



To: ALL HEALTH CARE PROVIDERS including Emergency Physicians, PA/NPs, Nurses,  
Intensivists, Hospitalists  
From: Ron Kirschner, MD  
Medical Director, Nebraska Regional Poison Center  
Subject: Unintentional Buprenorphine ingestions  
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- Buprenorphine is a long acting opioid agonist-antagonist (half-life ~36 h).
  - In combination with naloxone (Suboxone®) it's used to treat opioid addiction and administered sublingually (naloxone is added to discourage illicit IV use).
  - Buprenorphine is also used as an analgesic (Subutex®, Butrans®).
  - Compared with methadone, buprenorphine is less likely to cause respiratory depression in adults.
  - Life threatening respiratory depression is more common in children.
- In 2010 and 2011, nearly 1,500 children age < 6 were seen annually in US EDs for buprenorphine ingestion (compared with zero in 2004).
- Buprenorphine is absorbed through the buccal mucosa, and there is a risk of significant toxicity even if pills are removed from the child's mouth.
- Management of unintentional pediatric buprenorphine ingestions:
  - Admit all asymptomatic children for a minimum of 12 h with close monitoring of respiratory status and pulse oximetry.
  - If there is respiratory depression, give naloxone 0.1 mg/kg IV and admit the child to a monitored unit for at least 24 h.
  - Naloxone has a short duration of action and repeat boluses may be needed.
  - An infusion can be started at 0.067 mg/kg/h and titrated to effect.
  - Intubation and mechanical ventilation may be necessary.
- Buprenorphine is not detected by standard drug of abuse screens.

#### References:

1. CDC, ED visits and hospitalizations for buprenorphine ingestion by children – United States, 2010-2011. *MMWR Morb Mortal Wkly Rep.* 2013 Jan 25;62:56
2. Geib AJ *et al.* Adverse effects in children after unintentional buprenorphine exposure. *Pediatrics* 2006; 118: 1746.
3. Kim HK *et al.* Buprenorphine may not be as safe as you think: a pediatric fatality from unintentional exposure. *Pediatrics* 2012; 130: e1700.

**Our trained staff of nurse/PA specialists in poison information and physician toxicologists is available 24 hours a day to answer your questions.**