

lenged his state's lethal-injection protocol. On April 7, U.S. District Judge Malcolm Howard ruled that his execution in North Carolina could proceed only if there were "execution personnel with sufficient medical training to ensure that Plaintiff is in all respects unconscious *prior to and at the time of* the administration of any pancuronium bromide or potassium chloride."

Subsequently, the protocol was modified to include the BIS monitoring of Brown's level of consciousness. The monitor was to be located in an observation room adjacent to the execution chamber, next to an electrocardiographic monitor, where a licensed physician and a licensed registered nurse could view them. If the BIS reading was 60 or higher after the injection of the initial 3000 mg of sodium thiopental, then the execution team was to continue to administer the agent until the reading fell below 60, and only then were the subsequent injections to be given.

On April 11, a North Carolina corrections official called Aspect's toll-free telephone sales number to purchase a monitor, which was shipped the same day. According to Aspect, the written purchase-order request sent from North Carolina stated, "This equipment

is used to monitor vital signs and sedation scales of patients recovering from surgery." After he became aware of the sale, Kelley described it as "a regrettable system failure." According to an affidavit from Kelley, the pur-



the State's use of the BIS monitor will not adequately ensure that Brown will remain unconscious throughout his execution."

Sales of EEG monitors to corrections facilities pose a quandary, since the devices have perfectly acceptable uses in prison hospitals. Since 2000, Aspect has sold about a half-dozen BIS devices to such institutions. The company now requires that, for sales to penitentiaries, an authorized and responsible person employed by the facility must sign and date a statement assuring that sensors and monitors "will not be used on an individual or individuals during or as part of a lethal injection execution procedure." In May, Aspect received another inquiry — this time from a state prison hospital in California. As of early June, Aspect had heard nothing further.

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chasers "never indicated in any way that they intended to use [the monitor] in connection with the execution of the Plaintiff." A spokesperson for the North Carolina Department of Correction declined to comment.

After Judge Howard accepted the modified protocol, a federal appeals court also accepted it, in a two-to-one decision. In his blistering dissent, Judge M. Blaine Michael wrote that "the clear weight of evidence, however, reveals that

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## Food Marketing and Childhood Obesity — A Matter of Policy

Marion Nestle, Ph.D., M.P.H.

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Everyone knows that American children are becoming fatter, but not everyone agrees on the cause. Many of today's children

routinely consume more calories than they expend in physical activity, but this imbalance results from many recent changes in

home, school, and neighborhood environments. Concerned about the health and economic costs of childhood obesity, in 2004 Con-

gress asked the Centers for Disease Control and Prevention to examine one potential cause — the marketing of foods directly to children. The result is a new Institute of Medicine (IOM) study, *Food Marketing to Children and Youth: Threat or Opportunity*,<sup>1</sup> that provides a chilling account of how this practice affects children's health. Food marketing, the IOM says, intentionally targets children who are too young to distinguish advertising from truth and induces them to eat high-calorie, low-nutrient (but highly profitable) "junk" foods; companies succeed so well in this effort that business-as-usual cannot be allowed to continue.

Since the late 1970s, obesity rates have more than doubled among children 6 to 11 years of age and more than tripled among those 12 to 19 years of age. As one consequence, type 2 diabetes mellitus is no longer rare in pediatric practice.<sup>2</sup> The IOM states its first conclusion politely: the diets of American children are "in need of improvement." As its report makes clear, this is a gross understatement: at least 30 percent of the calories in the average child's diet derive from sweets, soft drinks, salty snacks, and fast food. Soft drinks account for more than 10 percent of the caloric intake, representing a doubling since 1980. According to the U.S. Department of Agriculture, even babies consume measurable quantities of soft drinks, and pediatricians say it is not unusual for overweight children to consume 1200 to 2000 calories per day from soft drinks alone.

Is food marketing responsible? The IOM analyzes the results of 123 published, peer-reviewed studies addressing links between food marketing and children's prefer-

ences, requests, consumption, and adiposity. Despite Talmudic parsing of the limitations of the research, the IOM finds that the preponderance of evidence supports the links. Marketing strongly influences children's food preferences, requests, and consumption. The idea that some forms of marketing increase the risk of obesity, says the IOM, "cannot be rejected."

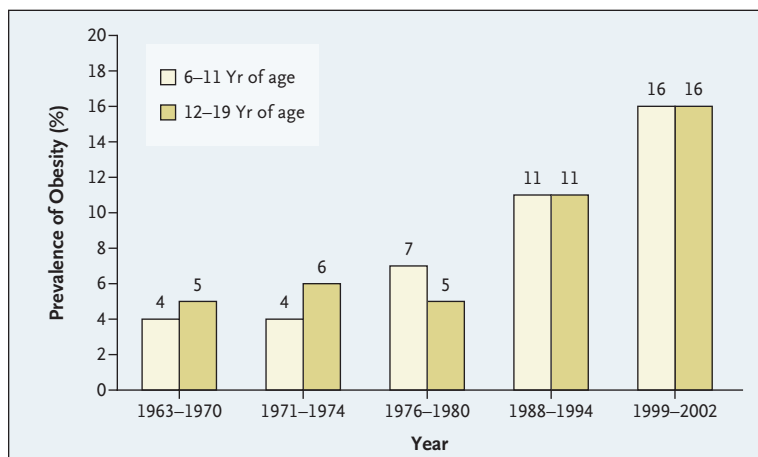
The IOM conducted its study under a considerable handicap. Companies would not provide proprietary information, because the IOM is required to make public all documents it uses. The report reveals why companies insist on keeping such research private. It lists numerous firms that conduct marketing research focused even on preschool children, using methods — photography, ethnography, focus groups — in an Orwellian-sounding fashion to elucidate the psychological underpinnings of children's food choices, "kid archetypes," the "psyche of mothers as the family gatekeeper," and "parent-child dyads of information." As the IOM documents, this enterprise is breathtaking in its comprehensive and unabashed effort to provide a research basis for exploiting the suggestibility of young children. Although marketers justify appeals to children as "training" in consumer culture, as free speech, and as good for business, they are not selling just any consumer product: they are selling junk foods to children who would be better off not eating them.

American children spend nearly \$30 billion of their own money annually on such foods, and companies design products to tap this market. Since 1994, U.S. companies have introduced about 600 new children's food products; half of them have been candies or

chewing gums, and another fourth are other types of sweets or salty snacks. Only one fourth are more healthful items, such as baby foods, bread products, and bottled waters. Companies support sales of "kids' foods," with marketing budgets totaling an estimated \$10 billion annually.<sup>1,3</sup> Kellogg spent \$22.2 million just on media advertising to promote 139.8 million dollars' worth of Cheez-It crackers in 2004, but these figures are dwarfed by McDonald's \$528.8 million expenditure to support \$24.4 billion in sales.

Marketing to children is hardly new, but recent methods are far more intense and pervasive. Television still predominates, but the balance is shifting to product placements in toys, games, educational materials, songs, and movies; character licensing and celebrity endorsements; and less visible "stealth" campaigns involving word of mouth, cellular-telephone text messages, and the Internet. All aim to teach children to recognize brands and pester their parents to buy them. The IOM notes that by two years of age, most children can recognize products in supermarkets and ask for them by name.

But the most insidious purpose of marketing is to persuade children to eat foods made "just for them" — not what adults are eating. Some campaigns aim to convince children that they know more about what they are "supposed to" eat than their parents do. Marketers explicitly attempt to undermine family decisions about food choices by convincing children that they, not adults, should control those choices.<sup>4</sup> Indeed, children now routinely report that they, and not their parents, decide what to eat.



Percentages of U.S. Children and Teenagers Who Were Obese.

Data are from the IOM report.<sup>1</sup>

The IOM concludes that its data establish a “need and an opportunity [to] . . . turn food and beverage marketing forces toward better diets for American children and youth.” This will be no small task. Junk foods are major sources of revenue for food companies. In response to threats of lawsuits and legislation, companies are scrambling to support health and exercise programs, to announce policies renouncing advertising directed at children under certain ages, and to make their products appear more healthful. Hence: vitamin-enriched candy, whole-grain chocolate cereals, and trans fat-free salty snacks. Yet candies, soft drinks, and snack foods remain the most heavily promoted products.<sup>1</sup>

Companies, says the IOM, must do better. At the moment, their efforts — and those of government agencies — to promote more healthful foods “remain far short of their full potential.” If the industry does not change its practices voluntarily, “Congress should enact legislation mandating the shift.” Strong words, but the IOM can only advise. Others, however,

can act. In January 2006, advocacy groups announced a Massachusetts lawsuit to enjoin Kellogg and Viacom, owner of the Nickelodeon television network, from promoting junk foods to children.<sup>5</sup> Dozens of state legislatures have introduced bills to curb food marketing, and parent and advocacy groups are demanding bans on food marketing in schools.

Such efforts may push U.S. policies in the direction of those of at least 50 other countries that regulate television advertising aimed at children. Australia, for example, bans food advertisements meant for children younger than 14 years of age; the Netherlands bans advertisements for sweets to those younger than 12; and Sweden bans the use of cartoon characters to promote foods to children younger than 12. Although such actions have not eliminated childhood obesity — rates in these countries are increasing, although they remain lower than the U.S. rate — they may help to slow current trends. In contrast, U.S. regulations apply only to time: commercials may take up to 12 minutes

per hour during weekdays but “only” 10.5 minutes per hour on weekends.

The IOM report provides plenty of evidence to support additional policy actions. Worth serious consideration, I believe, are restrictions or bans on the use of cartoon characters, celebrity endorsements, health claims on food packages, stealth marketing, and marketing in schools, along with federal actions that promote media literacy, better school meals, and consumption of fruits and vegetables. Without further changes in society, such actions may not be enough to prevent childhood obesity, but they should make it much easier for parents — and health care providers — to encourage children to eat more healthfully.

An interview with Dr. Nestle can be heard at [www.nejm.org](http://www.nejm.org).

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