

# Probiotics & Prebiotics in Disease Management & Prevention

## Digestive Health

- Relieves Constipation
- Treats and Prevents Diarrhoea
- Manages Lactose Intolerance
- Reduces symptoms of Irritable Bowel Syndrome

## Diabetes & obesity

- Helps maintain weight
- Reduces blood glucose levels and improves insulin sensitivity

## Heart Health

- Controls hypertension
- Controls serum cholesterol

# Probiotics & Prebiotics in Disease Management & Prevention

## Bone Health

- Increases bone mineralization & density
- Prevents osteoporosis

## Oral Health

- Maintains healthy gums & teeth
- Prevents Dental caries
- Manages & prevents bad breath

## Immunity & Infections

- Boosts immunity
- Protects against upper respiratory infections
- Reduces the prevalence & severity of allergy & eczema in susceptible individuals
- Treats urinary tract infections

## **Digestive Health**

- Prebiotics & Probiotics are effective to manage constipation as well as diarrhoea caused due to bacterial infection, travelling or antibiotic usage.
- Probiotics help in lactose digestion in people with lactose intolerance. The gut of these people lack the enzyme needed to digest lactase, the sugar present in milk, which also causes gastrointestinal symptoms.
- Probiotics may also reduce the severity of pain and bloating in patients with irritable bowel syndrome.

## **Diabetes & obesity**

- The imbalance of good and bad bacteria in the body makes the lining of intestine malfunction. This lining acts as a barrier & regulates what is absorbed into the blood. When it is healthy it allows water and nutrients to be absorbed into the blood, while blocking chemicals and bacteria. The intestinal lining malfunction causes toxins, bacteria, waste products and other substances from the intestine to leak into the bloodstream. The immune system sees these substances as harmful and triggers a response causing inflammation. If not treated, long term inflammation can cause medical conditions like obesity and diabetes.

- Probiotics & prebiotics restore the disrupted intestinal lining, strengthen it and produce certain helpful by-products like SCFA ( short chain fatty acids).SCFAs have a beneficial effect on body weight, insulin sensitivity, and glucose balance. They act as an energy source for the body and can provide upto 10 % of daily calories.
- They regulate satiety and reduce appetite thus playing a major role in food intake and energy consumption.
- They help to strengthen the intestinal barrier, thus reducing inflammation.
- Probiotics & prebiotics reduce the amount of food needed by our body due to the correct digestion and metabolism of food. They regulate energy metabolism & hormone secretion, improve insulin sensitivity & satiety, thus helping to maintain weight and control blood sugar levels.

## **Heart Health**

- Elevated blood cholesterol is a major risk factor for the development of coronary heart disease. Therefore, lowering the serum cholesterol level is important to prevent it.
- Probiotics & prebiotics improve blood pressure and help to reduce cholesterol levels by reducing its synthesis & decreasing its absorption by intestine. They also absorb cholesterol for their own particular digestion.

## **Bone Health**

- Prebiotics and probiotics contribute to bone health by increasing the absorption of minerals including calcium, phosphorus and magnesium in the intestine.
- Vitamin K produced by probiotics direct these absorbed minerals towards bone rather than arteries.
- The by-products produced by good bacteria pass into the blood from intestine and are transported to bone where they reduce the activity of cells (osteoclasts) responsible for breakdown of bone. This increases bone mineralization and density and prevents osteoporosis.

## **Oral Health**

- Probiotics & Prebiotics can help to destroy the harmful microbes in the oral cavity by fighting against them and help in maintaining healthy gums, teeth & preventing bad breath.
- Dental caries, a disease of bacterial origin characterized by acid demineralization of the tooth enamel is also prevented by use of prebiotics & probiotics.

# Immunity & infections

- The gut is largest immune organ of the body. The good bacteria in the gut support immune health by directly interacting with bad bacteria and creating an inhospitable environment for them.
- Probiotics & prebiotics are useful for preventing or treating respiratory tract infections through enhancing the immunity of individuals & via activating certain specific cells (immunoglobulin A (IgA), neutrophils etc). They reduce the incidence of influenza-like symptoms and upper respiratory tract infections.
- Prebiotics & probiotics help in the treatment as well as reduce the risk for development of allergies and urinary tract infections.

# Symptoms of Imbalance of Good & Bad Bacteria

- Flatulence / Gas / bloating
- Reduced appetite
- Unpleasant taste in mouth
- Nausea
- Belching
- Loose stool, diarrhoea, constipation or a combination
- Abdominal distension
- Fatigue or low energy
- Repeated infections

# Maintaining the Balance between Good & Bad Bacteria

- Eat a variety of plant foods rich in fibre such as whole grains, pulses, fruits and vegetables
- Make curd and buttermilk daily part of your daily diet
- Add chopped apple with skin / unripe banana to the curd
- Incorporate fermented foods like idli, dosa, dhokla, kanji , pickles in your diet
- Minimize the use of processed & refined foods
- Avoid indiscriminate use of antibiotics
- **Use commercial prebiotic & probiotic supplements** when the body is affected by poor diet, repeated infection, antibiotic use or stress and relieve the gastro-intestinal symptoms