Sucralose: A Promising Sweetener for Diabetics

Source: TH

Why in News?

A recent study from India has highlighted the potential benefits of using **sucralose, a non-nutritive sweetener,** as a substitute for **sucrose (table sugar)** among individuals with Type 2 Diabetes.

- The study contrasts with the WHO's recent caution against **Non-Nutritive Sweeteners (NNS)** for weight control in non-diabetics.

What were the Key Findings of the Study?

- The study reported **no significant changes in glucose or HbA1c levels,** a key indicator of blood glucose control, between the intervention and control groups.
- Participants using sucralose showed slight improvements in body weight, waist circumference, and **Body Mass Index (BMI).**
- The judicious use of sucralose can help in reducing overall calorie and sugar intake, which is crucial for managing diabetes effectively.
- **Significance:** These findings are significant for India, where **sweeteners** are less **commonly used.** The study suggests that sucralose could **improve dietary compliance** and **aid in weight management for diabetics** in the country.

What are Sugar and Sugar Substitutes?

- **Sugar:** It is a form of carbohydrate, along with fibre and starch. While carbohydrates are important for our health, **sugar itself is not essential.**
    - White table sugar, known as **sucrose, is the most** widely used sweetener.
    - Other **natural sugars i**nclude: **fructose, galactose, glucose, lactose, maltose.**
- **Sugar Substitutes:**
    - Sugar substitutes offer a **sweet taste without the calories** associated with sugar, with some containing no calories at all.
    - They are commonly found in products labelled as "**sugar-free", "keto", "low carb" or "diet".**
    - **Types of Sugar Substitutes:**
        - **Artificial Sweeteners:** Also known as **Non-Nutritive Sweeteners (NNS),** are primarily synthesised from chemicals in laboratories, or derived from natural herbs.They can be 200 to 700 times sweeter than table sugar.
            - **Examples:** Acesulfame potassium (Ace-K), Advantame, Aspartame, Neotame, Saccharin, Sucralose etc.
        - **Sugar Alcohols:** They are synthetically derived from sugars, and are used in many processed foods. They are **less sweet than artificial sweetener**s and add texture and taste to items like **chewing gum and hard candies.**
        - **Examples**: Erythritol, isomalt, lactitol, maltitol, sorbitol, and xylitol etc.
        - **Novel Sweeteners:** They are derived from natural sources, offer the **benefits of both artificial and natural sweeteners.** They are **low in calories and sugar,** preventing weight gain and blood sugar spikes, and are typically **less processed**,

closely resembling their natural sources.

- **Example:** Allulose, Monk fruit, Stevia, Tagatose etc.

What is Diabetes?

- **About:**
  - **Diabetes** or Diabetes Mellitus (DM) is a medical disorder characterised by **insufficient insulin production** or an **abnormal response to insulin**, leading to **elevated blood sugar (glucose) levels.**
  - While 70–110 mg/dL fasting blood glucose is considered normal, blood glucose levels between 100 and 125 mg/dL is considered prediabetes, and **126 mg/dL or higher is defined as diabetes.**

Types of Diabetes		
	Type 1 Diabetes	**Type 2 Diabetes**
Causes	In this, the **pancreas does not make insulin,** because the body's immune system attacks the islet cells in the pancreas that make insulin.	In this, the **pancreas makes less insulin** and the body becomes resistant to insulin
Prevalence	Type 1 diabetes affects about **5-10% of people** with diabetes, typically developing **before age 30**, though it can occur later in life.	Type 2 diabetes is **more common** but typically begins **after age 30** and increases with age
Prevention	**Cannot** be prevented.	**Can be prevented** with lifestyle changes.

- **Initiatives to Tackle Diabetes:**
  - National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).
  - World Diabetes Day
  - Global Diabetes Compact

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