

**Pediatric Magnet Ingestions After Federal Rule Changes, 2009-2019****JAMA, Nov 2020; 324(20):2102-2104**

**Background and Introduction:** Magnet ingestions among children can have serious health risk including bowel obstruction, perforation, and even death when magnets attach through bowel walls. After reports of pediatric injuries and deaths related to ingested neodymium magnets, the **Consumer Product Safety Commission (CPSC) initiated campaigns and published Safety Standard for Magnet Sets rule in October 2014, prohibiting sales of these small high-powered magnet sets.** In November 2016, this rule was legally remanded by the US Court of Appeals 10th Circuit after being challenged by Zen Magnets LLC, resulting in a resurgence of these magnets on the market. This study examined trends in US emergency department (ED) visits for pediatric magnet ingestions over the period of the changes in federal regulations.

**Methods:** Data from the National Electronic Injury Surveillance System (NEISS), were obtained for January 1, 2009, through December 31, 2019 for children aged 17 years or younger with diagnosis of ingested or aspirated magnet objects. Age-specific weighted rates of ED visits for ingestions per 100 000 persons of the population was calculated using US census and NEISS data. An interrupted time-series analysis using linear regression modeling examined trends during **3 periods: (1) 2009-2012, before CPSC involvement; (2) 2013-2016, during the CPSC federal rule (including increasing CPSC regulations); and (3) 2017-2019, after the CPSC rule was vacated.** Mean ED visit rates for each period and slope changes between periods were calculated and compared.

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## Safety Standard for Magnet Sets – Revisited!!!

**Results:** Of the total 36701 ED visits for ingestion or aspirated objects, 1421 were for magnet ingestion with highest rate among those aged 5 years or younger (n=847, weighted rate, 7.0 [95% CI, 5.0-9.0] per 100 000 persons). **Following 2012 CPSC involvement, ED visit rates decreased from an aggregate mean of 3.58 (95% CI, 2.20-4.96) per 100 000 persons to 2.83 (95% CI, 1.60-4.06) per 100 000 persons in 2013-2016. From 2016 to 2019, the mean ED visit rate increased to 5.16 (95% CI, 3.22-7.11) per 100 000 persons.**

**Conclusion:** The removal of the Safety Standard for Magnet Sets rule was associated with increased ED visit rates for magnet ingestions among children aged 17 years or younger. This followed a decline in magnet ingestions between 2012 and 2016 after CPSC advocacy and the institution of this rule.

**Key-Message:** Effective prevention of magnet-related ingestions can be achieved with stringent industry regulations.

### EXPERT COMMENT

**“Magnets have increasingly become a health hazard since their introduction in toys, stress relievers and daily appliances. Their attractive shapes and colors along with small size pose a great risk of accidental ingestion especially in young children. Stringent laws and regulations regarding industrial standards and warning labels, and mass community awareness programs are required to combat this preventable cause of childhood injuries.”**

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With warm regards,

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GEN. 2021 - 22**Reference**

Flaherty MR, Buchmiller T, Vangel M, Lee LK. Pediatric Magnet Ingestions After Federal Rule Changes, 2009-2019 [published correction appears in JAMA. 2021 Jan 19;325(3):309]. *JAMA*. 2020;324(20):2102-2104.  
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