COMMONWEALTH of VIRGINIA

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Office of Integrated Health
Health & Safety Alert/Information

Nut Butters and Choking Health & Safety Alert

Introduction

Nut butters are high in protein and a good source of nutrients. Nut butters are thick, pasty and difficult to remove from the oral cavity. Combined with other foods such as, bread or crackers, nut butters can easily cause the airway to become obstructed.

The American Speech Language Hearing Association (ASHA) recently announced they will be using the International Dysphagia Diet Standardization (IDDSI) as the gold standard for texture modified diets (ASHA, n.d.). IDDSI has listed *nut butters, along with other sticky, textured foods, as foods to avoid on their "Pureed", "Minced & Moist", and "Soft & Bite-Sized" Texture Modified Guidelines (see pages 5, 6 & 7 of this Alert).*

Nut butters present a significant risk of choking, especially for individuals with intellectual and developmental disabilities (IDD) and/or those with dysphagia. Congenital syndromes associated with IDD can result in both anatomical and neurological precursors for dysphagia, including Down syndrome, Rubinstein-Taybi syndrome and Rett syndrome (Robertson et al., 2017).

In addition, in studies of people with profound ID and multiple disabilities, swallowing difficulties have been reported in nearly half of the participants (49%) (Petry, Maes, & Vlaskamp, 2009). Other researchers found similar rates, 69.7% among adults with I/DD (Sheppard et al., 2014); and 52.1% among adults aged 50 and up (Herman & Evenhuis, 2014).

Similar research, focused solely on children, has revealed as many as 99% of children with severe generalized cerebral palsy and I/DD have dysphagia (Calis et al., 2008). Since dysphagia, difficulty swallowing, is so common among individuals with I/DD, and often goes unrecognized *nut butters should be discouraged whenever possible to reduce the risk of a fatal choking events* (Robertson et al., 2017).

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Chronic Health Conditions Increase Nut Butter Choking Risk

Individuals with intellectual and developmental disabilities have a higher prevalence of other chronic health conditions, which also affect their ability to chew and swallow safely, when compared to peers in the general population. All these issues can greatly increase their risk of a choking episode when eating a high-risk food (Steele et al., 2015).

- Structural abnormalities.
  - A high, arched palate.
  - Cleft palate.
  - An under-developed jaw (A symptom of several genetic syndromes, such as Prader Willi, Down syndrome, Phelan McDermid syndrome, and many others).
- Poor oral health (poor compliance with tooth brushing, poor grasp, fine and gross motor deficits, dependency on caregivers, etc.).
- Neurological/neuromuscular dysfunction. (A symptom of several genetic syndromes, such as Prader Willi, Down syndrome, Phelan McDermid syndrome, and many others).
  - Weak tongue propulsion strength.
  - Tongue dysfunction (general).
  - Poor oral motor control.
  - Poor gag reflex.
  - Poor positioning due to lumbar/thoracic (the trunk of the body) muscular weakness.
  - Poor coordination of breathing and swallowing.
- Behavioral issues.
  - Excessive movement while eating.
  - Food stuffing.
  - Eating too quickly.
  - Not chewing properly.
  - PICA (eating non-food items).
  - Eating another individual's food.
- GERD (Gastroesophageal Reflux Disease).
- Seizure Disorders.
- Psychotropic medications and/or polypharmacy.
  - Xerostomia (dry mouth) (Causes difficulty to propel food to esophagus).
  - Tardive dyskinesia (involuntary movements, such as grimacing, eye blinking, trembling from antipsychotic medications).
  - Sedation (sleepiness).

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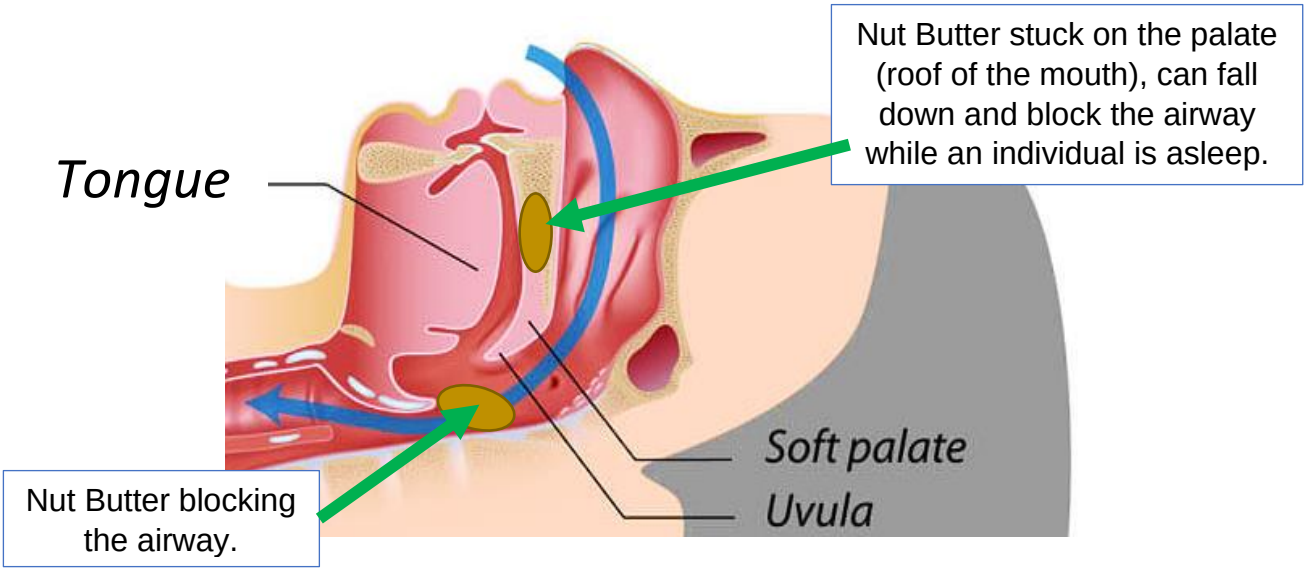
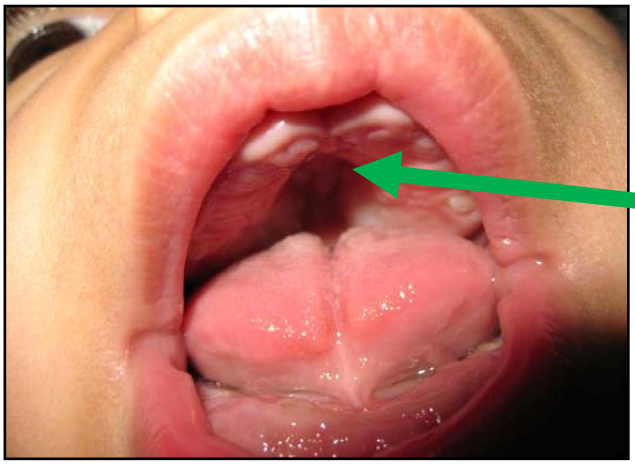
In addition, many individuals with IDD may have reduced sensations in their laryngopharyngeal area, so they may not realize food residue is in their mouth (Cichero, 2016). Their lack of laryngopharyngeal sensation, coupled with their poor tongue control, results in their inability to clear food out of their mouth properly.

Over the course of a day, foods will accumulate in the palate and cheek pockets and may go unnoticed by caregivers. When the individual lies down for the evening or takes a nap, the food may fall from their high arched palate and become lodged in their trachea (wind pipe), which obstructs their ability to breath, and leads to a choking event or death (Cichero, 2016).

Eating foods, which have a sticky texture, such as nut butters, further multiplies the individual's risk for a choking event, because sticky foods are more likely to become lodged, or stuck in the individual's mouth.





High-arched palates may contribute to an increased risk of choking because food becomes lodged while eating, and becomes dislodged when the individual is in a reclining position, resulting in a choking event.

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Many accidental deaths (choking falls, etc.) of individuals with IDD are potentially preventable (Smith et al., 2020).

The texture and adhesiveness of nut butters make consumption dangerous for individuals with risk factors previously discussed (Parks, Lee, Yoo, & Nam, 2020).

In a study of nine semi-solid food textures, peanut butter was the most difficult food to swallow requiring more muscle strength and tongue coordination. Participants reported remnants of food within the oral cavity and a sense of residue coating the oral cavity (Parks, Lee, Yoo, & Nam, 2020). Individuals with physician ordered Pureed, Minced & Moist, and Soft & Bite Size diet modifications should avoid eating nut butters, as well as other foods seen on the avoid lists.

To review the IDDSI framework, visit IDDSI patient handouts. Do not start an individual on a modified diet or implement diet restrictions without a consultation with a Speech and Language Pathologist and written orders from a physician. The pureed (Level 4) foods to avoid are examples of food textures, which increase choking risks.

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For safety, AVOID these food textures that pose a choking risk for adults who need Level 4 Pureed food

Food characteristic to AVOID	Examples of foods to AVOID
Mixed thin + thick textures	Soup with pieces of food, cereal with milk
Hard or dry food	Nuts, raw vegetables (e.g. carrot, cauliflower, broccoli), dry cakes, bread, dry cereal
Tough or fibrous foods	Steak, pineapple
Chewy	Lollies/candies/sweets, cheese chunks, marshmallows, chewing gum, sticky mashed potato, dried fruits, sticky foods
Crispy	Crackling, crisp bacon, cornflakes
Crunchy food	Raw carrot, raw apple, popcorn
Sharp or spiky	Corn chips and crisps
Crumbly bits	Dry cake crumble, dry biscuits
Pips, seeds	Apple seeds, pumpkin seeds, white of an orange
Food with skins or outer shell	Peas, grapes, chicken skin, salmon skin, sausage skin
Foods with husks	Corn, shredded wheat, bran
Bone or gristle	Chicken bones, fish bones, other bones, meat with gristle
Round, long shaped food	Sausage, grape
Sticky or gummy food	Nut butter; overcooked oatmeal/porridge, edible gelatin, konjac containing jelly, sticky rice cakes
Stringy food	Beans, rhubarb
Floppy foods	Lettuce, cucumber, uncooked baby spinach leaves
Crust formed during cooking or heating	Crust or skin that forms on food during cooking or after heating, for example, cheese topping, mashed potato
'Floppy' food	Lettuce, cucumber, baby spinach leaves
'Juicy' food	Where juice separates from the food piece in the mouth, for example watermelon
Visible lumps	Lumps in pureed food or yoghurt
Extra Clinician notes	

Intended for general information only. Please consult with your health care professional for specific advice for your nee

(IDDSI, 2019).

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5 MINCED & MOIST

IDDSI

For safety, AVOID these food textures that pose a choking risk for adults who need Level 5 Minced & Moist Food

Food characteristic to AVOID	Examples of foods to AVOID
Mixed thin + thick textures	Soup with pieces of food, cereal with milk
Hard or dry food	Nuts, raw vegetables (e.g. carrot, cauliflower, broccoli), dry cakes, bread, dry cereal
Tough or fibrous foods	Steak, pineapple
Chewy	Lollies/candies/sweets, cheese chunks, marshmallows, chewing gum, sticky mashed potato, dried fruits, sticky foods
Crispy	Crackling; crisp bacon, cornflakes
Crunchy food	Raw carrot, raw apple, popcorn
Sharp or spiky	Corn chips and crisps
Crumbly bits	Dry cake crumble, dry biscuits
Pips, seeds	Apple seeds, pumpkin seeds, white of orange
Food with skins or outer shell	Peas, grapes, chicken skin, salmon skin, sausage skin
Foods with husks	Corn, shredded wheat, bran
Bone or gristle	Chicken bones, fish bones, other bones, meat with gristle
Round, long shaped food	Sausage, grape
Sticky or gummy food	Nut butter, overcooked oatmeal/porridge, edible gelatin, konjac containing jelly, sticky rice cakes
Stringy food	Beans, rhubarb
Floppy foods	Lettuce, cucumber, uncooked baby spinach leaves
Crust formed during cooking or heating	Crust or skin that forms on food during cooking or after heating, for example cheese topping, mashed potato
'Floppy' food	Lettuce, cucumber, baby spinach leaves
'Juicy' food	Where juice separates from the food piece in the mouth, for example watermelon
Large or hard lumps of food	Casserole pieces larger than 4mmx4mmx15mm; fruit, vegetable, meat or other food pieces larger than 4mmx4mmx15mm
Extra Clinician notes	

Intended for general information only. Please consult with your health care professional for specific advice for your need

(IDDSI, 2019).

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6 SOFT & BITE-SIZED

IDDSI

For safety, AVOID these food textures that pose a choking risk for adults who need Level 6 Soft & Bite-Sized Food

Food characteristic to AVOID	Examples of foods to AVOID
Mixed thin + thick textures	Soup with pieces of food, cereal with milk
Hard or dry food	Nuts, raw vegetables (e.g. carrot, cauliflower, broccoli); dry cakes, bread, dry cereal
Tough or fibrous foods	Steak; pineapple
Chewy	Lollies/candies/sweets, cheese chunks, marshmallows, chewing gum, sticky mashed potato, dried fruits, sticky foods
Crispy	Crackling, crisp bacon, cornflakes
Crunchy food	Raw carrot, raw apple, popcorn
Sharp or spiky	Corn chips and crisps
Crumbly bits	Dry cake crumble, dry biscuits (add sauce to make these suitable)
Pips, seeds	Apple seeds, pumpkin seeds, white of orange
Food with skins or outer shell	Peas, grapes, chicken skin, salmon skin, sausage skin
Foods with husks	Corn, shredded wheat, bran
Bone or gristle	Chicken bones, fish bones, other bones, meat with gristle
Round, long shaped food	Sausage, grape
Sticky or gummy food	Nut butter, overcooked oatmeal/porridge, edible gelatin, konjac containing jelly, sticky rice cakes
Stringy food	Beans, rhubarb
Floppy foods	Lettuce, cucumber, uncooked baby spinach leaves
Crust formed during cooking or heating	Crust or skin that forms on food during cooking or after heating, for example, cheese topping; mashed potato
'Floppy' food	Lettuce, cucumber, baby spinach leaves
'Juicy' food	Where juice separates from the food piece in the mouth, for example watermelon
Large or hard lumps of food	Casserole pieces larger than 1.5cmx1.5cm, fruit, vegetable, meat, pasta or other food pieces larger than 1.5cmx1.5cm
Extra Clinician notes	

Intended for general information only. Please consult with your health care professional for specific advice for your need

(IDDSI, 2019).

Resources

OIH Health and Safety Alert on Choking -
https://dbhds.virginia.gov/assets/doc/OIH/choking-health-safety-alert.pdf

OIH Health and Safety Alert on Dysphagia -
https://dbhds.virginia.gov/assets/doc/OIH/dysphagia-h-s-alert.pdf

Herrick, J. (2020). Dysphagia, aspiration and choking -
https://shriver.umassmed.edu/wp-content/uploads/2020/07/Aspiration-Webinar_full-page-slides2.pdf

Mayo Clinic (2021). Choking: First Aid
https://www.mayoclinic.org/first-aid/first-aid-choking/basics/ART-20056637?p=1

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