

# NUTRITIONAL NEEDS

of children with special needs.



# TABLE OF CONTENTS

PAGE  
1

## DISABILITY BARRIERS THAT LEAD TO NUTRITIONAL CHALLENGES

- Structural problems within their digestive system
- Recurrent infections

PAGE  
4

## CONSTIPATION IN CHILDREN WITH SPECIAL NEEDS

- Definition for Constipation
- Effects of Chronic Constipation
- What NOT to eat and why?
- Reasons for Constipation
- What to eat and why?
- Dietary solution for improvement

PAGE  
10

## DIARRHOEA IN CHILDREN WITH SPECIAL NEEDS

- Definition for Diarrhoea
- Effects of Diarrhoea
- What NOT to eat and why?
- Reasons for Diarrhoea
- What to eat and why?

PAGE  
13

## YEAST INFECTIONS IN CHILDREN WITH SPECIAL NEEDS

- Definition for Yeast Infections
- Effects of Yeast Infections
- What to eat and why?
- Reasons for Yeast Infections
- Tests to detect Yeast Infections
- What NOT to eat and why?

PAGE  
19

## OXALATE INTOLERANCE IN CHILDREN WITH SPECIAL NEEDS

- Definition for Oxalate Intolerance
- What to eat and why?
- Reasons and Effects for Oxalate Intolerance
- What NOT to eat and why?

PAGE  
24

## URINARY TRACT INFECTIONS (UTI) IN CHILDREN WITH SPECIAL NEEDS

- Definition for UTI
- What NOT to eat and why?
- Reasons & Effects of UTI
- What to eat and why?

PAGE  
29

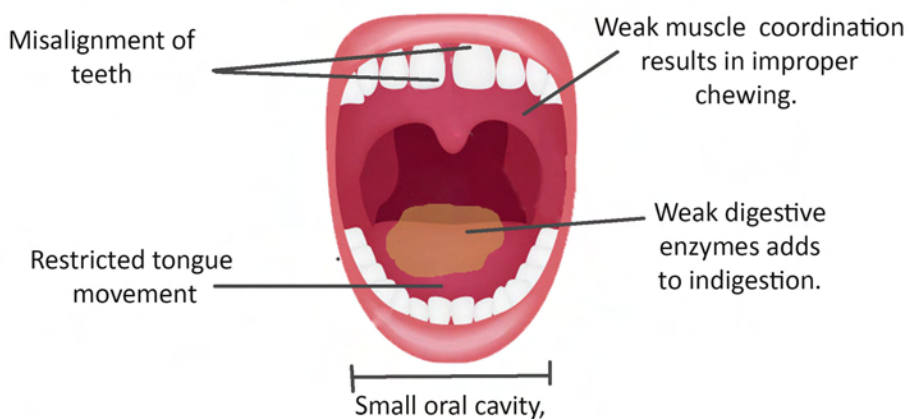
## CREDITS AND DISCLAIMER

# DISABILITY BARRIERS THAT LEAD TO NUTRITIONAL CHALLENGES

## IN CHILDREN WITH DEVELOPMENTAL DISABILITIES (DD)

### 1. STRUCTURAL PROBLEMS WITHIN THEIR DIGESTIVE SYSTEM

Some of them include -



### SOLUTION

**Tummy time** will help the child cope with digestive problems.

- Tummy time helps expel gas & stimulate bowel movement in the baby
- Massaging the belly is more effective during hot water bath
- Calm the baby after the tummy time



A baby can be put on tummy for 20 minutes.



Massage the baby's belly clockwise

## 2.RECURRENT INFECTIONS

Children with special needs often have low immunity, and suffer from frequent coughs and colds.

### SOLUTION

Consume foods that serve as *immunity boosters*  
A good immune system is the first defender against microbes that may infect a body

Some of the foods that serve as immune boosters can be effective means to increase your child's immunity.

#### Consume immune-boosters



**Honey** – Has anti-microbial activity and helps soothe symptoms of cough or cold.



**Whole grains.** Especially oats and barley in particular – Beta-glucans in oats have been shown to help the body ward-off infections



**Almonds/nuts** – a lot of nuts are packed with Vitamin E which can be beneficial to protect the body against respiratory infections



Fruits rich in **vitamin C** such as lemon, mangoes, guava, oranges, pomegranates, amla are also good immune-defenders



Vegetables such as sprouts, green-leafy vegetables, cabbage, cauliflower, sweet potato and capsicum are power packed with immune fighting capabilities.



## Cook with immune-boosters



**Garlic** – the common flavor component of cooked food, it is packed with immune boosters that can protect the body against microbial attack



**Ghee** – A super food that has healthy vitamins and also strengthens bones and immunity



**Ginger** – An effective remedy to help the body combat frequent colds and coughs



**Spices** such as turmeric, cumin, black pepper and cinnamon are packed with anti-inflammatory & antioxidant properties

# CONSTIPATION

## IN CHILDREN WITH SPECIAL NEEDS

### DEFINITION OF CONSTIPATION

A condition in which the child has

- Difficulty emptying his/her bowels for 2 or more days
- Stools appear **hard** and **lumpy**
- Child has high levels of pressure while passing stools



*Normal*



*Constipation*

### REASONS FOR CONSTIPATION

The main reason is an inherent problem associated with a pre-existing condition, such as low muscle tone seen in children with Down's syndrome.

In addition to the pre-existing condition, the following also further worsen constipation.



Low fluid intake



Lack of fiber in the diet

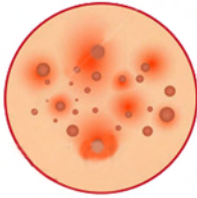


Existing yeast infection  
in the gut



Intake of too much  
processed food

## EFFECTS OF CHRONIC CONSTIPATION



Yeast infection



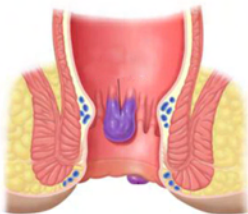
Stomach ache due to bloating and flatulence



Mood changes – irritability, hyperactivity



Sleep disturbances



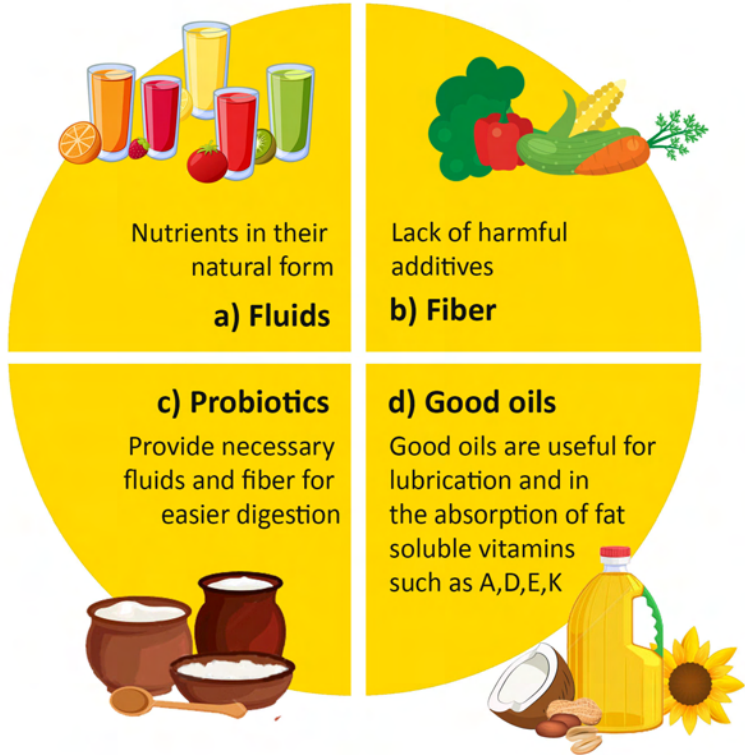
Piles



Build-up of toxins in the blood

# DIETARY SOLUTIONS FOR IMPROVING CONSTIPATION

## What to eat.... ....and, why?



## What NOT to eat.... ....and, why NOT?



### Processed food

- No fibre
- High in sugar
- High in unhealthy fats
- High in additives



# DIETARY SOLUTIONS FOR IMPROVING CONSTIPATION

## What to eat?

### ● More fluid intake

#### Water

If the consumption of water in sufficient amounts is a challenge, fluids can be consumed in varied forms



**Fruit/vegetable juice**  
Without sugar



**Buttermilk**



**Coconut water**



**Vegetable or chicken soup**



**Daal water**  
Such as *Masoor*, *Tuar* or *Moong*

# DIETARY SOLUTIONS FOR IMPROVING CONSTIPATION

## What to eat?

### ● More fiber intake

#### Soluble



Vegetables such as onions, beets, garlic



Flax seeds



Oats



Sprouts  
Like *Moong* and *Matki*



bananas, oranges,  
apples ,guavas and prunes

#### Insoluble



Green leafy vegetables



Root vegetables



Nuts



Whole grains

## DIETARY SOLUTIONS FOR IMPROVING CONSTIPATION

### What to eat?

#### ● Consumption of good cold-pressed oils

- Coconut oil
- Mustard oil
- Sesame oil



#### ● Consumption of probiotics

- Fermented foods such as konji, and pickled vegetables
- Fermented foods like Dosa ,Idli etc.
- Dahi or Yoghurt
- Supplements



# DIARRHOEA

## IN CHILDREN WITH SPECIAL NEEDS

### DEFINITION OF DIARRHOEA

A condition in which the

- child has frequent bowel movements
- stools appear watery
- child lacks control over bowel movements

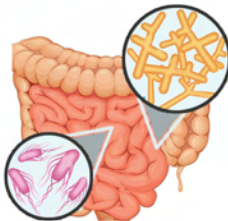


*Normal*



*Diarrhoea*

### REASONS FOR DIARRHOEA



Lack of good gut bacteria



Food intolerance and allergies



Poor digestion

- One more reason for frequently diarrhea in special need children is mouthing the inedible things.

### EFFECTS OF DIARRHOEA

- Severe dehydration, causing a loss of fluid balance in the body





# DIETARY SOLUTIONS FOR IMPROVING DIARRHOEA

## What to eat.... .....and, why?



### Probiotics

Good bacteria increase nutrient absorption  
Soft foods aid in digestion and absorption  
Soft foods replenish energy



### Soft foods

Replenish good gut bacteria

## What NOT to eat.... .....and, why NOT?



### Processed food

- High in sugar
- High in unhealthy fats
- High in additives
- Low in nutrients

### Complex carbohydrates

- Low nutrient value
- Complex carbohydrates are difficult to digest during prolonged diarrhoea



### Fiber-rich foods

## What to eat?

### Probiotics

- Fermented foods such as konji, and pickled vegetables
- Supplements
- Dahi or Yoghurt
- Supplements



### Soft foods

- Rice
- Upma
- Khichdi
- Porridge, made with for eg. sabudana
- Mashed potato
- Daal water
- Soup



# YEAST INFECTIONS

## IN CHILDREN WITH SPECIAL NEEDS

### DEFINITION OF YEAST INFECTIONS

Yeast (*Candida albicans*) is a microbe present internally inside our bodies. They also reside on our skin, genitals, ears, intestine, nails, mouth and rectum. When there is an over-growth of these microbes in the body it leads to yeast sensitivity in children, causing many unpleasant symptoms.



### REASONS FOR YEAST INFECTIONS

The main reason is an inherent problem associated with a pre-existing condition, such as low muscle tone seen in children with Down's syndrome. In addition to the pre-existing condition, the following also further worsen constipation.



Excessive consumption of antibiotics and disruption of good stomach bacteria.



Excessive intake of sweets, candy, cookies, cakes, fruits or fruit juices



Hidden form of sugar  
(ketchup, peanut butter, cereal,  
ready to prepare soups)



Excessive intake of yeast/moldy  
foods (bread, mushroom, cheese,  
nuts, fruits)



Stress, inadequate stomach  
acid, pollution (that suppresses  
immunity)

## EFFECTS OF YEAST INFECTION



White coated tongue



Redness around the anus



Hives



Behavior problems – anxiety,  
irritability, hyperactivity,  
attention impairment





Insomnia



Ear infection



Bladder infection, vaginal infection & discharge



Craving for sweets



Muscle aches



Chronic headaches



Intestinal complaints (bloating, gas, constipation, diarrhea, rectal itching, indigestion, excessive hunger)

## TESTS to detect yeast infections



### CDSA

comprehensive digestive stool analysis



### OAT

organic acid tests (which measures the level of fungal metabolites, in other words yeast waste products in the urine).

## TREATMENT options for yeast infections

• Medication

• Homeopathy

• Dietary changes

## DIETARY SOLUTIONS FOR YEAST INFECTIONS

### What to eat.... .....and, why?

SCD-CF (specific carbohydrate diet plus casein free diet)  
**limits yeast growth**



Vegetables such as Garlic,  
broccoli, cabbage  
**Anti-fungal**



Brown rice, fresh food,  
egg, Fruits low in  
glycemic index  
**which does not release  
sugar fast in blood stream**



Fermented vegetables,  
probiotic supplement  
**To increase good gut  
bacteria**



Fluids such as soups  
and water  
**To help flush out  
yeast in the body**



Anti -yeast/fungal medication  
along with anti-yeast diet has  
to be followed strict



Sweat to detoxify (yoga,  
sauna, hot bath, steam)  
**Helps maintain overall  
health and detoxifies the  
body**

## **What NOT to eat.... ....and, why?**



Dairy Products  
**mucous forming food**



Gluten  
**Too complex for the body  
to digest**



Trans fat  
**Disruptive to immunity**



Caffeine  
**Dampens immunity, and  
as a result increases blood  
sugar levels**



carbonated beverages, frozen or canned fruit juices Has too much  
sugar that will feed the yeast more.

**Sugary foods act as a fertilizer for yeast**

# OXALATE INTOLERANCE

## IN CHILDREN WITH SPECIAL NEEDS

### DEFINITION OF OXALATE INTOLERANCE

Oxalic acid is the most acidic organic acid in body fluids, which exists as crystals.

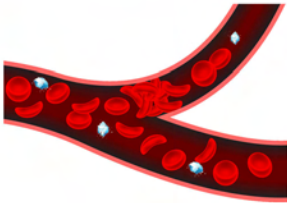
In a healthy digestive system, oxalate crystals can be eliminated through

- excretion in urine,
- forming insoluble calcium oxalate and elimination in feces
- oxalate degradation by gut microbes

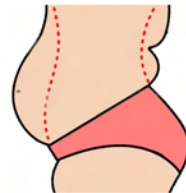


### REASONS AND EFFECTS OF OXALATE BUILD-UP

In an unhealthy digestive tract (leaky gut) oxalate build-up is seen -



Oxalate crystal may end up in the blood, urine or tissue leading to further inflammation.



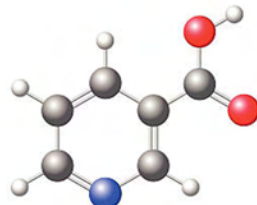
Excess fat increases oxalate levels in the body

low oxalate



Lack of good bacteria

High oxalate



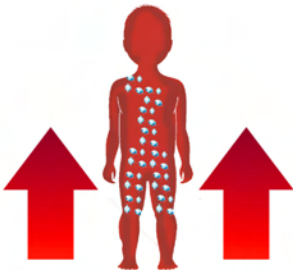
B6 deficiency



If the detoxification system is not working properly as often seen in children with Autism spectrum disorder, the excretion of oxalates doesn't happen effectively.



Consuming diets high in oxalate



Increase in oxalates level are also seen in children with yeast infection

## REASONS FOR OXALATE BUILD-UP

- It is difficult to suspect Oxalate intolerance as the symptoms are very general & not specific for Oxalate intolerance. Similar symptoms can occur with many other medical conditions.
- One needs to rule out other conditions & find out whether the child is on diet rich in Oxalates or not.
- **Antibiotics** damage the intestinal flora which can result in Oxalate intolerance.

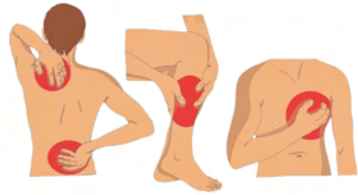




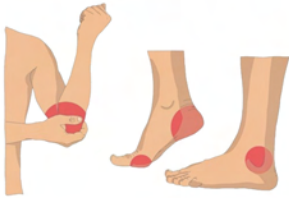
If the child is on antibiotics & shows the following symptoms one should think of Oxalate intolerance.



Watery stools/passage of water through anus



Body-ache/muscle cramps



Joint/bone pain



Lethargy and Depression



Colic-like pain in the abdomen



Stones in kidney.



Burning sensation during urination and upon defecation



Fungal infection-oral thrush, ear infection, groin infection, infected nails, infected space between the toes

## What to eat.... ....and, why?



Eat foods low in oxalate  
**To prevent more build-up of oxalate**



Increase the amount of calcium in the diet  
**oxalate reduces calcium absorption**



Increase water intake  
**flush out excess oxalate crystals**

### Supplements like:



**Vitamin E** (reduces damage induced by excess oxalate build-up)



**Omega-3 fatty acid** (reduces damage induced by excess oxalate build-up)



**Probiotic rich food and probiotic supplement** (increases oxalate degrading bacteria)



**Calcium citrate** (this form of calcium prevents absorption of oxalate from the intestine)

## What NOT to eat.... .....and, why?



### **Reduce high-oxalate foods**

Spinach, beet root, beet leaves, chocolate, peanuts, wheat bran, black tea, instant coffee, cashew, almonds, soy drinks, amaranth, buckwheat, carrots, potato, eggplant



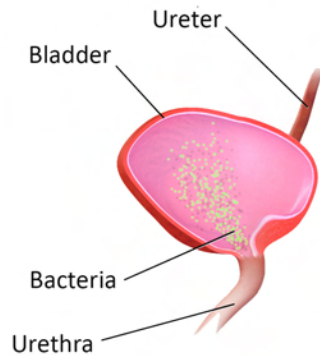
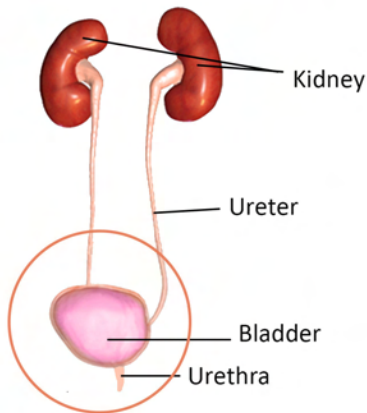
**Limit** Vitamin C content of the diet (Vitamin C can produce more oxalates)

# URINARY TRACT INFECTIONS (UTI)

## IN CHILDREN WITH SPECIAL NEEDS

### DEFINITION OF URINARY TRACT INFECTIONS (UTI)

The urinary system of the body acts as the drain pipe for the body to excrete waste and water. Normally, growth of harmful bacteria can be curbed by flushing them out of the body through urination. However, when this system which consists of the bladder, two kidneys, urethra and ureters are compromised, the over-growth of bacteria (or a virus occasionally), gives way to a full-blown UTI.



In detail view of Inflamed bladder

### REASONS FOR URINARY TRACT INFECTIONS (UTI)



Hygiene – Wiping from back (anus) to the front(urethral opening) can be a major cause for infection in girls



Tight fitting clothes

## Children with special needs are more prone to UTI than the regular population

This could be due to several reasons -



- 1** Lack of communication to describe the need to empty their bladder on time

Birth defects in the urinary tract that hinder urination/ promote reflux or retention of urine in the bladder.

**2**



- 3** Block in the urinary tract

Urinary incontinence (commonly seen in Cerebral Palsy) or bed wetting can lead to poor hygiene opening them up to a high probability for a bacterial infection.

**4**

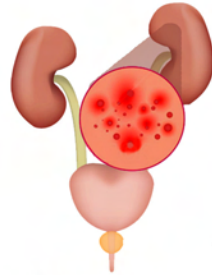


## EFFECTS OF URINARY TRACT INFECTIONS (UTI)

Chronic UTI can lead to



Feeling ill  
Fever



kidney infections if  
left unattended



Cloudy, strong smelling  
urine



Urgent need to urinate  
without being able to  
urinate



Pain or burning sensation  
during urination

**In severe cases,**

- Vomitting
- Lower back pain
- Blood in the urine





## What to eat.... and, why?



### Drink more fluids (water of fluids)

Helps flush the harmful bacteria out of the urinary tract



### Consume Vitamin C rich fruits or their juice

Preliminary evidence suggests that Vitamin C causes acidification of the urine and prevents bacterial over-growth  
Ex:Cranberry



### Drink barley water

Barley water acts as a diuretic and increases the frequency of urination.



### Garlic

Garlic has been shown to contain compounds that can kill harmful UTI causing bacteria



### Apple cider vinegar has been used as a home remedy for UTI

ACV has been shown have anti-bacterial properties (but inconclusive scientific evidence) that help fight off a UTI



### Consume high-fibre carbohydrates

To help the digestive system heal better when on UTI medication



### Probiotics through foods or supplements (dahi, fermented foods)

Repleishes the harmful bacteria with good bacteria, and helps the body fight off the infection. If antibiotics are being administered as a treatment for UTI, Probiotics will help the digestive system heal as a result

### What NOT to eat.... .....and, why?



#### Sugary foods (processed foods, carbonated drinks)

Bacteria can feed off excess sugar consumed. This will promote over-growth of bacteria.



#### Avoid caffeinated drinks such as coffee or colas

Can act as a bladder irritant and promote UTI



#### Avoid spicy food

Stresses the digestive system and will increase burning during urination



#### Vegetables such as tomatoes and brinjal (nightshade family of vegetables)

They can increase inflammation in the body that occurs during a UTI

## CREDITS

This content in this booklet was created and developed by Nayi Disha . Vashishta Pintu developed the graphics in the booklet. Special thanks to Nutritionist, Ms.Shruti Kelkar for generously sharing information towards the development of the content. We greatly appreciate the feedback received from Dr.Nina Vaidya,Pediatrician.

## DISCLAIMER

This disclaimer claims that none of the content in this booklet is in anyway deemed as medical advice, and be treated for information purposes only.