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### Effect of canned food on health of children below 12 years in Raipur city of Chhattisgarh

**Chetna Agarwal, Dr. Abhaya R Joglekar, Dr. Amit Kumar Dutta and Dr. Shaista Ansari**

#### Abstract

The Lifestyles of today's society have observed a tremendous change over a decade and are very different to that of 20 or even 10 years ago. It is evident that convenience plays a prominent role in the food choices of today's consumers; unfortunately, today's world has been adapted to a system of consumption of foods which has several adverse effects on health. Food adulteration is the process in which the quality of food is lowered either by the addition of inferior quality material or by extraction of valuable ingredient. It not only includes the intentional addition or substitution of the substances but biological and chemical contamination during the period of growth, storage, processing, transport and Distribution of the food products, is also responsible for the lowering or degradation of the quality of food products. Food products are said to be adulterated if their quality is adversely affected by adding of any substance which is injurious to health or by abstracting a nutritious substance. Adulteration of food causes several Health problems in humans. Some of the health hazards include stomach ache, body ache, anemia, abortion, paralysis, and increase in the incidence of tumors, pathological lesions in vital organs, abnormalities of skin and eyes. It can be hypothesized that people are generally not aware about adulteration. The impact of adulteration is more on those children whose parents are illiterate and belong to low income group and also both media and govt. is not playing a strong role to control the adulteration. The present study indicates to check the deliberate adulteration caused by some anti-social traders just to earn some more unreasonable profit. This study will be very much useful in educating general public at large by suggesting them an early technique to test and discover the adulteration. On the same time it will be positively enlighten the role of media on health status to aware the society. Our Study will develop awareness about govt. policies among parents of children on food adulteration act in future.

**Keywords:** Canned food, adulteration, children, survey, demography

#### Introduction

Food adulteration is the process in which the quality of food is lowered either by the addition of inferior quality material or by extraction of valuable ingredient. It not only includes the intentional addition or substitution of the substances but biological and chemical contamination during the period of growth, storage, processing, transport and distribution of the food products, is also responsible for the lowering or degradation of the quality of food products. Adulterants are those substances which are used for making the food products unsafe for human consumption <sup>[1, 2]</sup>. Food products are said to be adulterated if their quality is adversely affected by adding of any substance which is injurious to health or by abstracting a nutritious substance. According to the provisions of Food Safety and Standards Authority of India, if any person imports or manufactures for sale, or stores or distribute any adulterant, by himself or by any other person on his behalf, shall be liable for a penalty <sup>[2-5]</sup>. Further it is provided that, in a proceeding under the provisions of Food Safety and Standards Authority of India, it is not a defense that the accused was in possession of an adulterant on behalf of any other person <sup>[6]</sup>. Adulteration of food causes several Health problems in humans. Some of the health hazards include stomach ache, body ache, anemia, abortion, paralysis, and increase in the incidence of tumors, pathological lesions in vital organs, abnormalities of skin and eyes. Hence food adulteration should be given great importance due to its effect in the health significance of the public. Food is the basic necessity of life.

One works hard and earns to satisfy our hunger and relax later. But at the end of the day, many of us are not sure of what we eat. We may be eating a dangerous dye, sawdust, soap stone, industrial starch and aluminum foil. Contaminated foods and drinks are common sources of infection. Adulteration means the addition of ingredients which are not permitted in food [7, 8]. They are added because of business profit only. Adulterated foods are harmful for human health as they contain the unauthorized food ingredients. Adulteration in foods also decreases our moral and social value. According to Beckman in our daily life there are so many unhygienic and contaminated things which are harmful to our health. Most of the things are contaminated. Even the food, which we eat, is adulterated. The deliberate contamination of food material with low quality, cheap and non-edible or toxic substances is called food adulteration [1, 6, 9, 12].

**Materials and Methods**

**Research Design**

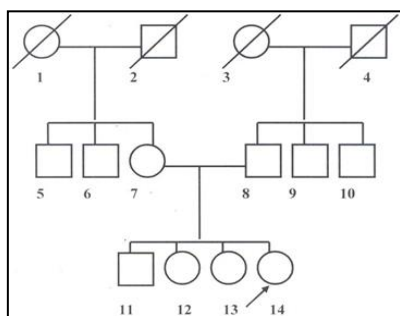
As cross sectional research was carried out to assess the impact of adulteration on various health parameters of growing children by their demographic interaction. The present research study will be conducted in Raipur city of Raipur district and the major reasons of selecting the city for proposed work were investigator belongs to the city, where the elderly people are residing. Investigator was also familiar to the locality, so it was easy to work at known place. The parents of growing children were keen to help in this work.

**The research work:** was conducted in the city to give a clear picture of the health status of the children and their awareness about adulteration. The stratified random as well as purposive sample method was applied for collection of data. The purpose of stratification was to increase a heterogeneous universe into more and more homogenous one within each stratum. For the selection of sample city were divided into 04 zones i.e. North, South, East, West, 100 growing children from each zone were randomly selected from joint family, alone family, and spouse family.

**Assessment of health status of children:** which included weight, height, health complications, deformities (both physical and haematological), and behavior change, social and cognitive problems during last one year were collected by using pretested interview schedule and questionnaire followed by the collection of blood sample.

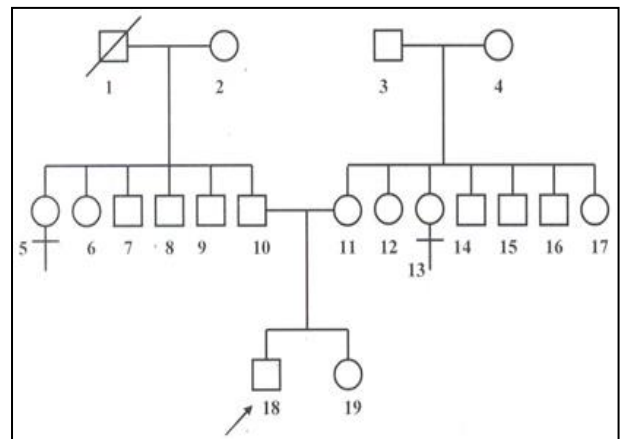
**Results & Discussion**

The Proposita is female of ten years having no problem of her health. Her mother and father having no complain of their health. No evidence of cancer or any serious genetic history found in her family.



**Fig 1:** Showing the Proposita having no serious genetic history in family

The Proband is a young male of eleven years having no problem of his health. In his family there are two history of infant death. No evidence of cancer previously in his family history.



**Fig 2:** Showing the Proband with two history of infant death in history

**Nutrition of canned food**

With other canned food products, manufacturers add preservatives, fat and sugars to keep them fresher for longer. Although it enhances their life, which is a big advantage, it also compromises their nutritional value. Another downside to these food stuffs is that the sugars and fats might increase the amount of calories you consume because of these ingredients themselves and because you are usually required to combine them with other products like milk and cheese. Therefore, the amount of calories on the package label is not the amount of calories you will eventually consume [12].

**Debate on canned foods**

Processed or convenience food has been the subject of many health debates especially among dieters and diabetics. People are generally warned to keep away from these foods because of the amount of salt, fat, sugar and preservatives they contain. These ingredients not only lead to weight gain but can cause blood sugar levels in diabetics to rise, becoming a potential threat, to obtain a healthy lifestyle it is very important to replace convenience food with healthy homemade food. Instead of package potato chips, fries can be made at home with organic potato. Frozen and canned fruits and vegetables can be replace with fresh ones. Using fresh juices instead of package juice is also a healthy choice. It is a matter of choosing a healthy lifestyle [13, 15]. Although it is convenient for us but it is not convenient for our health. Media should have to play an important role to spread awareness among the nation. However, convenience foodstuffs continue to fly off the shelves because they fit well into the busy lifestyles that most people lead today.

**Recognizing canned foods**

According to Health and Human Services, the quest for convenience is leading more people to consume away-from-home quick-service or restaurant meals or to buy ready-to-eat, quickly accessible meals to prepare at home. Convenience foods are being packaged to trim the time spent on shopping, preparation, cooking, and even clean up. When the wrong choices are made, the trend contributes to obesity, especially among children. One of the primary motivations behind choosing convenience foods is to save time, and nutrition can go out the window [16].

### Metabolic consequences of canned food

With more women in the workforce, the demand for convenience foods is rising, primarily in emerging economies. The rapid growth of the food service industry in large number of developing markets is also expected to fuel the demand of packaged ready-to-eat snacks such as potato fries, bakery products and meat products. However, lack of proper storage and logistics is a threat to the frozen and chilled category of convenience foods in developing countries.

There are stringent regulations on labelling and manufacturing of convenience foods in both developed and developing nations. One of the major drivers for convenience foods industry growth is widened distribution channels and tendency of consumers to buy off-the-shelf especially in emerging markets. Food dense in calories, when oxidised in the body causes enormous formation of 'Acetyl CoA'. Acetyl CoA in excess is channelized out of mitochondria for its participation in other metabolic pathways and for its effective utilisation. These pathways include fatty acid synthesis and biosynthesis of cholesterol, which causes excess fatty acid and cholesterol formation. The high levels of sugar in junk food which puts metabolism under stress; when refined sugar is taken, the pancreas secretes high amounts of insulin to prevent a dangerous spike in blood levels. Because fast food and junk food don't contain adequate amounts of protein and good carbohydrates, the blood sugar levels suddenly drops after eating, resulting with grumpy, fatigued feeling and a craving for sugar.

Another pathway which acetyl CoA is involved is in formation of ketone bodies, which is inactive when energy levels are high, but is active in case when impaired glucose tolerance sets in. Carbonated soft drinks, in addition to towering amount of sugar reportedly contain methyl glyoxal (MG), which is strongly associated with human carbonyl stress. Fried and processed food, contains high amounts of Trans fats, saturated fats in addition to ox cholesterol. Cholesterol is a little-known type of cholesterol which may prove to be a lethal compound to heart health as reported by Scientists from China in the National Meeting of the American Chemical Society in August 2009. A high sodium level has been clearly implicated as the causative factor for high blood pressure. Sodium is known to affect renin-angiotensin system in kidneys, which produces vaso-constrictive effects on arterioles, leading to development of high blood pressure. The salts used for the preparation has an impact of their excretion through kidneys, thus having an effect on renal system. High cholesterol from junk food also affects liver on the long run where it is metabolized as it strains liver, damaging it eventually [17-20].

### Conclusion & future prospect

The major contributing factor to children becoming overweight is a high-energy diet combined with a low-energy lifestyle. This means that children tend to eat too much of the wrong foods, and do little exercise to burn off the extra energy they are consuming. It is alarming that although the quality and volume of food available in India has risen in the past 30 years, the nutritional value of what children are actually eating has fallen. The role canned foods have played in this problem cannot be ignored, as the amount of pre-packaged and take-away foods available and consumed is very significant. Governments at all levels are realising the potential health costs of this problem, and are taking action to find solutions.

The present study indicates to check the deliberate

adulteration caused by some anti-social traders just to earn some more unreasonable profit. This study will be very much useful in educating general public at large by suggesting them an early technique to test and discover the adulteration. On the same time it will be positively enlighten the role of media on health status to aware the society. Our Study will develop awareness about govt. policies among parents of children on food adulteration act in future.

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