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## Effect of Dates in Lowering LDL Level in Geriatric Cases

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### Abstract

This study was designed to study the role of dates on geriatric cases. Date palm is a high energy value crop with a good nutritional value. Date palm has many properties like it prevent abdominal cancer, promote healthy bowel movement, control diarrhea, strengthen bones, diminish allergic reactions, maintain healthy weight, great energy booster, boost nervous system, reduce the risk of stroke, lower night blindness. General well-being in case of geriatric patients was assessed by physical examination, by monitoring bowel habits and evacuation, energy level, increase in stamina, mental alertness, removal of pain from bones while walking and by laboratory investigations like measurement of Hb and Lipid profile. Subjects - Sixty cases of both sex above 60 years of age were enrolled in the study. Duration of the project was two year while the duration of treatment was 6 months. Physical examination was done once in fifteen days while lab investigations like Hb, Lipid profile was measured at one month interval for six month time. 20-35 Dates was given on daily basis to all the geriatric cases enrolled in the study. There was significant increase in Hb and lowering of LDL levels in geriatric cases while on the other hand there was improvement in the general well-being of the geriatric cases. There was increase in energy level or increase in stamina, improvement of digestion, removal of diarrhea, boost in nervous system by removing headache, remove bone pain. Dates also help in increasing immunity in geriatric cases by relieving them from cough and cold. It can be said that 20–25 Dates should be by all geriatrics to improve their living and to lead healthy life.

**Keywords:** Date palm; Geriatric cases; Hb; LDL

are rich in several vitamins, minerals and fibers. This fruit contain oil, calcium, sulphur, iron, potassium, phosphorous, manganese, copper, magnesium, it also contain vitamins such as thiamine, riboflavin, niacin, folate, Vitamin A and Vitamin K which are beneficial for health [4,5]. Vitamins play role as antioxidants and help regulate immune function, maintenance of cell function for growth and reduce morbidity of infectious diseases [6,7]. Dates are regarded as a reasonable source of vitamins [8]. It is considered a moderate source of riboflavin, niacin, pyridoxal and folate as 100 g of dates provide over 9% of the daily (RDA/AI) for adults [8]. Thiamin, retinol and ascorbic acid found in low concentrations in dried dates, as 100 g of dates provide less than 7% of the daily RDA [4,8]. Nervous system can get a lot of help from dates since they have such significant amounts of potassium [9]. Dates are one of the very best sweet and versatile foods that can regulate the digestive process. It can significantly boost energy levels in people within half an hour of consuming it. The American cancer Society recommends an intake of 20-35 grams of dietary fiber per day, which can be supplied through dates. It is also said that taking one date per day helped to maintain eye health all your life. Dates are categorized as a laxative, they promote healthy bowel movement and comfortable passage of food as they have high level of soluble fiber, that is why they are frequently eaten by people suffering from constipation to get relief [4]. Dates help in strengthening bones due significant amount of minerals present in them, they help in fighting off painfull and debilitating diseases like osteoporosis. Dates contain selenium, manganese, copper, magnesium which are integral for the bone development as people begin to age. Most important fact about the dates is that organic sulphur is present in them, this helped in the reduction of allergic reactions and seasonal allergies. A study was done in 2002 according to which dates have positive impact on people who were suffering from seasonal allergic rhinitis. Dates are a great way to somewhat stem the effects of those seasonal allergies through its contributions of sulphur to the diet. Dates are high in natural sugars like glucose, fructose and sucrose [10,11]. So they can be used as a immediate snack as a instant source of energy. Many people use dates as afternoon snack as a instant source of energy when they feel lethargic or sluggish. The vitamins present in dates boost nervous system. Potassium is one of the primary ingredient present in dates that help in promoting healthy and responsive nervous system, it also improves speed and and alertness of brain. So dates are wonderful source for old aged people, there nervous system become sluggish for them dates are effective as they help in making mind alert and make there mind sharp. The nicotine

### Introduction

Date palm (*Phoenix dactylifera* L), is has high energy value, with a good nutritional value compared with tropical and sub-tropical fruits. Date palm is one of the most nutritious fruit both in tropics and sub-tropics, this makes the fruit to have high recognition among other fruits [1]. The date palm has a lot of medicinal uses which includes it prevent abdominal cancer [2], antifungal property [3], promote healthy bowel movement, strengthen bones, provide energy to anemic cases, maintain healthy weight, provide energy, boost nervous system, reduce the risk of stroke, lower night blindness. Dates

content in dates is beneficial for curing different kinds of intestinal disorders, its intake inhibits the growth of pathological organisms which in turn stimulate growth of friendly bacteria in the Intestine. Dates also contain soluble and insoluble fibers along with essential amino acids which increase digestion of food as well as make food more efficient i.e. more nutrients get absorbed by the digestive tract and enter the body for proper usage [12,13]. Due to its high mineral content and high iron level dates are considered as a supplement for people suffering from anemia. The high level of iron balances out the inherent lack of iron in anemic patients, increasing energy and strength by decreasing the feeling of fatigue and tiredness. Dates are very useful in keeping heart healthy, when they are soaked overnight in water, crushed in morning and then consumed, they have good impact in patients who have weak heart. Dates are rich in potassium which reduces the risk of stroke and other heart related problems, they also have property to reduce LDL cholesterol, which is the major factor contributing to heart problems. When taken twice a week it improves overall health of the heart [12,13]. Dates are used for alcoholic intoxication, they provide quick relief and sobering effect. Dates have high amount of potassium which is effective in curing diarrhea, they are easy to digest, their soluble fiber help in relieving diarrhea, by providing bulk to the bowel movements and promoting normal and healthy functioning of the excretory system.

## Material and Methods

Study was conducted on 60 cases of both the sexes, in the age group of 60 years and above which have LDL levels in the range of 130 to 159 mg/dl (Borderline high LDL level, corresponding to even higher rates for developing symptomatic cardiovascular disease) and show sign and symptoms of constipation, people having pain in joints, fatigue, sluggishness, mental and general weakness, palpitation, intestinal disorder, dyspnea, anorexia, giddiness, sign of iron deficiency anemia. While on the other hand patient suffering from gastrointestinal, hepatic, renal, cardiac, pulmonary, neurological, diabetes were excluded from the study. Enrolled cases are free to withdraw from the clinical trial any time on their own will. Therefore there were withdrawals or drop outs in the course of the study. Trial was conducted under ethical guidelines (Helsinki) and was cleared from Institutional review board. Informed consent was taken from the patient in both English and in local language Hindi. Their case record form was maintained and filled at regular interval. Cause of withdrawals and dropouts were noted. They will be given enough time to go through the contents. Only those patients will be enrolled in the study who are willing to participate in the trial. Study was completed in 2 years, while treatment time was 6 months. 20-35 gms of dates were given to the enrolled cases in this study.

Patients were assessed clinically and on subjective basis to check general well-being with physical examination in every fifteen days, while lab investigations were performed at baseline and six follow ups which was done at one month interval. Investigations done at the base line and final follow

up include blood sugar, Lipid profile, complete blood count (Hb gm%, TLC, DLC, RBC count, M.C.V, M.C.H, M.C.H.C), ESR. Investigations (CBC, ESR, Hb) were done on the fully automatic analyser while the biochemistry investigations LFT and KFT were performed on Semi-automatic analyser.

## Results

The subjective assessment of general well-being and physical examination after treatment showed better results, it improves digestion of the food, removes fatigue, general weakness makes the person active or removes laziness. It also promotes healthy bowel movement and control diarrhoea, strengthen bones, provide energy for anaemic patients, great energy booster, boost nervous system, on the other hand laboratory assessment was done which showed reduced level of LDL and the reduction was found to be significant ( $p < 0.001$ ). Consumption of dates improves digestion as it contains many soluble and insoluble fibres which enhances the bowel movement and removes constipation, dates also have high amount of nicotine which help in curing intestinal disorders, it help the growth of useful bacteria which help in digestion, dates also helped in increasing Hb significantly ( $p < 0.001$ ) in geriatric cases as they have impressive amount of minerals in them along with high iron content which helped in increasing Hb levels. This helped in removing fatigue and sluggishness, remove laziness, make the person active. There was significant relief from bone pain in geriatric cases enrolled in the study as dates contain significant amount of minerals which help in strengthening of bones, dates also contain selenium, manganese and magnesium which play integral role in the development of bones particularly for people who begin to age. Dates played very important role in Geriatric cases enrolled for the study they provide instant source of energy as they contain high amount of natural sugars like glucose, fructose, sucrose in them.

Many essential vitamins are present in dates that make them ideal to boost nervous system health and functioning in geriatric cases enrolled for this study. In dates potassium forms as one of the main ingredient which helped in promoting healthy and responsive nervous system, that is why dates form a wonderful source of food for people who began to age as their nervous system become sluggish or unsupported. Dates when soaked in water overnight, crushed in morning and then consumed helped in reducing LDL levels in geriatric cases. LDL is the most important contributing factor for heart attacks, stroke and heart diseases. This potassium not only help in keeping heart healthy but is also effective in curing diarrhea, it alleviates unpredictable nature of chronic diarrhoea by providing bulk to bowel movements and promoting healthy functioning of excretory system.

## Discussion

This study was done keeping in mind that dates have many properties like they are laxative in nature, they help in strengthening of bones, help in improving Hb level in anaemic cases, makes heart strong i.e it removes probability of having

heart attacks, strokes. As dates are rich in potassium they are act as a good laxative as well as a brain tonic. Keeping these points in mind this study was designed to see the effect of dates on geriatric cases i.e above 60 years and above. Dose of 20-35 gms of dates were given to geriatric cases per day, there was significant increase in Hb and significant decrease in LDL, making their heart strong and healthy free from heart attacks, stroke. Dates not only helped in maintaining heart healthy, it also helped in enhancing bowel movement, digestion. It also helped in curing diarrhoea in geriatric cases. They also act as a source of energy for geriatric cases due to the presence of the natural sugar in them. Consumption of dates not only provide energy, it also helped in increasing Hb as it contain significant amount of iron in them. Dates also helped in removing joint pain in old age cases. So it can be said that dates are very useful for geriatric cases in relieving bone pain, improving digestion, increasing Hb, removing fatigue and sluggishness, it act as a brain tonic making old age people mentally alert. Dates also help in making heart healthier in old cases by significantly decreasing LDL level in blood. It can be said that consumption of 20-35 gms of dates should be consumed by old age persons on daily basis to maintain healthy living.

## Conclusion

In summary it can be said that dates are very useful medicinally for geriatric cases, it help in improving general wellbeing, help in decreasing dab cholesterol of the body i.e. LDL on the other hand help in increasing haemoglobin content which help them stay fit and active.

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## Conflict of Interest

There is no conflict of interest in submitting the manuscript including financial, personal or other relationship with other people or organization.

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