



Rumination Disorder

What Every Parent Needs to Know

D i a n a P i e t e r s o n

A l i n a A l v a r e z

R u f i n a E w a n e

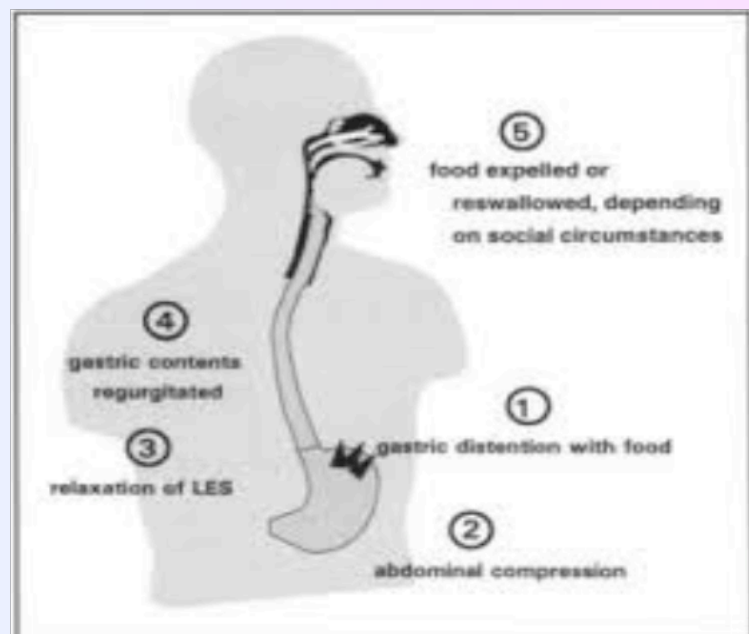
C h i n y e r e N z e k e w

R u b y O d a m t t e n

What is Rumination Disorder (RD):



Rumination syndrome is one of the less commonly recognized functional gastrointestinal disorders in the pediatric age group (Rajindrajith, 2012).



Rumination syndrome is characterized by effortless, repetitive and painless regurgitation of partially digested food into the mouth soon after a meal, which is subsequently re-chewed and re-swallowed, or else spat out (Rajindrajith, 2012).

Is RD an eating disorder

- Rumination disorder was recently reclassified as “Feeding and Eating Disorders” in the DSM-5, because it can occur across the age-span (Murray, 2013)

Pathophysiology:

- The pathophysiology is somewhat understood.
 - It involves the rise in intra-gastric pressure generated by a voluntary, but often not intentional, contraction of the abdominal wall musculature at a time of low pressure in the lower esophageal sphincter (Tack, 2011)
- This causes a retrograde movement of gastric contents into the esophagus (Tack, 2011)

Prevalence:

- Rumination was believed to be common among children and adolescents with developmental abnormalities and learning difficulties (Rajindrajith, 2012).
- However, it is now increasingly recognized in individuals of all ages with normal cognitive abilities (Rajindrajith, 2012).

- Prevalence is 5.1% (n = 61) in males and 5.0% (n = 49) in females and occurs in 4% of school aged children (Rajindrajith, 2012).
- Typical age of onset for infants is between 3 and 6 months.(Tack, 2011)

Risk factors

- RD is more common among children exposed to stressful life events (Rajindrajith, 2012).
 - Acute illness or major surgery
 - Having mental illness

Causes of RD:

- The causes and onset of rumination syndrome remain unclear (Tack, 2011)



Parents should be wary of children who insert their fingers in the mouth, rhythmically suck their tongue, or arch their backs to initiate the process of regurgitation (Sadock, 2014)

Symptoms :



Rumination syndrome in infants Must include all of the following for at least 3 months:

- Repetitive contractions of the abdominal muscles, diaphragm and tongue
- Regurgitation of gastric content into the mouth, which is either expectorated or re-chewed and re-swallowed
- Three or more of the following: a. Onset between 3 and 8 months
- Does not respond to management for gastro-esophageal reflux disease or to anticholinergic drugs, hand restraints, formula changes and gavage or gastrostomy feedings
- Unaccompanied by signs of nausea or distress
- Does not occur during sleep and when the infant is interacting with individuals in the environment

Rumination syndrome in adolescents (Tack, 2011)

- Must include all of the following:
- Repeated painless regurgitation and re-chewing or expulsion of food that begin soon after ingestion of a meal; do not occur during sleep; do not respond to standard treatment for gastroesophageal reflux
- Regurgitation in rumination is not preceded by nausea or retching
- No evidence of an inflammatory, anatomic, metabolic, or neoplastic process that explains the subject's symptoms
- Symptoms do not respond to anti reflux therapy (Tack 2011)

Additional Symptoms:

- Regurgitation can occur daily to several times a week
- Weight loss
- Loss of appetite
- Pallor
- Abdominal pain and bloating
- Headache
- Limb pain
- Light headedness
- Photophobia (Rajindrajith, 2012).
- In typical cases, repetitive regurgitation of gastric contents starts within minutes, often already during the meal, and usually persists for 1 up to 2 h (Tack, 2011)
- May be preceded by an immediately preceding sensation of belching (Tach, 2011)

How is RD diagnosed



- RD is under diagnosed due to insufficient awareness among clinicians. (Rajindrajith, 2012).
- It is also frequently misdiagnosed as gastro-esophageal reflux disease, recurrent vomiting and upper gastrointestinal motility disorders such as gastroparesis (Rajindrajith, 2012)..
- RD can easily be diagnosed by history alone.(Tack, 2011)
- In case of a sufficiently convincing history, a firm diagnosis of rumination can be made (Tack, 2011)
- Typical elements are the start of regurgitation during or immediately after the meal, the effortless nature, the absence of prodromal nausea and especially the ability to swallow the regurgitated material (Tack, 2011)
- The most common test included esophagogastroduodenoscopy, gastric emptying, intraduodenal manometry, upper gastrointestinal series, and abdominal ultrasound scan (Alioto, 2017).

- In the majority of patients, additional symptoms such as nausea, heartburn, abdominal discomfort, diarrhea and/or constipation are also present (Tack, 2011)
- Weight loss can also be a prominent feature of rumination syndrome, particularly in the adolescent population.(Tack, 2011)
- Manometric evaluation may confirm the diagnosis: Performing stationary esophageal manometry and impedance with administration of a meal and monitoring of postprandial regurgitation events refined the diagnosis and was able to more accurately distinguish between rumination, regurgitation and belching. In the rumination events, a rise in intra-gastric pressure as assessed by manometry preceded or occurred simultaneously with retrograde intra-esophageal flow as detected by impedance (Tack, 2011).

Impact on quality of life:

- Without treatment, significant health and psychosocial consequences can ensue, such as
 - dental enamel erosion
 - avoidance of social eating from rumination (Murray, 2018)
 - Missed school days
 - Difficulty sleeping (Rajindrajith, 2012)



Treatment



- The mainstay of treatment for rumination syndrome is explanation of the condition, the mechanism underlying the rumination events, and behavioral modification.(Tack, 2011)
- Chewing gum, prokinetics, baclofen and even anti reflux surgery have been proposed as adjunctive therapies to significantly enhance postprandial LOS pressure and to suppress TLOSRS (Tack, 2011)
- PPIs may provide some benefit by suppressing the symptom of heartburn and by better protect the esophageal mucosa.(Thomas, 2016)
- Behavioral treatment consists of learning and using habit reversal techniques, usually diaphragmatic breathing, which compete with the urge to regurgitate (Tack, 2011)
- Applying diaphragmatic breathing during the postprandial period effectively eliminates rumination activity.
- Diaphragmatic breathing can easily be learned by putting a hand on the chest and on the abdomen during respiration, and instructing that only the hand on the abdomen may move with breathing.(Tack, 2011)

Prevention

- There is no way to prevent the disorder
- Close attention should be paid to a child's eating pattern to catch the disorder early

Co-morbidities/ possible complications:

- Emotional stress, anxiety, depression (Rajindraji, 2012).

Follow up care

- Continuous use of diaphragmatic breathing when symptoms occur
- Follow up with primary care as needed
- Psychotherapy for especially CBT and ERP



References

- Alioto, A., Di Lorenzo, C., Montgomery, M. L., & Yacob, D. (2017). High Cost and Low Yield: The Diagnostic Evaluation of Rumination Syndrome in Pediatrics. *Journal of Pediatrics*, 185, 155-159. <https://doi-org.ezp.waldenulibrary.org/10.1016/j.jpeds.2017.02.009>
- Franco, K., & Campbell, N. (1993). Rumination: The eating disorder of infancy. *Child Psychiatry & Human Development*, 24(2), 91-97. <https://doi-org.ezp.waldenulibrary.org/10.1007/BF02367262>
- Khan, S., Hyman, P. E., Cocjin, J., & Di Lorenzo, C. (2000). Rumination syndrome in adolescents. *The Journal of Pediatrics*, 136(4), 528-531. [https://doi-org.ezp.waldenulibrary.org/10.1016/S0022-3476\(00\)90018-0](https://doi-org.ezp.waldenulibrary.org/10.1016/S0022-3476(00)90018-0)
- Lock, J., & La Via, M. C. (2015). Practice parameter for the assessment and treatment of children and adolescents with eating disorders. *Journal of the American Academy of Child & adolescent psychiatry*, 54(5), 412-425. Retrieved from [http://www.jaacap.com/article/S0890-8567\(15\)00070-2/pdf](http://www.jaacap.com/article/S0890-8567(15)00070-2/pdf)
- Mairs, R., & Nicholls, D. (2016). Assessment and treatment of eating disorders in children and adolescents. *Archives of Disease in Childhood*, 101(12), 1168-1175.
- Murray, H. B., Thomas, J. J., Hinz, A., Munsch, S., & Hilbert, A. (2018). Prevalence in primary school youth of pica and rumination behavior: The understudied feeding disorders. *International Journal of Eating Disorders*, 51(8), 994.
- Rajindrajith, S., Devanarayana, N. M., & Perera, B. J. C. (2012). Rumination syndrome in children and adolescents: a school survey assessing prevalence and symptomatology. *BMC Gastroenterology*, 12(1), 163-168. <https://doi-org.ezp.waldenulibrary.org/10.1186/1471-230X-12-163>
- Sadock, B. J., Sadock, V. A., & Ruiz, P. (2014). *Kaplan & Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry* (11th ed.). Wolters Kluwer
- Tack, J., Blondeau, K., Boecxstaens, V., Rommel, N. (2011). Review article: the pathophysiology, differential diagnosis and management of rumination syndrome. *Alimentary Pharmacology & Therapeutics*, 33(7), 782-788. <https://doi-org.ezp.waldenulibrary.org/10.1111/j.1365-2036.2011.04584.x>
- Thomas, J. J., & Murray, H. B. (2016). Cognitive-behavioral treatment of adult rumination behavior in the setting of disordered eating: A single case experimental design. *International Journal of Eating Disorders*, 49(10), 967-972.