

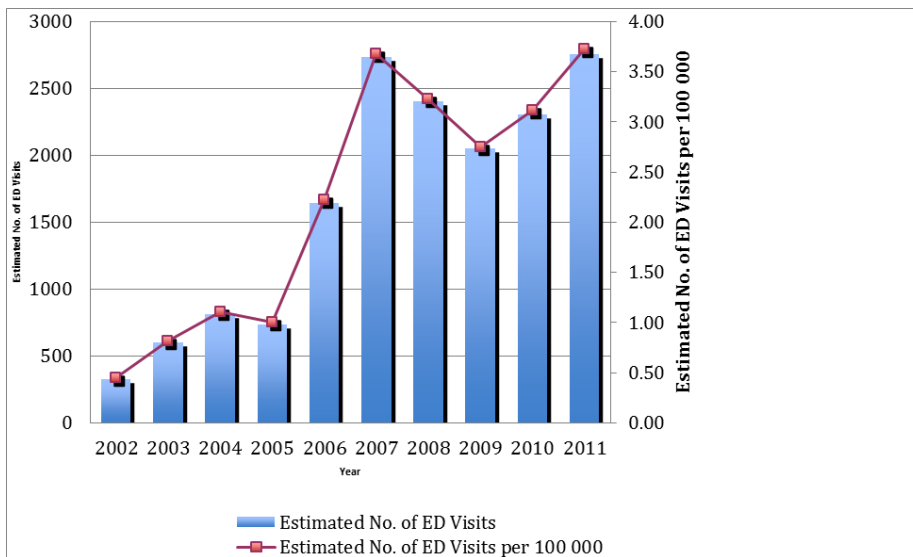
PROTECTING CHILDREN FROM MAGNET INGESTIONS

Pediatric ingestion of high-powered, rare earth magnets (or neodymium magnets) is a serious health problem. Neodymium magnets are extremely powerful magnets that can attract each other from a significant distance. The culprit of a growing trend of magnet ingestions are small high-powered 5mm magnets sold in packages of 100 or more. These magnets sets and are commonly marketed as “adult desk toys.”

The North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) has called for a ban on the sale of high-powered magnet sets because there is compelling evidence that the use of warning labels in their marketing and packaging have not been effective in preventing the ingestion of these magnets by infants, children and teenagers.

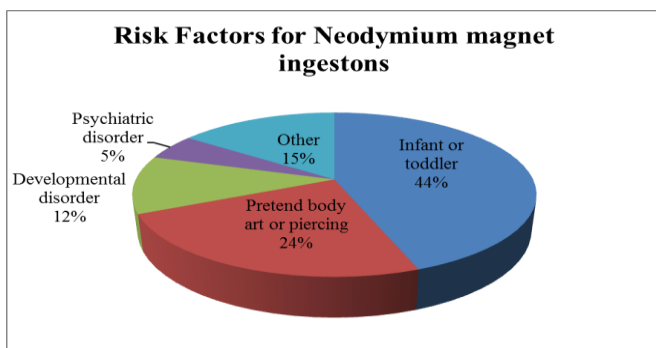
A GROWING TREND OF MAGNET INGESTIONS

A 2012 survey of NASPGHAN members found 481 cases of magnet ingestion over 10 years, with 320 occurring over the most recent three-year period. Respondents included 201 pediatric gastroenterologists from across the country, who submitted detailed clinical data on 123 cases.ⁱ The NASPGHAN survey likely underestimates the trends in ingestions because other physicians who may encounter or treat magnet ingestions, such as pediatric surgeons and emergency department physicians, were not included in the survey. A study recently published in the *Journal of Pediatric Gastroenterology and Nutrition*, which examined data collected by the National Electronic Surveillance System, found a similar trend in magnet ingestions.ⁱⁱ



Beginning in 2009, magnet ingestions began to increase following a drop in cases from 2007-2009. The study authors speculate the drop during that two-year period is attributed to the CPSC recalls of numerous toy products that contained high-powered magnets, as well as better manufacturer adherence to toy safety standards. The increase in magnet ingestions correlates with 2009 being the first year of significant sales of magnet sets with more than 1.5 million units of Buckyballs sold from 2009-2011.

According to the NASPGHAN survey, children between the ages of 13 months and six years are at highest risk of ingestion, accounting for just more than 50 percent of ingestions. However, there is a significant population of older children and adolescents that ingest the magnet balls.

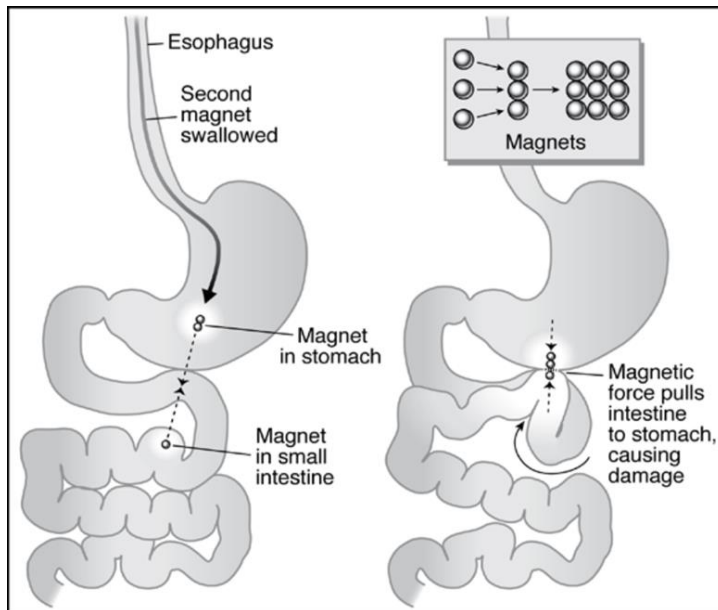


Toddlers swallow these magnet balls because they are small, shiny, and sometimes brightly colored. Older children use the magnets to mimic jewelry piercings in their mouth and nose causing accidental ingestions.

Overall, the data shows that the rate of magnet ball ingestions and associated medical interventions in children has significantly increased despite the use of warning labels on high-powered magnet sets.

MAGNET INGESTIONS ARE SERIOUS AND LIFE THREATENING

If more than two of these high-powered magnets are swallowed, their attractive force allows the magnets to “find” each other, sometimes across loops of bowel. Although the tissue of the intestinal tract is tough, it’s no match for these magnets. Once magnetically attached across the bowel wall, they do not break apart causing bowel ulceration, perforations in the intestine, and severe injury.



High-powered magnet ingestions are different than other ingested foreign bodies. Because ingestion of magnets causes no immediate symptoms, there can be marked delay in diagnosis and treatment. Delay in diagnosis also occurs because symptoms are non-specific and resemble other common ailments. Also complicating early diagnosis is the often inability of a child to verbalize that an ingestion has occurred. Initial symptoms, such as abdominal pain, may take 8-24 hours to occur. Deep pressure ulceration can occur within eight hours of ingestion. If undetected, bowel perforation can occur, which can lead to life-threatening infection. If the magnets cause obstruction of the bowel, necrosis can occur and segments of the bowel may have to be surgically removed.

ACTION NEEDED TO BAN THE SALE OF HIGH-POWERED MAGNET SETS

In September 2012, the CPSC issued a proposed safety standard for magnet sets, which, if finalized, would prohibit the sale of magnet sets (as defined as any aggregation of separable, permanent magnetic objects that are intended and marketed primarily as a manipulative or construction desk toy) if the magnet set contains a magnet that fits within the CPSC’s small parts cylinder and has a flux index greater than 50. Other actions taken by the CPSC to prevent magnet ingestions have included the filing of administrative complaints against three manufacturers of high-powered magnets sets: Maxfield & Oberton, Zen Magnets, and Star Networks, USA. In December 2012, Maxfield & Oberton, the manufacturer of Buckyballs, stopped doing business. In April 2013, the CPSC announced that six major retailers will participate in a recall of Buckyballs and Buckycubes. Despite these actions, federal regulations establishing safety standards for high-powered magnet sets are still needed to force remaining products off the market and to prevent new products from entering the market in the future.

Visit www.naspgan.org for more information.

ⁱ Noel RA, Bousvaros A, Gilger, MA. Neodymium Magnet Adult Desk Toys Are Associated With Increased Medical and Surgical Intervention in Children. Presented at Digestive Disease Week® 2013. Accessed online at <http://www.ddw.org/news/articles/2013/05/18/new-research-identifies-risks-interventions-for-children-s-gi-health> on 6/11/13.

ⁱⁱ Abbas, Mazen I.; Oliva-Hemker, Maria; Choi, Joon; Lustik, Michael; Gilger, Mark A.; Noel, R. Adam; Schwarz, Kathleen; Nylund, Cade M. Magnet Ingestions in Children Presenting to United States Emergency Departments from 2002 to 2011. *Journal of Pediatric Gastroenterology & Nutrition.*, POST ACCEPTANCE, 10 April 2013.