. R.J. Reynolds Tobacco Co., 313 F. Supp. 2d 61 (D. Puerto Rico 2004) (Reynolds quoted a 1964 Surgeon General Advisory Committee report stating that: "In medical and scientific terminology [cigarette smoking] should be labeled *habituation* to distinguish it clearly from *addiction,* since the biological effects of tobacco, like coffee and other caffeine-containing beverages, betel morsel chewing and the like, are not comparable to those products produced by morphine, alcohol, barbiturates, and many other potent addicting drugs.") alteration in original)). *Id.* at 70.

226. Summit Tech., Inc. v. High-Line Med. Instruments Co., 922 F. Supp. 299, 305 (C.D. Cal. 1996).

227. *See* Hansen Beverage Co. v. Innovation Ventures, LLC, No. 08-CV-1166-IEG, 2009 WL 6597891, at *9 (S.D. Cal. Dec. 23, 2009).

violations of the Act.[228] Yet in an era of consumer lawsuits over harmful products like tobacco, guns, drugs, trans fats, and fast food,[229] future litigation against the manufacturers and sellers of highly-caffeinated products popular among children and adolescents may be predictable.

Cases like *Fellner v. Tri-Union Seafoods*,[230] for example, may open the door for state tort actions seeking damages against caffeinated product manufacturers for failure to warn of specific harms. Ms. Fellner contracted severe mercury poisoning after consuming large quantities of tuna products; and subsequently sued the tuna manufacturer for failure to warn.[231] In its motion to dismiss, Tri-Union Seafoods argued it had no duty to warn Ms. Fellner (or others who consume large quantities of tuna) because the risk of mercury poisoning from excessive consumption of tuna is "common knowledge."[232] The federal district court disagreed, holding that over-consumption is generally a fact specific determination, and "naturalness" (in this case the presence of mercury in tuna) is not a defense to liability.[233] The existence of a duty to warn, noted the court, depends on "whether (1) the dangers of the product were obvious, and (2) [the consumer's] use was foreseeable."[234] Under this analysis, advocates for children and adolescents who are harmed directly by their caffeine consumption may be positioned to bring "failure to warn" claims against manufacturers and sellers since common knowledge about caffeine's effects, over-consumption, and its natural presence in products may not foreclose liability. Beyond offering compensation for harms to individuals or potential groups via class action, this type of litigation can curtail industry practices surrounding the mass

228. 21 C.F.R. § 7.1 (2009).

229. *See generally*, GOSTIN, *supra* note 202, at 181–226.

230. Fellner v. Tri-Union Seafoods, L.L.C., 539 F.3d 237, 248 (3d Cir. 2008) ("[I]t is hard to imagine a field more squarely within the realm of traditional state regulation than a state tort-like action seeking damages for an alleged failure to warn consumers of dangers arising from the use of a product.").

231. *Id.* at 241.

232. Fellner v. Tri-Union Seafoods, L.L.C., No. 06-CV-0688, 2010 WL 1490927, at *7 (D.N.J. Apr.13, 2010).

233. *Id.* at *9.

234. *Id.*

distribution of heavily-caffeinated products by encouraging self-imposed, industry controls.[235]

F. Public Health Prevention and Education

Despite considerable evidence of direct and indirect impacts of caffeine ingestion especially among children and adolescents, caffeine itself is not a prime target of public health efforts nationally. Neither the Department of Health and Human Services (DHHS) or FDA provides specific recommendations regarding caffeine consumption for children or adolescents.[236] USDA's Nutrition.gov website[237] provides links to hundreds of caffeine-related articles and information, but little direct guidance on the need for minors to limit their consumption. The Nemours Foundation's Kids Health website is one of the few online resources that provides basic information about caffeine and its potential health impacts for kids and parents.[238] Some federal, state, and local public health authorities have sought to curb the sale or access of products containing caffeine, like sodas, energy drinks, and alcohol-caffeine beverages.[239] The State of California has even floated the notion that caffeine be classified as a carcinogen,[240] despite

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235. Stephen P. Teret & Michael Jacobs, *Prevention and Torts: The Role of Litigation in Injury Control*, 17 J.L. MED. & ETHICS 17, 20 (1989).

236. Ax, *supra* note 34.

237. USDA NUTRITION.GOV, http://riley.nal.usda.gov/nal_display/index.php?info_center=11&tax_level=1&tax_subject=382 (last modified Nov. 16, 2010).

238. *See e.g. Caffeine and Your Child*, reviewed by Stephen Dowshen, M.D. (Feb. 2009), http://kidshealth.org/parent/growth/feeding/child_caffeine.html. This website is accessible through the federal Department of Health and Human Services and Medline Plus.

239. Letter from Amelia M. Arria et al., to Att'y Gens. Blumenthal, Shurtleff, and Limtiacio (Sept. 21, 2009), http://www.fda.gov/downloads/Food/FoodIngredientsPackaging/UCM190372.pdf. *See also* Philip Swarts, *Eight Issues on the Aldermen's Minds at City Council Meeting*, MEDILL REPORTS, (Nov. 3, 2010) http://news.medill.northwestern.edu/chicago/news.aspx?id=171675; *News, Notes and a Few Comments from the State Capital*, THE GREATER LANSING BUSINESS MONTHLY, http://www.lansingbusinessmonthly.com/articles/department-columns/110-current-month/1981-news-notes-and-a-few-comments-from-the-state-capitol.html (last visited Nov. 13, 2010).

240. *See National Automatic Merchandising Association Warns Of Attempts To Classify Caffeine As Carcinogen*, VENDINGMARKETWATCH.COM (Oct. 28, 2010)

significant, conflicting evidence as to the link of caffeine and cancer.[241] In general, however, widespread consumer use of caffeine seems to evade attention and corresponding interventions by public health authorities.

Continued allowance of mass consumption of a popular, legal drug like caffeine among Americans is likely, but this does not foreclose public health authorities from using legal and policy tools to address the short- and long-term health effects of caffeine use among minors. Pursuant to their police and *parens patriae* powers,[242] state and local public health authorities are positioned to curtail caffeine use among minors provided they do not run afoul of constitutional norms or federal preemption pursuant to FDCA or other acts. Caffeinated products that are deemed harmful to populations can be taken off the market as a public health nuisance[243] or stripped of future sales by denials of the use of government funding for these products. Public health education campaigns on the potential harms of caffeine use can run counter to product advertisements designed to attract parents (and kids alike) to consume caffeinated products. Aggressive marketing or sales practices that target children and adolescents through deceptive or unfair claims about caffeinated products can be restricted without violating the First Amendment.[244] Even zoning laws and policies can be used to limit the numbers of outlets, such as fast food restaurants, that dispense caffeinated beverages near schools or other locations.[245] Collectively, these and other

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http://www.vendingmarketwatch.com/web/online/VendingMarketWatch-News/National-Automatic-Merchandising-Association-Warns-Of-Attempts-To-Classify-Caffeine-As-Carcinogen/1$28447.

241. *See* The Carcinogenic Potency Project (Oct. 3, 2007), *available at* http://potency.berkeley.edu/chempages/CAFFEINE.html; P. J. Donovan & J. A. DiPaolo, *Caffeine Enhancement of Chemical Carcinogen-Induced Transformation of Cultured Syrian Hamster Cells*, 34 CANCER RES. 2720 (1974), http://cancerres.aacrjournals.org/content/34/10/2720.full.pdf; *contra* David M. Wolfrom et al., *Caffeine Inhibits Development of Benign Mammary Gland Tumors in Carcinogen-Treated Female Sprague-Dawley Rats*, 19 BREAST CANCER RES. & TREATMENT 269 (1991).

242. GOSTIN, *supra* note 202, at 222.

243. *Id.*; *see also* Woodward, *supra* note 200.

244. *See* discussion *supra* Part V.B.

245. *See generally* Julie Samia Mair et al., *The Use of Zoning to Restrict Fast Food Outlets: A Potential Strategy to Combat Obesity*, CTR. FOR LAW & THE PUBLIC'S HEALTH AT JOHNS HOPKINS & GEORGETOWN UNIVERSITIES (Oct. 2005), http://www.publichealthlaw net/Zoning%20Fast%20Food%20Outlets.pdf.

measures can do more than raise critical awareness of the public health implications of excessive caffeine use among minors. They can stymie the flow of caffeinated products to children and adolescents at a pivotal time in their development when caffeine use can become habitual and potentially dangerous.

VI. CONCLUSION

The proliferation of caffeinated products in American society compromises an individual's ability to completely eliminate their ingestion of caffeine. For most adults, there may be little reason to decaffeinate their diets because caffeine offers positive benefits with mild to no negative side effects. While caffeine use offers some benefits for adult consumers, its direct and indirect harms, particularly concerning children and adolescents, can negatively impair their physical and mental health. Despite recognized harms, manufacturers and sellers of caffeinated products routinely sell and dispense caffeinated products to kids, and even target them as part of their marketing activities. Regulation of caffeine in the market is fragmented, leading to diverse labeling requirements, warnings, and content restrictions among foods, beverages, dietary supplements, and drugs.

Legal and policy reforms are needed to better inform consumers of the caffeine they and their children are ingesting. Sales restrictions of highly-caffeinated products to minors may hinder their access beyond school grounds. Public health education programs, warning labels, consistent regulatory standards for caffeine content in foods, and restrictions on marketing caffeine-added products to minors may empower consumers to make better, informed choices about their (and their children's) caffeine intake. Affirmative legal action, whether through consumer lawsuits or public health nuisance actions, may also be warranted to hold manufacturers and retailers accountable for harms caused by excessive levels of caffeine added to their products and dispensed to children and adolescents. Though likely opposed by manufacturers and retailers of caffeinated products, these limited reforms in combination may substantially improve the collective and individual health of America's children and adolescents.