

# Perceptions and Knowledge of Caffeinated Energy Drinks: Results of Focus Groups With Canadian Youth

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## ABSTRACT

**Objective:** To examine use, knowledge, and perceptions of caffeinated energy drinks (CEDs) among youth.

**Design:** Qualitative research using focus group discussions (n = 4).

**Setting:** Two Canadian cities (Toronto and Montreal).

**Participants:** Youth aged 12–18 years (n = 41).

**Phenomenon of Interest:** Perceived definitions of CEDs, reasons for use, knowledge of health effects, use with alcohol, marketing perceptions, and use and understanding of cautionary statements on packaging.

**Analysis:** Data were analyzed using a modified grounded-theory approach.

**Results:** Youth identified CEDs as products that provide energy and contain caffeine and sugar. Compared with mainstream CED brands and energy shots, youth were less likely to perceive Gatorade, Coca-Cola, and a Starbucks beverage as energy drinks, despite some ambiguity. The majority of participants believed that CEDs, including mixed with alcohol, were not necessarily harmful in moderation and that marketing was targeted toward older youth and young adults. Awareness of cautionary statements on CEDs was low; cautionary statements were perceived as difficult to find and read owing to the design and small font.

**Conclusions and Implications:** Findings suggest a need to increase public education regarding the potential risks of CED consumption, including enhancements to the mandated cautionary statements, with greater attention to the impact of CED marketing on youth.

**Key Words:** energy drinks, caffeine, policy, adolescent (*J Nutr Educ Behav.* 2017;49:304-311.)

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## INTRODUCTION

Caffeinated energy drinks (CEDs) are a multibillion-dollar industry with strong growth in the North American market over the past decade.<sup>1</sup> They typically contain caffeine (ranging from 70 to 180 mg) in combination with other ingredients such as taurine, glucuronolactone, B vitamins, minerals, and herbal ingredients, and usually feature health claims about restoring energy and alert-

ness.<sup>2-5</sup> These beverages are increasingly popular, including among youth. For example, a recent study in Ontario indicated that nearly 1 in 5 grade 9–12 students consumed CEDs in a usual week,<sup>6</sup> and a US study found the greatest proportion of CED use was among youth (aged 13–17 years) and young adults (aged 18–24 years).<sup>7</sup>

There are growing concerns regarding CED consumption among youth, particularly given increased reporting

of CED-related adverse events among this age group.<sup>2,8,9</sup> Excessive caffeine consumption may cause irritability, anxiety, dizziness, dehydration, gastrointestinal problems, decreased bone mineralization, insomnia, and sleep disturbances. In more severe cases, CEDs may cause arrhythmia, tachycardia, seizures, hallucinations, and even death in rare instances.<sup>2,10-12</sup> The high sugar content of many CEDs is also a concern given the association between sugar-sweetened beverage consumption and unhealthy weight.<sup>13</sup> A recent study also found that students who reported CED consumption were significantly more likely to be at risk for hyperactivity and inattention.<sup>14</sup>

Marketing campaigns for CEDs have high levels of reach among children and youth.<sup>15</sup> A 2013 US marketing study found that CEDs made up 15% of all beverage ads viewed on television by children (aged 6–11 years) and 23%

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of those viewed by teens (aged 12–17 years); Red Bull ads were even viewed by preschoolers (aged 2–5 years).<sup>15</sup> In Canada, although the promotion of CEDs to children (aged  $\leq 12$  years) is prohibited, they may be exposed to advertising meant for general audiences.<sup>5</sup>

In 2012, Health Canada reclassified CEDs as food products rather than natural health products; as such, they are now covered under Food and Drug Regulations.<sup>5</sup> While Health Canada reviews evidence and considers further regulations, CEDs that meet current requirements may be granted temporary permission to be sold through a regulatory tool known as a Temporary Marketing Authorization.<sup>5</sup> Current packaging requirements for CEDs include standard nutrition labels, total caffeine content, and several cautionary statements: Not recommended for children, pregnant or breastfeeding women and individuals sensitive to caffeine; Do not consume more than (X) containers daily; Do not mix with alcohol; and High caffeine content.<sup>5</sup> Although these requirements apply to CEDs, energy shots remain classified as natural health products and thus are subject to Natural Health Product Regulations.<sup>5,16</sup>

Currently, little is known about perceptions of CED use and marketing among youth and the extent to which they notice, understand, and use labeling information and cautionary statements. This study sought to gain insight into behaviors and awareness regarding CEDs among Canadian youth by engaging them in discussion about their experiences with, understanding of, and perceptions of CEDs. Most information on CED use among Canadian youth has come from quantitative surveys focused on prevalence of use;<sup>6,17</sup> to the authors' knowledge, this study represents the first qualitative study to examine perceptions of energy drinks, including some regulatory (labeling) measures.

## METHODS

### Research Design and Methods

This exploratory study employed a qualitative research design that included focus group (FG) interviews to investigate the perceptions, use, and experiences of youth with CEDs. Four FGs were conducted in 2 Canadian urban centers: Toronto, Ontario; and Mon-

treau, Quebec. Two FGs were held in each city: 1 with participants aged 12–15 years, and 1 with participants aged 16–18 years. The FGs were held in 2 cities/provinces, in 2 languages, and with different age groups to obtain a diverse sample.<sup>18</sup> The FGs in Toronto were conducted in English and FGs in Montreal were conducted in French. Each FG lasted approximately 90 minutes and was digitally recorded.

The sample was recruited through Leger, a commercial market research firm with a consumer panel of Canadians. Panelists residing in the Toronto or Montreal area who reported having children aged 12–18 years were contacted by Leger via e-mail; their children were invited to participate in an FG. Of the 47 youth recruited by Leger, a total of 41 participated in the FGs (with 8–12 youth/FG). Participants were provided with \$75 in appreciation of their time.

All FGs were moderated by the same bilingual, trained researcher (CM), who had previously lived and worked in both locations. The moderator had completed ethics training and graduate-level coursework in qualitative research methods and data collection protocols, and had several years of experience conducting and coding FG research.<sup>19</sup>

Focus groups used a semistructured interview guide (see [Supplemental Material 1](#)).<sup>18,19</sup> The guide and protocol were developed in a multistage process by the research team, which included experts in qualitative research. First, the research team completed a literature review and identified previous findings on energy drinks. Next, the team met and discussed their general theoretical approach and decided upon using a modified grounded-theory approach.<sup>19</sup> The team also identified the main concepts related to CEDs to be explored through the FGs. An interview guide was drafted based on the discussion, and reviewed and finalized by the team. The guide was translated by the bilingual moderator into French.

### Study Protocol

The FGs sessions were held in downtown Toronto and Montreal on Saturday afternoons in October and November, 2014. Before each FG, written parental consent was obtained for participants aged 12–15 years in Ontario, and aged 12–17 years in Quebec, as per provincial regulations. All partici-

pants provided written informed consent; an assent version was completed by participants whose parents had already provided parental consent. Participants also completed a brief background questionnaire.

During the FG, the moderator followed the guide composed of a series of open-ended questions and encouraged youth to share and discuss the questions among themselves, prompting when necessary.<sup>20</sup> The questions assessed perceived definitions of CEDs; reasons for use; knowledge of health effects, ingredients, and caffeine levels; use of CEDs with alcohol; perceptions of CED marketing; and use and understanding of cautionary statements on packaging. At the end of each session, the moderator summarized key statements for which there seemed to be consensus within the group, and participants were given the opportunity to agree or disagree and add further comments. The Office of Research Ethics at the University of Waterloo reviewed the study and granted ethics clearance.

### Data Collection

During the FGs, youth were asked to answer questions about their perceptions of CEDs. First, participants were shown 5 beverage products (Coca-Cola, Starbucks Refresher, Gatorade Perform, AMP Energy Lemonade, and 5-Hour Energy) and asked to identify which beverages they would classify as energy drinks. AMP Energy Lemonade was the only product authorized by Health Canada as an energy drink.<sup>21</sup> Participants were then shown some examples of what is classified as a CED by Health Canada and told that these products would be the focus of the discussion. The participants were then asked to discuss if, when, and why they or their friends used CEDs. Participants were also asked about the health effects of CEDs and their ingredients, whether CEDs were safe to consume for all types of people, and a series of questions pertaining to caffeine and health. Participants aged 16–18 years were asked about the use of alcohol mixed with energy drinks (AmEDs) by people their age. To assess perceptions of marketing, participants were shown 2 English print ads featuring CEDs and asked about the message and target audience for each). Finally, to assess use and understanding of cautionary statements on

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