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Dry Fruits and Diabetes Mellitus

Khan Sohaib A[1], Qurrat-ul-Ain[2], Khan Madiha[3*], Khan Mudassir A[1], Muhammad Sikander Ghayas Khan[4] and Ghayas Rabia[5]

[1] *Dow University of Medical and Health Sciences, Karachi, Pakistan*
[2] *Shalimar Hospital, Lahore, Pakistan*
[3] *University of Lahore, Lahore, Pakistan*
[4] *Riphah International University, Lahore, Pakistan*
[5] *Arif Memorial Hospital, Lahore, Pakistana*

**Corresponding e-mail: dr.madihakhan83@gmail.com*

ABSTRACT

Dry fruits are some of the essential foods a human body requires staying healthy. They are made after extracting water from them. These fruits are full of essential nutrients including minerals, vitamins, enzymes, fibers and protect the body from a number of different adversities. These fruits are also a source of healthy nutrition among diabetic people who are very concerned about what to eat and what not to eat. But besides their countless benefits, these dry fruits can cause a number of harms to the body and therefore, must be used in a balanced way. This article is based on healthy and unhealthy effects of dry fruits and their use in diabetes mellitus.

Keywords: KiDry fruits, Diabetes mellitus

INTRODUCTION

Dried fruit is a type of fruit that is dehydrated through removal of its water content. This removal of water can be caused by several ways, through sun drying or use of special dehydrators and dryers. This process produces a shrunken, energy rich fruit full of essential nutrients [1]. Dried fruit is full of vital nutrients in a balanced way with increased bio-availability [2]. Dry fruits contain a lot of medicinal properties due to vast amount of nutrients present in them [3]. It is said that eating something foolishly is never appreciated and same also applies to eating dry fruits. They can be comprised of healthy diet, but the person eating them should know every fact about them [4]. I am a diabetic patient-Can I eat dry fruits? There is plenty of literature present on dry fruits but it is all confusing and conflicting. This article will highlight important points about dry fruit, their harmful effects on health and their association with diabetes mellitus.

HEALTH RELATED BENEFITS OF DRY FRUITS

Although expensive, their healthy advantages make them worth their price [2]. They contain minerals, vitamins, and enzymes along with polyphenols, substances with high antioxidant activity and gives fruit its natural colour. A single piece of it has an equal amount of nutrients and by weight, has up to 3.5 times the fiber, minerals, and vitamins [5]. The polyphenol antioxidants present in them improves flow of blood, helps maintain digestive system, decrease oxidative stress, and decrease risk of many diseases. They contain low fat, sodium or cholesterol and can also be used to sweeten food without adding refined sugar [6]. Dry fruits especially almond, increase haemoglobin content of the blood and help to form new blood cells. They maintain high energy levels throughout the day and can also provide flexibility to blood vessel. Dry fruits also help to relieve constipation. Almonds, dates, walnuts, raisins, and pistachios are prominent among other dry fruits in relieving constipation due to their high fiber content and natural laxative effects, improving our digestive system. Another benefit of dry fruits is their blood cholesterol lowering effect. Pistachios, almonds, cashews, and raisin protect from dyslipidaemias and improve circulation of blood. A well-known and prominent advantage of eating dry fruits is there role in prevention of cancer. According to a study, almonds have a protective role in breast cancer. Many dry fruits contain antioxidants which play significant role in preventing cancer development. When it comes to heart, dry fruits are the best. Cashews contain mono saturated fat

promoting cardiovascular health. Pistachios prevent heart disease due to high content of vitamin B6. Walnuts has omega 6 which prevents development of arrhythmias. Dates prevent formation of atherosclerosis, a major cause of stoke and myocardial infarction. Another healthy effect is their nutrient density. Other beneficial effects of dry fruits include prevention of hair loss, slowing of aging, protects body organs, control blood pressure, diabetes, weight, and the list goes on [7].

UNHEALTHY EFFECTS OF DRY FRUITS

As mentioned above, there are countless benefits of eating dry fruits. But intake of dry fruits should be restricted as too much of anything can be harmful and can lead to unwanted effects. Some dry fruit are coated with sugar and syrup before drying to make them sweeter. These are referred to as candied fruit. These fruits should be avoided due to their harmful effects in causing heart disease, obesity and even cancer [4]. As dry fruits contain fiber, too much dry fruits can cause increased intake of fiber which can cause abdominal cramps, gas, bloating, constipation and even diarrhoea. Excess intake of dry fruit is also responsible for weight gain due to excess calories contained in it. Some dry fruits contain natural fruit sugar in the form of fructose; others have artificial sugar added before drying. Both if taken in excess can cause tooth decay due to the fact that sugar gets coated on the tooth accelerating the process. Some Dry fruits especially ones with sugar coating have high glycaemic index causing immediate hyperglycaemia and person feels energized. But once there is an energy peak, blood sugar drops quickly experiencing a sugar crash or intense fatigue. Sometimes, preservatives called sulfatides are added to dry fruits which prevent their discoloration. These can cause cramps, rashes on skin and asthmatic attack due to allergic process. Finally, improper handling and storage can lead to contamination with fungus, aflatoxins and other toxins which can cause severe side effects [8].

DRY FRUITS AND DIABETES

When someone gets diagnosed with diabetes, the very first step from that moment is to know what foods should be eaten and what shouldn't. While without any doubt foods with high amounts of fat and sugar are unacceptable, some foods are beneficial to eat for diabetics. If diagnosed, a diabetic can eat dried fruits for nutrients like fiber, minerals, vitamins, and oxidants. However, this intake should not be too much as dry fruits contains higher amount of sugars as compared to other forms of fruits due to process of dehydration [9].

I am a diabetic patient-Can I eat dry fruits? This is the question frequently asked by many diabetic patients. The literature regarding this topic is very vast, but it's kind of complicated and confusing. A diabetic patient can eat dried fruit but not in excess. A typical 1/4 cup comprise of one serving of dried fruit which is equal to 15 grams of carbohydrate or 1 serving. This can be included in daily meal plan as fruit alternative provided no added sugar is used. Due to dehydration, dry fruits are naturally higher in sugar per gram condensed in small volume. While eating dried fruit, added sugar is very unnecessary especially if a person is diabetic. As recommended by American Diabetic Association (ADA), sweets should be eaten only on special occasions. American Diabetes Association also says that a diabetic person can have 45 grams to 60 grams of carbohydrates per day. This is equal to 3-4 carbohydrate servings per day. So, every diabetic should consult his/her health care provider to devise a diabetic friendly meal plan [10].

Different dry fruits have different glycaemic index. A glycaemic index is defined as how blood glucose levels are affected by a particular food. It measures a person's response to carbohydrate containing food compared to same response obtained from either white bread or glucose. Glycaemic index ranges from high (>70), moderate (56-69) or low (<55). Dry fruits containing low glycaemic index are of best choice as they have nearly insignificant impact on blood sugar and are relatively healthy [11]. The glycaemic index of some common dried fruits includes dates-62, dried apples-29, dried apricots-30, dried peaches-35, dried plums-29, figs-61, raisin-59, prunes-38. About 22% to 51% of this sugar is fructose which can cause negative health effects weight gain, heart disease, diabetes if taken in excess. Low glycaemic fruits include prunes, dried apples, apricots, dried peaches, and dried plums. Figs are considered fruits with medium glycaemic index. Dates or raisins should be limited in diet due to high glycaemic load [12].

A common side effect of diabetes is hypoglycaemia that is low blood sugar levels especially if person is on insulin. To prevent this, diabetics are advised to carry a sweet or carbohydrate snack with them at all time to prevent this. According to ADA, 2 table spoons of raisins are enough to treat hypoglycaemia because raisins are higher in sugar than others. Other dry fruits can also be used [12].

Fruits like cherry, pineapples as well as avocado and papaya should be avoided by diabetic patients. Dry plums, dates,

raisins should be consumed in moderate amounts per day. However, dried pears, apples and currants can be used as much as desired. These are perfect substitute of fresh fruits and can be a pleasant meal for diabetics. Pear is considered a healthy fruit and highly recommended by diabetologists across the globe. It is due to presence of unique volatile oils and bio active substances that fight against facets that effect organisms. The main reason dry fruits work is due to the fact they give a quick glucose spike as compare to whole grain and also due to their dried nature which makes that quick response manageable [13].

NUTS AND DIABETIC: A HEALTHY COMBINATION

Nuts are considered very nutritious when it comes to diabetes. In fact, a whole discussion is needed for this topic. Nuts may come in small volumes but they contain a power house filled with essential nutrients. American Diabetic Association ranks nuts top on list of foods that can be included in diabetic diet plan [14]. They are perfect option for diabetics as they contain protein, fiber, minerals, and proteins. Fibers and proteins cause sugars to release more slowly by slowing the process of digestion. Research has shown that risk of Type 2 diabetes decreases with magnesium intake. A major complication of diabetes is cardiovascular disease. According to diabetologists, walnuts can help decrease cardiac problems. They contain alpha linoleic acid, omega 3 fatty acids and polyunsaturated fatty acids that are cardio protective hence highly suggestive for diabetics. After meal increase in blood sugar is the main reason poor diabetes management and cardiovascular disease. Reason being cholesterol free radicals in blood and due to this fact, low glycaemic index foods are recommended. Almonds, according to journal of nutrition, decrease after meal rise in blood sugar and also provide antioxidants decreasing oxidative stress. According to Jones AR, Kendall CW, "almonds help a great deal in lowering glycaemic index of a meal resulting in low blood sugar levels". Eating nuts in combination with other dried fruits is a perfect meal for diabetics as they slow digestion and release of sugar fruit into blood. According to a randomized controlled trial conducted by Diabetes Foundation (India) and national diabetes, obesity, and cholesterol foundation (N-DOC), Pistachios, if consumed daily helps decrease chances of getting diabetes and CVD. Lastly, it is highly recommended to raw or unsalted nuts as salt and oil can increase calories and decrease their nutritious value making them useless [15] (Table 1).

Table 1 Nutritional value of different dry fruits and nuts [16-18]

Dry fruits	Quantity	Calories	Proteins	CHO	Fats	Fiber	CAL	Iron	Potassium	GI
Raisins	½ cup	217	2.2 g	57 g	0.3 g	2.7 g	36 mg	1.4 g	543 mg	54-66
Apricots	½ cup	157	2.2 g	41 g	0.3 g	4.7 g	36 mg	1.73 mg	755 mg	30-32
Prunes	½ cup	209	2.0 g	56 g	0.3 g	6.2 g	37 mg	0.8 mg	637 mg	29
Figs	½ cup	186	2.5 g	48 g	0.7 g	7.3 g	121 mg	1.5 mg	507 mg	61
Almonds	1 cup	529	20 g	20 g	45 g	11 g	242.9 mg	3.7 mg	648.6 mg	0
Cashews	100 g	553	18 g	30 g	44 g	3.3 g	37 mg	6.7 mg	660 mg	22
Peaches	100 g	39	0.9 g	10 g	0.3 g	1.5 g	6 mg	0.3 mg	190 mg	35
Walnuts	100 g	654	15 g	14 g	65 g	7 g	98 mg	2.9 mg	441 mg	0
Peanuts	100 g	567	26 g	16 g	49 g	9 g	92 mg	4.6 mg	705 mg	13
Apples	100 g	52	0.3 g	14 g	0.2 g	2.4 g	6 mg	0.1 mg	107 mg	29
Dates	100 mg	282	2.5 g	75 g	0.4 g	8 g	39 mg	1 mg	656 mg	63
Pistachios	100 g	562	20 g	28 g	45 g	10 g	105 mg	3.9 mg	1025 mg	15

CONCLUSION

To sum up, dry fruits like every other food contain both healthy and harmful effects. Although they are harmful in some aspect their benefits outweigh their risk. Therefore, physicians should advice their patients for using dry fruits in their diet especially those who are suffering from diabetes mellitus.

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