

months) than girls from the highest quintile (time ratio = 0.94, 95% confidence interval 0.91–0.97) adjusted for BMI%, race/ethnicity and their interaction. The meaning of SEP in this relationship bears further study, but our results suggest that early life social circumstances beyond race/ethnicity and body size may influence the timing of pubertal development.

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## **E-Cigarette Marketing Online: A Systematic Content Analysis of Manufacturers and Retailers**

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**Purpose:** To identify the current atmosphere of online sales of Electronic Nicotine Delivery Systems (ENDS) in regards to key health-related and legal claims being made and to analyze the legal framework for regulating such claims. **Methods:** In December 2014, a systematic search protocol was employed with 3 popular search engines using six terms: 1) e-cigarettes, 2) e-cigs, 3) e-juice, 4) e-liquid, 5) e-hookah, and 6) vape pen. Websites from ENDS manufacturers and retailers were eligible for inclusion, and excluded review sites, blogs, or other non-commercial sites. Three pages of content were examined for each search term.

In Phase I, included sites were independently coded for several health-related and legal themes, including: Modified or Reduced Risk, Cessation, Smoke anywhere, Health Benefits, Cleanliness, Environmentally Friendly, and Modern. In Phase II, gathered qualitative data was further coded for primary (explicit) and secondary (implicit) claims. **Results:** The final web search ( $n = 115$ ) identified eligible sites and these were divided into two categories Manufacturers ( $n = 78$ ) and Retailers ( $n = 32$ ). Between both groups, the most common claims were Modified or reduced risk claims (63.6%), Cessation claims (41.8%), and Claims regarding one's ability to get around clean indoor air laws (42.7%) for Manufacturers and Retailers, combined. Overall, Manufacturers were more likely to make any health or legal claim than Retailers. **Conclusions:** The unregulated marketing of ENDS has led to a proliferation of health-related claims. Applying a legal/regulatory perspective, this research reveals the different types of health-related claims being made by ENDS manufacturers and retailers on their websites. For claims that are misleading or deceptive, the specifics content and context of each claim may influence whether the FDA has the current regulatory authority to address it. This research demonstrates that the FDA should complete the proposed "deeming" rule and develop a comprehensive regulatory scheme to addresses health-related claims by ENDS manufacturers and retailers.

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