

## Strategies for appetite suppression: A key player in the management of diabetes and obesity

Sanjay Kalra,<sup>1</sup> Jubbin Jacob,<sup>2</sup> Nitin Kapoor<sup>3</sup>

### Abstract

People with diabetes and/ or obesity are advised to curtail their calorie intake in order to improve their glycaemic control and reduce their weight. However, many patients complain of an inability to manage their appetite and thereby find it difficult to control their calorie intake. Dysregulated appetite leads to glycaemic swings, and creates a challenge for metabolic management. Moreover, short term non-structured methods to suppress appetite often can cause a rebound excess of food intake, which can even overshoot more than the baseline intake. This article shares the non-pharmacological heuristics and hacks to help suppress and optimize appetite which can be used in day-to-day clinical practice.

**Keywords:** Appetite, appetite suppressants, Behavioural therapy, Diabetes, Obesity.

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### Introduction

Diabetes and obesity have reached pandemic proportions and are now considered as multifactorial syndromes with multifaceted clinical presentations.<sup>1</sup> Dietary management remains the corner stone of all therapeutic strategies in these metabolic disorders. One intervention that is common to all dietary prescriptions is the effort to optimize caloric intake. This involves crafting of a medical nutrition regimen incorporating the right meal pattern, meal composition, meal quantity, that is consumed in the right style. Earlier publications have expanded upon some of these aspects.<sup>2-4</sup>

Acceptance of calorie restriction, is difficult, however, and adherence is further limited. An understanding of psychology, coupled with knowledge of culinary science, allows the physician to assist the patient in suppressing

appetite and adhering to suggested therapeutic regimens. Moreover, a patient centric tailored approach promises a long-term sustenance of these regimens. The Table given below outlines the various behavioural and culinary methods for controlling appetite.

**Table:** Methods of appetite suppression/ limitation.

#### BEHAVIOURAL

- Identify antecedents for appetite
  - Where, when, why, with whom do you feel hungry?
- Identify behaviours related to bad appetite
  - What do you eat wrongly, in what manner?
- Identify and use internal cues for appetite suppression
  - What behaviours can you practice to suppress appetite e.g., going for a walk, phoning a friend, meditating

#### CULINARY

##### Pre meal practices

- Consuming clear beverages (water, soups, zero-calorie aerated drinks, sugar free lemonade) before a meal with consuming salads (green leaves, cucumber, tomato, radish) before a meal
- Consuming appetite-suppressing functional foods (bitter leaf, bitter gourd, caffeine) before a meal
- Avoid strenuous exercise prior to a meal

##### Meal preparation

- Cook food in large pieces (do not cut vegetables in to small pieces), so that it takes longer to cut/break/bite
- Choose high fibre food
- Consider a ketodiet (only under medical supervision)
- Use more peppery and astringent spices

##### Meal plating

- Use small sized crockery and cutlery
- Serve small helpings
- Serve protein-rich foodstuffs before carbohydrate-rich dishes

##### Meal consumption

- Mindful eating: slow down
- Chew well before swallowing

##### Post meal provision

- Consume clear beverages after a meal
- Use a digestive spice like saunf (fenugreek) or an aperitif like paan

### Behavioural Methods for Appetite Suppression

Identify the environment wherein the patient tends to eat more. Not only the physical environment but also the social environment is important. It would be prudent to look for alternatives to these antecedents where in the patient may consume much more calories than usual. Further by identification of calorie dense foods that may

<sup>1</sup>Department of Endocrinology, Bharti Hospital, Karnal, <sup>2</sup>Department of Endocrinology, Christian medical College, Punjab, Ludhiana, Punjab, <sup>3</sup>Department of Endocrinology, Diabetes and Metabolism, Christian Medical College, Vellore, India and Non-Communicable Disease Unit, The Nossal Institute for Global Health, Melbourne School of Population and Global Health, University of Melbourne, Victoria, Australia.

**Correspondence:** Sanjay Kalra. Email: [brideknl@gmail.com](mailto:brideknl@gmail.com)

often be consumed in large quantities, it may help to avoid storage of these items in large quantities. This is especially helpful for those who work from home or housewives who stay at home most days of the week.<sup>5</sup> To provide alternative behavioural options that can be planned rather than spending that time eating. These may include going for a walk, talking to a friend, meditating or watching a movie etc.<sup>6</sup>

## Culinary Practices that can Help Curtail Appetite

Consuming appetite suppressing foods or low-calorie beverages can help to suppress appetite before eating the main meals. The timing and duration of exercise in relation to the meals has also been shown to play an important role in suppressing appetite.<sup>7</sup> Preparation of the food should aim to make the food palatable but at the same time, food items that take time to chew, have higher fiber and use stringent spices are helpful to reduce appetite. The meal display is also important a full small plate provides much more contentment as compared to a large plate filled half with the same amount of food in both plates.<sup>8</sup> Protein is the key macronutrient that provides satiety. Recent evidence supports that vegetarian sources of protein may provide more satiety as compared to non-vegetarian sources. Not only the content but the order of food intake is also important, to have protein first provides more satiety and overall, less quantum of food consumption.<sup>9</sup>

Patterns of food intake may also influence appetite. The induction of ketosis in either intermittent fasting or in keto diet is another way of reducing appetite. Ketone bodies which are predominantly produced by fat breakdown come into play when fat breaks down after prolonged fasting or when fat is the predominant macronutrient consumed. Ketone bodies are known to be strong appetite suppressants.<sup>10</sup>

## Conclusion

In this manuscript we describe the behavioural and

culinary factors that can assist a patient with diabetes and or obesity in reducing appetite. If these measures fall inadequate then in addition medications (Glucagon like peptide — 1 analogues), intra gastric devices (Intragastric balloon), bariatric surgeries and newer medications that target the appetite regulating genes (Setmelanotide, MC4R Agonist) may be used in selected patients.<sup>2,11,12</sup> Nevertheless, intensive behavioural therapy and dietary alterations, remain the cornerstone of appetite regulation.

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