

## Designing of biscuits to overcome dual burden of malnutrition

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### ABSTRACT

The aim of this study was to find out designing of biscuits to overcome dual burden of malnutrition. It was found from the results that the incorporation of sources of fibre and protein in biscuits or in other food products can improve the circumstances of co-existence of both under-nutrition in children and over-nutrition in adults.

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### INTRODUCTION

Biscuits are popular and well-accepted snack food throughout the world. People from different age groups and background eat biscuits. Biscuits are available in wide variety and are nutritious and simple to produce. It can be made easily with readily available ingredients. Biscuits have the potential to be a significant contributor of essential nutrient in the human diet. This is primarily because biscuits are very popular and well accepted by consumers and children. A successful way to improve nutritional aspects of biscuit is the fortification.

Rapidly growing economies often experience coexistence of underweight and overweight problems, referred to as the double burden of nutrition (Delisle, 2008; Popkin, 2004). The implications of both overnutrition and undernutrition indicates that a country can exert rates of infectious diseases and chronic diseases simultaneously. A situation that has not been observed before in history.

Good nutrition is a fundamental right. In India, protein energy malnutrition (PEM) among children under five years still constitutes a major public health problem, poor infant feeding and weaning practices are major contributory factors in malnutrition especially among the under fives. Over the last two decades, overnutrition and obesity have emerged as public health problems; there have been increases in the prevalence of diabetes and cardiovascular disease (CVD), especially in urban areas. The increase in income has made it possible for people living in urban areas to have access to a wider range of food outlets, to afford transportation and other luxuries of western society

that have led to an increase in fast food consumption and a more sedentary lifestyle.

Today the emphasis should be given on consumption of variety of food that contain high amount of fibre, protein, vitamins, minerals etc. In the developing countries there is demand to substantially increase protein quality and quantity in daily diet of common masses through food habits which not only will improve general public health but also prevent protein energy malnutrition. However, fibre intake is commonly lower than recommended. In consequence, the development of foods with high fibre content should be desirable. Fibre intake could easily be increased by selecting foods naturally higher in fibre and also by addition of fibre to foods. A good correlation has become evident between fibre consumption and the reduction of coronary heart-related diseases and diabetes incidence.

Since snacks like biscuits are acceptable to all age group people, the present study has developed a formula for the preparation of biscuits from locally available foods which can be used as a tool to fight against the dual burden of malnutrition.

### METHODOLOGY

All the raw ingredients like refined flour, butter, sugar, milk, baking powder and soda, etc. were purchased from the local market of Udaipur.

#### Preparation of biscuits:

A standardized recipe with some modifications was used for the preparation of biscuits (Table A). The biscuits