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Healthy Pancake

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- In the name of God, the Most Gracious, the Most Merciful. Praise be to God, who thanks to him has endowed us with knowledge and made it a light and a guiding light for us, yet we present this research to all who are interested in science and to our fellow students and to all of us who bring them together the bond of science and to all teachers, scholars and readers, and this research is entitled and he talks about
- We have been keen in this research to reconcile all the elements and some factors that are difficult to match together, where hours and minutes are among the factors that must be taken into account as we divide time between the materials that make up the curriculum that is taught.
- We have compiled these topics to achieve the ultimate goal of communicating science and knowledge, and we hope that professors and readers will look at each department and scientific subject with a kind of generality, as well as they should avoid looking at it partially.
- We hope that professors and students will not overlook us with their constructive and purposeful observations and suggestions to correct any mistakes so that we try to avoid them later and try to develop from ourselves as well as we correct the mistakes that we make first.
- We hope from God Almighty that His grace be accomplished upon us, his knowledge sustains us, protects us and protects you from all evil, and saves our great nation from enemies and guides us to the path of goodness, truth, values, and virtuous morals, and we also ask God to write success and success to all that He loves and satisfies.

- and we hope that you will be well-deserved and that it will be a familiar research with all the data and information required to be covered. We will put in your hands this research and we hope that it will be at the desired level and we hope from God Almighty that we did not neglect or fail to write and compile this research, and we did not limit itself to the various elements and goals it contains.
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Content

Introduction

Eat breakfast like a king, lunch like a prince, and dinner like a pauper

Introduction

- A pancake (or hotcake, griddlecake), or flapjack, not to be confused with oat bar flapjacks) is a flat cake, often thin and round, prepared from a starch-based batter that may contain eggs, milk and butter and cooked on a hot surface such as a griddle or frying pan, often frying with oil or butter. Archaeological evidence suggests that pancakes were probably the earliest and most widespread cereal food eaten in prehistoric societies.
- When potato is used as a major portion of the batter, the result is a potato pancake. Commercially prepared pancake mixes are available in some countries. When buttermilk is used in place of or in addition to milk, the pancake develops a tart flavor and becomes known as a buttermilk pancake, which is common in Scotland and the US. Buckwheat flour can be used in a pancake batter, making for a type of buckwheat pancake, a category that includes Blini, Kaletez, Ploye, and Memil-buchimgae.
- Pancakes may be served at any time of the day with a variety of toppings or fillings but in America they are typically considered a breakfast food. Pancakes serve a similar function to waffles. In Britain and the Commonwealth, they are associated with Shrove Tuesday, commonly known as “Pancake Day”, when, historically, perishable ingredients had to be used up before the fasting period of Lent.

1. Africa

The shape of the pancake in Africia

In Eritrea and Ethiopia

injera are usually served with one or more stews **known as wat or with salads (especially, for instance, during periods of Ethiopian Orthodox fasting)** or with other injera (injera fir fir). The right hand is used to tear small pieces from the injera to use to pick up and eat the stews or salads. The injera under these stews soaks up juices and flavors and, after the stews and salads are finished, is also consumed. Injera thus acts simultaneously as food, eating utensil and plate. When the "tablecloth" formed by the injera is finished, the meal is over.
Lahoh is a pancake-like bread originating in **Somalia, Djibouti and Yemen. It is often eaten along with honey, ghee and tea. During lunch, lahoh is sometimes consumed with curry, soup or stew.**

Kenya

In Kenya, pancakes are eaten for breakfast as an alternative to bread. They are served **plain with the sugar already added to the batter to sweeten them**. Kenyan pancakes are similar to English pancakes and French crepes.

South Africa

A "pancake" in South Africa is a crêpe. In Afrikaans, it is known as a **pannekoek (plural pannekoeke)** and, traditionally, is prepared on gas stoves and eaten on wet and cold days. Pannekoeke are usually **served with cinnamon-flavoured sugar (and, sometimes, lemon juice)** that is either allowed to dissolve into and soften them or, if their crispy texture is to be retained, eaten immediately. They are a staple at Dutch Reformed Church fêtes. **Plaatkoekies ("flapjacks", or lit. "plate cookies") are American-style "silver dollar" pancakes**

Uganda

In Uganda, pancakes are locally **made with bananas** (one of the staple foods of the country) and usually served as a **breakfast or as a snack option.**

2. East Asia

The shape of the pancake in East Asia

China

Chinese pancakes may be either **savory or sweet** and are generally **made with dough rather than batter**. The dough mostly consists of water, flour, and vegetable oil. The dish can be served as a side, usually alongside duck, or as a snack, **topped with scallions along with hot and sour sauce.**

Japan

In Japan, okonomiyaki are **made from flour, egg, cabbage and a choice of ingredients**. Oyaki are pancakes often stuffed with anko, eggplant, or nozawana. Dorayaki are a sort of sandwich made from Western-style pancakes and anko. **Sweet crepes are also very popular.**

Korea

In Korea, pancakes **include jeon, pajeon, bindaetteok, kimchijeon, and hotteok.** These may be served during all times of the day as side dishes or just snacks. Variants of the dish **use the batter of the pancake to make deep fried vegetables, meat, or fish.**

3. South Asia

The shape of the pancake in South Asia

India

India has many styles of pancake. Variations range from their taste to the main ingredient used. **All are made without the use of added raising agents.**

Pancakes prepared using a north Indian cooking style **are known as cheela. Sweet cheela are made using sugar or jaggery with a wheat flour-based batter**. North Indian salty pancakes are made **using batter prepared from gram flour or green gram paste** (moong daal) and are sometimes garnished with paneer, a cottage-style cheese.

Dosa, appam, neer dosa and uttapam are pancakes **made in a south Indian cooking style. They are prepared by fermenting rice batter and split-skinned urad bean** (black lentil) blended with water. Meetha pooda – sweet pancakes often eaten with pickles and chutney – are a common breakfast food item in the Punjab. Most of the pitha in Assam are types of pancakes served on occasions such as Bihu festivals. **The Bengali semi-sweet pancake pati-shapta is stuffed with grated coconut or thickened milk.**

In Western India, t**he multi-grain thalipeeth is popular. In Goa, a traditional crêpe-like pancake known as alebele or alle belle is eaten at tea-time**. It is usually filled with jaggery and coconut.

In Eastern India, malpuas are sometimes prepared in the form of pancakes.

In some regions of **Middle India, thin green Cheelas are made with ginger or garlic leaves' paste, and rice flour batter**. Other ingredients included are salt, cummin seeds, green chili, oil, curry leaves and coriander leaves.

Nepal

In Nepal, the Newar have a **savoury rice pancake called chataamari** cooked with meat or eggs on top. **This dish is also known as the Newari Pizza**, as it is served and eaten similarly to American pizza. Besides being **served with meat or eggs**, it can also be served plain.

Regional Varieties

Pakistan

In Pakistani cuisine, **rishiki is a pancake, slightly thicker than a crepe**, which is made from **whole wheat flour**, water **and eggs and usually served with honey**. It is widely consumed in the far north and is a staple of Chitrali cuisine.

Indonesia

Pancake in Indonesia **called as panekuk.** The Indonesian pancake serabi is made from **rice flour and coconut milk.** The dish is often served with kinca, a thick, brown-colored coconut sugar syrup. **Other toppings may include sugar, ground peanuts, sliced bananas, jackfruit, and other fruits, and chocolate. Other vari tions include cheddar cheese, corned beef, shredded chicken, and sausage.**

Other types of pancakes in Indonesia are burgo, dadar gulung, kue ape, kue apem, kue cubit, kue cucur, kue terang bulan, laklak, murtabak, pannenkoek, poffertjes, roti canai, and roti jala.

Malaysia and Singapore

The traditional Malay pancake in Malaysia and Singapore is **called Lempeng Kelapa**. Cooked very **similarly to an American or Canadian style pancake** albeit without a rising agent, it is a savoury pancake usually **served during the breakfast hours with fish curry, coconut sticky rice, dried fish, rendang, or sambal.**

Myanmar

Bein Mont, The pancake is baked **in a rice flour batter immersed in jaggery**, coconut shavings, and garnished with sesame seeds, peanuts, and poppy seeds.

Philippines

Salukara, a rice pancake **made from glutinous rice, eggs, and coconut milk**. The batter is placed in a clay pot lined with banana leaves or greased with oil and is baked over hot coals. **Salukara is a subtype of bibingka (Philippine baked rice cakes). Panyalam, a similar rice pancake from Mindanao, is deep-fried rather than baked**

Traditional include pudpod (smoked fish flake pancakes), okoy (a pancake made of battered shrimp, pump-kin, or sweet potatoes).

4. Europe

The shape of the pancake in Europe

Austria, Czech Republic, and Romania, Slovakia, and former Yugoslavia

In Austria, the Czech Republic, and Slovakia, pancakes are called palatschinke, palačinka, and palacinka, respectively.

Kaiserschmarrn is an **Austrian pancake including raisins, almonds, apple jam, or small pieces of apple**, split into pieces, and sprinkled with powdered sugar.

In Romania, they are called clătită.

In countries of former **Yugoslavia, they are called palačinka**. These pancakes are thin and filled with apricot, plum, lingonberry, apple or strawberry jam, chocolate sauce, or hazelnut spread.

Greece

In Greece, pancakes are **called** Τηγανίτες **(Tēganitēs) (From the ancient Greek** Τηγανίτης **Tēganitēs or** Τηγανίας **from** τάγηνον **tagēnon meaning frying pan)** or Ζυμαράκια (Zimarakia). Τηγανίτες are small pancakes usually made from **water and flour,** served with honey, sugar or figs. The ancient Greeks used water, wheat flour, olive oil, and honey to make them.

Belarus, Russia, Ukraine

In Belarus, Russia, Ukraine, pancakes may be breakfast food, appetizer, maincourse, dessert.

Blini (Russian) and mlynci (Ukrainian) **thicker than crêpes**, made **from wheat or buckwheat flour, butter, eggs, and milk, with yeast added to the batter.**

Denmark

Traditional Danish pancakes **made in a distinctive spherical shape**. cooked on the stovetop by baking in a special cast iron pan with several hemispherical indentations. **It's ot sweet themselves but is traditionally served dipped in raspberry, strawberry, lingonberry, or blackberry jam and sprinkled with powdered sugar.**

Finland

In Finland, pancakes are **usually eaten as dessert** with whipped cream or pancake-jam, sugar, or vanilla ice cream. In Finnish, lettu, and pannukakku having a structurally **closer resemblance to a hotcake and is baked in an oven instead of using a frying pan.**

Regional Varieties

France, Belgium, Italy, Portugal, Switzerland (and Latin America)

Crêpes, popular in France, Belgium, Switzerland, and Portugal, **are made from flour, milk, and eggs**. They are thin pancakes and are **served with a sweet (fruit, ice cream, jam, chocolate spread, powdered sugar) or savory filling (cheese, seafood, spinach).**

Crêpes are popular in many South American countries such as Argentina, Brazil, and Chile. **They are consumed with sweet fillings (marmalade, dulce de leche) or with salty fillings (ground meat (Brazil)**, vegetables, tomato sauce, cheese).

They have also become popular East Asian countries.

Germany

German pancakes are **known as Pfannkuchen**. They are generally thicker than French-style crêpes and usually **served with sweet or, occasionally, savory fillings.** Usage of a leavening agent or yeast is uncommon. Fried apple rings covered by pancake dough and a a thick but light caramelized pancake, is usually split into pieces, filled with fruits or nuts, sprinkled with powdered sugar and served with a fruit sauce.

In Swabia, sliced pancake strips (flädle) are often served in soup.

England

English pancakes have three key ingredients: plain **flour, eggs, and milk, used water instead of milk, and added sweet spices.** The batter is runny and forms a thin layer on the bottom of the frying pan when the pan is tilted. It may form some bubbles during cooking, which results in a pale **pancake with dark spots** where the bubbles were, but the pancake does not rise. **English pancakes are similar to French crêpes and Italian** crespelle. **They may be eaten as a sweet dessert with the traditional topping of lemon juice and sugar**, drizzled with golden syrup, or wrapped around savory stuffings and eaten as a main course.

A variation of the pancake is the crumpet, **made from a batter leavened with yeast (or with both yeast and baking powder)** and fried in butter to produce a slightly raised flat cake.

Wales

Welsh pancakes, **known as crempog, froes**, and other names, vary considerably. Generally, they are thick and layered on top of each other to form a tall mock-cake, **but some are very much like American pancakes**, others may be **made with yeast called oatmeal.**

Greek pancakes are called tiganites (τηγανίτες, from the ancient Greek τηγανίτης) and are popular across Greece and Cyprus. **They are slightly thicker than crêpes and can be sweet or savory. Their main ingredients are flour, olive oil or butter, milk, and eggs.** They are usually drizzled with honey and cinnamon and sometimes topped with cheese, nuts, fruits, or vegetables.

Scotland

In parts of Scotland, they are also referred to as drop scones or dropped scones. **They are made from flour, eggs, sugar, buttermilk or milk, salt,** bicarbonate of soda and cream of tartar.. They can be **served with jam and cream or just with butter.**

Regional Varieties

Hungary

In Hungary, pancakes are **known as pallescent are made from flour, milk or soda water, sugar, and eggs. Sweet wine may be added to the batter.** The filling is usually jam, sugared and ground walnuts or poppy seeds, sugared cottage cheese, sugared cocoa, or cinnamon powder, but meat and mushroom fillings are also used. Gundel palacsinta is a **Hungarian pancake stuffed with walnuts, zest, raisins, and rum that is served in chocolate sauce and is often flambéed.**

Hungarian pancakes are served as a main dish or as a dessert.

Iceland

Icelandic crepe-like **pancakes are called pönnukaka (pl. pönnukökur)**, whereas **smaller, thicker and denser pancakes resembling North American pancakes are called lumma or skonsa**. The pancakes are usually a bit browner than traditional Swedish ones. Pönnukökur is usually cooked on a special Icelandic pancake pan, which is made to get the pancake as thin as possible, which is traditionally never washed or rinsed, not even with water. **Pönnukökur are traditionally served rolled up with sugar or folded with jam and whipped cream**, but **if eaten at a café they might contain ice cream instead.**

In Iceland, North American-style pancakes are cut in half and used as sandwich bread, similar to Icelandic flatbread.

Netherlands

In the Netherlands, pancakes are **known as pannenkoeken and are mostly eaten at lunch and dinner time**. Pancake restaurants are popular with families and **serve many sweet, savory, and stuffed varieties.** The batter is egg-based and fillings include such items as sliced apples, cheese, ham, bacon, and candied ginger, alone or in combination.

Poffertjes are another Dutch quick bread, similar to American pancakes but sweeter and much smaller. Made in a specially dimpled copper or cast iron pan, they are flipped once with a fork.

Poland

In Poland, thin crêpe-style pancakes are **called naleshniki**. They are usually rolled and **served with a variety of savory or sweet fillings as a main dish or a dessert.**

Sweet fillings include fresh fruits, jams, and soft white cheese with sugar.

Savory fillings include fried vegetables, fried chicken, minced meat, spinach, and a variety of added ingredients such as potatoes, mushrooms, cabbage.

Spain

Spanish pancakes are **called frixuelos or filloas**. They are **made from flour, milk, and eggs.** They are thin and are usually **served with a large amount of sugar or honey.**

Regional Varieties

Sweden, Norway

Nordic pancakes **are similar to the French-style crêpes**. In some Nordic countries, **they are served with jam or fruit, especially lingonberries as a dessert with a variety of savory fillings**. Traditional Swedish variations can be exotic. **Besides the usual thin pancakes, called pannkakor**, which resemble the French crêpes and, **often served with whipped cream and jam.**

the Swedish cuisine also has plättar — **very small pancakes, which resemble tiny English pancakes,**

Ugnspannkaka (oven pancake), which is very thick and resembles German pancakes and is baked in the oven.

Potato pancakes (raggmunk) contain shredded raw potato and may contain other vegetable

Egg cake, which is almost like an ordinary Swedish pancake but it is a lot thicker and also much more difficult to make due to the risk of burning it. It is made in a frying pan, is about 1½ to 2 inches thick, and is served with lingonberries and bacon.

5. North America

The shape of the pancake in North America

Guatemala

panqueques. They are made with the **same ingredients as American pancakes. The toppings are usually fruits and honey.** They are a very popular breakfast meal in Guatemala.

Mexico

Hotcakes are often **made with cornmeal, as well as, or instead of wheat flour.**

Hotcakes are popular breakfast items at restaurants throughout the country

hotcake topped with different sauces such as condensed milk, fruit jam, or sweet goat milk.

The United States and Canada

American and Canadian pancakes are **usually served at breakfast, in a stack of two or three, topped with real or artificial maple syrup and butter. They are often served with other items such as, toast, eggs, or sausage.**

Other popular topping alternatives **include jam, peanut butter, nuts, fruit, honey, powdered sugar, whipped cream, cane syrup, cinnamon and sugar, and molasses.** Besides, when a pancake is occasionally **served as a dessert, toppings such as ice cream, chocolate syrup, and various fruits are often used**.

The thick batter contains eggs, flour, milk, and a leavening agent such as baking powder. The **batter can have ingredients such as buttermilk, blueberries, strawberries, bananas, apples, chocolate chips, cheese, or sugar added. Spices such as cinnamon, vanilla, and nutmeg can also be used.** Yogurt may be used to give the pancakes a relatively moist consistency.

Australia and New Zealand

In Australia and New Zealand, small pancakes (about 75 mm in diameter) **known as pikelets are also eaten.** They are **made with milk, self-rising flour, eggs, and a small amount of icing sugar.**

6. South America

The shape of the pancake in South America

Brazil

Tapioca (Portuguese pronunciation: Biju are cassava (manioc) starch flour unleavened pancakes. They are slightly thicker than crêpes.

Tapioca flour must be moistened and strained through a sieve to become a coarse flour. The heat of an ungreased hot griddle or pan makes the starchy grains fuse into a flatbread which resembles a grainy pancake. **Popular tapioca toppings include molten butter and dried, shredded coconut.**

Colombia and Venezuela

Cachapas are corn pancakes, popular in Venezuelan cuisine.

In Colombia, a similar preparation to cachapas is sweetcorn arepa.

The Aim Of Project

Eat breakfast like a king, lunch like a prince, and dinner like a pauper

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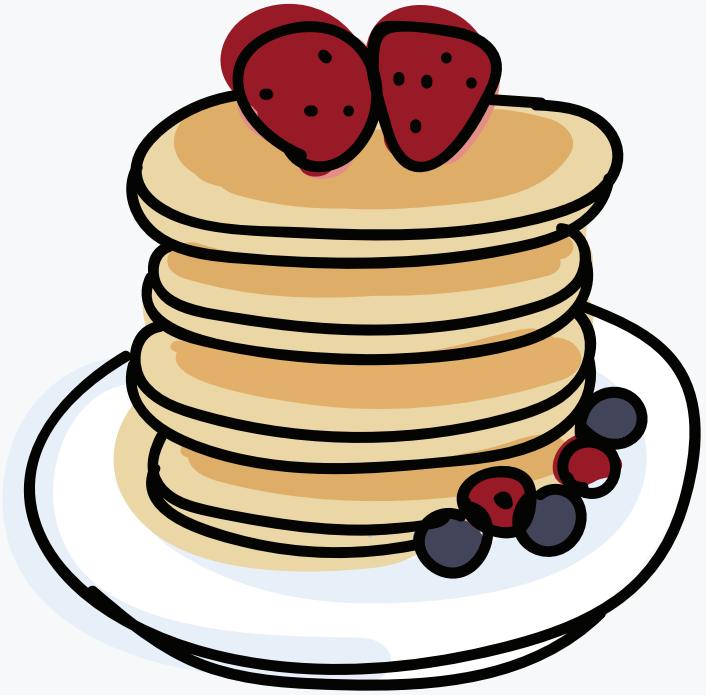
The Aim Of Project

What will the project talk about?

- In this project, we will talk about many important points that pertain to the field of the pancake industry, its various forms, and its content of nutrients that are on humans, whether in the negative or in the affirmative.
- The pancake industry is a wide and widespread field in the world with different cultures and preferences. Perhaps what distinguishes the pancake is its ability to be a product of a very large diversity, as the pancake has many types and multiple flavors and can be developed according to the preferences of people and perhaps this is what makes it Food with great susceptibility to people and fulfills the wide desire for it and satisfies all tastes
- In this project, we will deal in detail with the components of the pancake industry, the method of its manufacture, and its content of nutritional value in detail.
- **We will talk about making 5 types of pancakes and they are:**
    1. Sugar pancake regular
    2. Low calorie pancakes with fructose sugar and skims milk
    3. Quinoa low-calorie pancake
    4. Cheese pancake
    5. Pancake with cheese and quinoa
- We will talk about what distinguishes each type of them separately and the components of manufacturing and the physiological effect on the body of the teeth and the benefits and harms.



PANCAKE

Pancakes don’t make the world go ‘round Pancakes are what makes the ride worthwhile.

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Definition

What are the Pancake ?

The pancake is a thin flat cake made from batter and fried on a griddle or in a skillet. The batter usually consists of eggs, flour, milk or water, and oil or melted butter. The recipe for the batter often varies to include such ingredients as buttermilk, sugar, and sourdough starter. Whether they are called pancakes, griddlecakes, flapjacks, wheat cakes, or flannel cakes, they are among our most popular food choices. Pancakes, in one form or another, are found in almost every culture

A pancake (or hotcake, griddlecake, or flapjack, not to be confused with oat bar flapjacks) is a flat cake, often thin and round, prepared from a starch-based batter that may contain eggs, milk, and butter and cooked on a hot surface such as a griddle or frying pan, often frying with oil or butter. Archaeological evidence suggests that pancakes were probably the earliest and most widespread cereal food eaten in prehistoric societies.

The pancake's shape and structure vary worldwide. In England, pancakes are often unleavened and resemble a crêpe. In North America, a leavening agent is used (typically baking powder) creating a thick fluffy pancake. A crêpe is a thin Breton pancake of French origin cooked on one or both sides in a special pan or crepe maker to achieve a lacelike network of fine bubbles. A well-known variation originating from southeast Europe is a palačinke, a thin moist pancake fried on both sides and filled with jam, cream cheese, chocolate, or ground walnuts, but many other fillings—sweet or savory—can also be used.

When the potato is used as a major portion of the batter, the result is a potato pancake. Commercially prepared pancake mixes are available in some countries. When buttermilk is used in place of or in addition to milk, the pancake develops a tart flavor and becomes known as a buttermilk pancake, which is common in Scotland and the US. Buckwheat flour can be used in a pancake batter, making for a type of buckwheat pancake, a category that includes Blini, Kaletez, Ploy, and Memil-buchimgae.

Pancakes may be served at any time of the day with a variety of toppings or fillings but in America, they are typically considered breakfast food. Pancakes serve a similar function to waffles. In Britain and the Commonwealth, they are associated with Shrove Tuesday, commonly known as "Pancake Day', when, historically, perishable ingredients had to be used up before the fasting period of Lent.

History

History of the pancake industry

The oldest form of bread is believed to have been a type of unleavened pancake. It has survived throughout history as a distinct food. In earlier times, English pancakes were sometimes moistened with ale, which had a leavening effect when the pancake was fried. Today, yeast, baking powder or soda are sometimes added to lighten the cake

Availability

Is pancake easy to get?

Pancakes are found on most restaurant breakfast menus across the United States and in most all-purpose cookbooks. There are numerous convenience commercial mixes available in grocery stores that require only the addition of liquid and eggs. They can also be found fully cooked and ready for the microwave in the frozen section of the grocery store. "Silver-dollar' sized pancakes are often popular in restaurants, but pancakes can be big enough to cover an entire plate. Pancakes are traditionally eaten with butter and syrup or powdered sugar. They can also be spread with sugar, fruit mixture, or peanut butter--rolled and eaten by hand.

Storage

How is pancake stored?

Pancakes should be served immediately after cooking. It is not recommended that pancakes be reheated as they can become tough. However, if necessary, they can be frozen and reheated in the microwave on low heat or you can pop them into your toaster.

Nutritional value

How will eating pancake help you?

The 2005 Dietary Guidelines for Americans recommend eating 5 to 10 ounces of grain foods daily (depending on age, gender, and activity level), with half of them coming from whole grains. Pancakes are a part of that food group, which can be enriched or whole grain. Balance toppings wisely with your other food choices throughout the day. Sugar, jams, jellies, fruits, and fruit purees have only four calories per gram; butter and margarine have nine. One 1-ounce pancake (about the size of a slice of bread, made from enriched flour) from a typical home recipe provides approximately: 60 calories, 2 g protein, 9 g carbohydrates, 2 g fat, 16 mg cholesterol, 0 g fiber, 0 mg iron, and 115 mg sodium.

Pancakes with traditional toppings like butter and syrup provide significant calories, fat, and especially carbohydrates. Since pancakes usually do not provide any fiber, you'll consume 90 grams of carbohydrate and 90 carbs when you indulge in this meal.

But your total nutrition numbers will depend on your serving size. The numbers on the label (shown) only apply to a single serving of pancakes which is just two medium pancakes. Many hearty eaters consume 3-4 medium pancakes and double the amount of butter and syrup as well. If that sounds like your typical pancake breakfast, you'll consume over 1000 calories when you indulge. And if you add bacon or sausage, the number can skyrocket.

If you're interested in the number of pancake calories alone (no syrup or butter), it may depend on whether you make them from scratch or whether you buy a pre-packaged mix.

The following nutrition information is provided for two pancakes (232g) with butter and syrup.

Type	Quantity	Type	Quantity
Calories	520	Fibre	0g
Fat	14g	Sugars	0g
Sodium	1104mg	Protein	8.3g
Carbohydrates	90.9g		

Single Pancake Nutrition Facts (According to USDA Data)

- **One small pancake** (3’ across) made from scratch provides 30 calories, 1 gram of protein, 5 grams of carbohydrate, 0 grams of fibers and 1 gram of sugar
- **One medium pancake** (5’ across) made from scratch provides 93 calories, 2 grams of protein, 15 grams of carbohydrate, 0 grams of fibers and 2 grams of sugar
- **One large pancake** (7’ across) made from scratch provides 186 calories, 4 grams of protein, 30 grams of carbohydrate, 1 gram of fibers, and 5 grams of sugar.
- So how do the pancake mixes stack up? There is not much variation from brand to brand. And even different varieties provide similar pancake nutrition. So, if you choose buttermilk, wheat, or even a complete pancake mix, you’ll probably consume comparable calories and nutrients.

- **Are Pancakes Healthy?**
- Pancakes will boost your carbohydrate intake for the day. Your body uses carbohydrates as a primary source of fuel, so this nutrient is important. But most nutritionists suggest that you get your daily carbs from the healthiest sources. Pancakes usually don't fall into that category.
- Pancakes and pancake mixes are generally made from enriched flour. Enriched foods are those that have had nutrients added during the manufacturing process. In most cases, the nutrients (like vitamins and minerals) are stripped away and then some of them are added back in during processing.

- **So, are enriched foods bad for you?**
- Not necessarily, but when you eat enriched bread products you short-change yourself out of diet-friendly fiber and other nutrients. The enriched flour in pancakes along with the added sugar and syrup is likely to raise your blood sugar quickly and then leave you hungry shortly afterward.
- Health experts recommend that you limit or completely avoid foods with trans-fat.

▪ Chemical composition of Pancake

We first measured out both wet and dry ingredients to be used for our pancakes. According to the recipe, the ingredients include:

- Flouris the most basic ingredient required in a pancake and contains the chemical compounds of glutenin and gliadin, which when combined with water, forms gluten. Gluten is a protein mesh that traps the CO2 gas bubbles created by the baking powder. However, too much gluten will cause the pancakes to be tough. Flour was also sifted to ensure that the ingredients can be mixed evenly as well.
- **Baking powder:** is a leavener used to create the light and fluffy texture of pancakes. A leavener is a powdered acid and base which reacts together when heated to produce CO2. The batter traps the gas and when cooking, the batter expands and solidifies around the gas bubbles, which explains the holes one sees when the pancake is cooking/ being eaten! The more bubbles there are, the lighter, fluffier, and taller the pancakes would be.
- **Baking powder** can be replaced with buttermilk, an acidic mixture that also helps to create the height in fluffy pancakes. Harmless bacteria consume sugar added to the pancake mixture, releasing lactic acid. The lactic acid reacts with baking soda (base), producing carbon dioxide gas.
- **Another alternative** to buttermilk would be to add one tbsp. of lemon juice: one cup of milk, which provides the acid required for the reaction with baking soda to produce the CO2 gas bubble. Adding more baking soda will increase Millard's reaction as well.

- **Salt & Sugar:** are added for taste purposes. Although sugar is also added when buttermilk is used to promote the acid-base reaction between buttermilk and baking soda.
- **Eggs & Milk:** were added to facilitate the binding of the gluten molecules into a network by making them more flexible. Eggs also help to increase the amount of protein in the mixture and milk, being a liquid, thins out the batter.
- Butter: is used not only to give pancakes the buttery flavor from the chemical compound diacetyl found in butter and promote Millard reaction, but it is also used to add some fat into the pancake batter to slow down the gluten formation, preventing your pancakes from becoming too tough.
- **Many other recipes** out there use buttermilk instead which contains the chemical compound diacetyl, also found in butter, to replicate the buttery flavor in pancakes.
- **Vanilla extract:** contains vanillin, a primary chemical compound found in the extract of vanilla beans which enhances the flavor of the pancakes.
- **The batter shouldn't be left out** for too long as well to prevent the carbon dioxide gas from escaping. Also, it's been found that over-mixing batter can make the pancakes tough too because mixing the batter increases gluten formation and too much gluten formed results in tough pancakes.

- **Millard Reaction**

1. A reaction combining heat, protein, and sugar that produces the delicious brown surface and aroma of food. This reaction happens more in a basic environment. Therefore, more baking soda increases the chances of Millard's reaction happening. Too much baking soda, however, will speed up the reaction too quickly and cause the food to have a burnt taste.
2. A little melted butter/ oil is said to improve Millard's reactions as well.

▪ Heat of Pan

1. The final factor of making pancakes is the heat of the pan. Since we were not instructed on the level of heat of the pan, we started off with a low heat which resulted in under-cooked pancakes like:
2. However, after we adjusted the heat to a higher one after, we managed to make rather decent pancakes. Curious about what was a decent heat for making pancakes from this experience, I went back to research and it turns out that there's no perfect temperature for cooking pancakes. Through research though, it has been suggested that the pan should be "hot enough for the pancake to brown in less than a minute, but not so hot that the batter "sets" when you put it on the pan before it has time to spread." Guess I'll try that out the next time I make my own pancakes.

▪ Nutrient Analysis of pancake

The Dietary Guidelines for Americans recommend consuming less than 10 percent of calories per day from saturated fat and less than 2,300 milligrams per day of sodium for a typical adult eating 2,000 calories daily. Recommended limits may be higher or lower depending on daily calorie consumption. Variations and substitutions will increase or decrease stated nutritional values. Nutritional information on this supplement is accurate as of the date of printing. Items listed may not be available at all restaurants.

Pancakes	Total Calories (cal)	Calories from Fat (fat cal)	Total Fat (g)	Sat Fat (g)	Trans Fat (g)	Cholest (mg)	Sodium (mg)	Total Carb (g)	Fiber (g)	Sugars (g)	Protein (g)
Pancakes											
(4) Belgian Chocolate Pancakes	1060	450	50	26	0	165	2090	140	10	62	21
(4) Cinn-A-Stack® Pancakes	860	250	28	10	0.5	75	1970	136	6	70	16
(4) Cupcake Pancakes	790	210	23	12	0	75	1800	131	4	61	16
(4) Double Blueberry Pancakes	620	150	17	6	0	70	1790	102	6	39	16
(4) English Sticky Toffee Pancakes	1020	360	40	20	1	165	2350	148	4	68	18
(4) Harvest Grain 'N Nut® Pancakes	990	450	51	11	0	140	1980	108	10	26	26
(4) Mexican Tres Leches Pancakes	680	230	25	12	0	110	1850	94	4	33	17
(4) New York Cheesecake Pancakes	920	320	35	16	1	165	2040	130	5	58	22
(3) Original Buttermilk Pancakes	430	160	17	7	0	75	1390	57	3	12	12
(5) Original Buttermilk Pancakes	670	210	24	8	0	110	2270	94	4	21	20
(4) Red Velvet Pancakes	680	150	17	6	0	75	1810	117	5	55	17
Rooty Tooty Fresh 'N Fruity® Pancakes											
(4) Buttermilk w/Whipped Topping	500	130	15	5	0	70	1770	77	4	18	16
Add Choice of Topping:											
Glazed Strawberries	50	0	0	0	0	0	10	13	1	11	0
Peaches	60	0	0	0	0	0	10	14	1	13	1
Raspberry	70	0	0	0	0	0	0	18	1	15	1
(4) Strawberry Banana Pancakes	660	140	15	5	0	70	1780	116	7	43	17
Build Your Pancake Combo											
Choice of Pancake Flavors:											
(2) Belgian Chocolate Pancakes	590	270	30	16	0	90	1070	77	5	35	11
(2) Cinn-A-Stack® Pancakes	490	140	16	6	0	40	1000	79	3	46	8
(2) Cupcake Pancakes	480	120	14	8	0	40	920	81	2	45	8
(2) Double Blueberry Pancakes	370	90	10	4.5	0	35	910	61	3	28	8
(2) English Sticky Toffee Pancakes	560	200	22	12	0	85	1220	81	2	39	9
(2) Harvest Grain 'N Nut® Pancakes	530	260	29	8	0	80	1020	54	5	13	13
(2) Mexican Tres Leches Pancakes	370	130	15	8	0	55	940	52	2	21	9
(2) New York Cheesecake Pancakes	500	170	19	9	0.5	80	1030	72	3	35	11
(2) Original Buttermilk Pancakes	310	130	14	6	0	60	950	38	2	8	8
(2) Red Velvet Pancakes	400	90	10	4.5	0	40	920	70	3	39	9
(2) Rooty Tooty Fresh 'N Fruity® Pancakes (w/o Fruit Topping)	270	80	9	3.5	0	35	880	39	2	9	8
Add Choice of Topping:											
Glazed Strawberries	50	0	0	0	0	0	10	13	1	11	0
Peaches	60	0	0	0	0	0	10	14	1	13	1
Raspberry	70	0	0	0	0	0	0	18	1	15	1
(2) Strawberry Banana Pancakes	380	80	9	4	0	35	900	68	4	29	9
Add Choice of Eggs:											
(2) Fried Eggs	170	110	12	4	0	390	160	1	0	0	13
(2) Hard or Soft Boiled Eggs	160	100	11	3.5	0	375	125	1	0	1	13
(2) Poached Eggs	130	80	8	2.5	0	325	260	1	0	0	11
(2) Scrambled Eggs	220	150	17	5	0	475	230	2	0	1	15
Add Choice of Bacon or Sausage:											
(2) Bacon	80	50	6	2	0	20	350	1	0	1	7
(2) Sausage	180	160	17	6	0	30	310	1	0	0	6
Hash Browns	280	160	18	3.5	0	0	430	28	2	1	3
Top it Off											
Banana Slices	20	0	0	0	0	0	0	5	1	3	0
Glazed Strawberries	50	0	0	0	0	0	10	13	1	11	0
Ice Cream	100	40	4.5	2.5	0	20	50	12	0	9	3
Peach Topping	60	0	0	0	0	0	10	14	1	13	1
Raspberry Topping	70	0	0	0	0	0	0	18	1	15	1
This information applicable 3/12/18 through 6/10/18.											

Sugar

The truth is sweet like sugar and, lovely like positive moral character to the wise.

- Sugar is the generic name for sweet-tasting, soluble carbohydrates, many of which are used in food. Table sugar, granulated sugar, or regular sugar, refers to sucrose, a disaccharide composed of glucose and fructose.
- Simple sugars, also called monosaccharides, including glucose, fructose, and galactose. Compound sugars, also called disaccharides or double sugars, are molecules composed of two monosaccharides joined by a glycosidic bond. Common examples are sucrose (table sugar) (glucose + fructose), lactose (glucose + galactose), and maltose (two molecules of glucose). In the body, compound sugars are hydrolyzed into simple sugars.
- Longer chains of monosaccharides are not regarded as sugars and are called oligosaccharides or polysaccharides. Some other chemical substances, such as glycerol and sugar alcohols, may have a sweet taste but are not classified as sugar.
- Sugars are found in the tissues of most plants. Honey and fruit are abundant natural sources of unbounded simple sugars. Sucrose is especially concentrated in sugarcane and sugar beet, making them ideal for efficient commercial extraction to make refined sugar. Maltose may be produced by malting grain. Lactose is the only sugar that cannot be extracted from plants. It can only be found in milk, including human breast milk, and in some dairy products. A cheap source of sugar is corn syrup, industrially produced by converting corn starch into sugars, such as maltose, fructose, and glucose.

- Sucrose is used in prepared foods (e.g. cookies and cakes), is sometimes added to commercially available processed food and beverages, and may be used by people as a sweetener for foods (e.g. toast and cereal) and beverages (e.g. coffee and tea). The average person consumes about 24 kilograms (53 lb) of sugar each year, or 33.1 kilograms (73 lb) in developed countries, equivalent to over 260 food calories per day.

Chemical Composition of Sugar

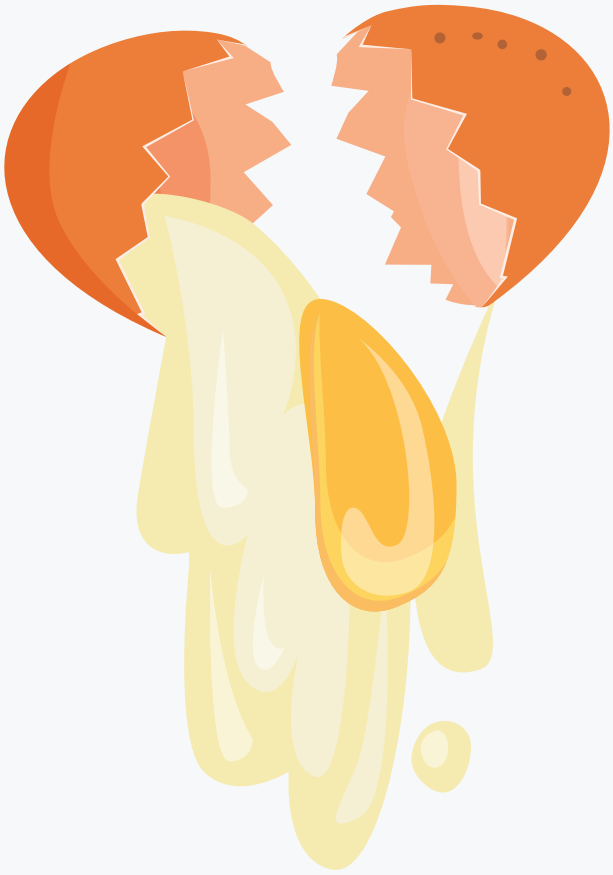
- Sugar refers carbohydrates, such as monosaccharides, disaccharides, or oligosaccharides. Monosaccharides are also called "simple sugars", the most important being glucose.
- molecular formula $C_6H_{12}O_6$ The names of typical sugars end with -one, as in "glucose" and "fructose". Sometimes such words may also refer to any type of carbohydrates soluble in water. The acyclic mono- and disaccharides contain either aldehyde groups or ketone groups. These carbon-oxygen double bonds (C=O) are reactive centers. All saccharides with more than one ring in their structure result from two or more monosaccharides joined by glycosidic bonds with the resultant loss of a molecule of water (H_2O) per bond.
- Monosaccharides in a closed-chain form can form glycosidic bonds with other monosaccharides, creating disaccharides (such as sucrose) and polysaccharides (such as starch). Enzymes must hydrolyze or otherwise break these glycosidic bonds before such compounds become metabolized. After digestion and absorption, the principal monosaccharides present in the blood and internal tissues include glucose, fructose, and galactose.

Natural polymers

- Biopolymers of sugars are common in nature. Starch, consisting of two different polymers of glucose, is a readily degradable form of chemical energy stored by cells and can be converted to other types of energy. Another polymer of glucose is cellulose, which is a linear chain composed of several hundred or thousand glucose units. It is used by plants as a structural component in their cell walls. Humans can digest cellulose only to a very limited extent, though ruminants can do so with the help of symbiotic bacteria in their gut.

Flammability and heat response

- Because sugars burn easily when exposed to flame, the handling of sugars risks dust explosion. The risk of explosion is higher when the sugar has been milled to superfine texture, such as for use in the gum.
- In its culinary use, exposing sugar to heat causes caramelization. As the process occurs, volatile chemicals such as diacetyl are released, producing the characteristic caramel flavor.



Eggs

A hen is only an egg's way of making another egg

- Egg yolks and whole eggs store significant amounts of protein and choline and are widely used in cookery. Due to their protein content, the United States Department of Agriculture formerly categorized eggs as Meats within the Food Guide Pyramid. Despite the nutritional value of eggs, some potential health issues are arising from cholesterol content, salmonella contamination, and allergy to egg proteins.
- Chickens and other egg-laying creatures are kept widely throughout the world and mass production of chicken eggs is a global industry.

Chemical composition of Eggs

Type	Quantity	Type	Quantity
Unsaturated Fat	1-5.3 g	iron	4.4 mg
protein	6 g	saturated fat	1.6 g
cholesterol useful	212 g	vitamin A	I1183 IU
vitamin D	8 unit	calcium	129 mg
choline	610 mg		

Benefits of Eggs

- Helps strengthen the immune system, helping to fight diseases caused by bacteria and viruses.
- The egg helps to prevent cancer, as it prevents the development of cancer cells for tumors such as colon and breast cancer.
- Eggs contain fatty acids that have innumerable benefits, as they increase the beneficial cholesterol in the body, strengthen memory and prevent Alzheimer's disease
- Eggs are essential elements of eye health, namely lutein and zeaxanthin, which are important in the prevention of multiple diseases, such as retinal atrophy.
- Helps cure anemia.
- Eating eggs helps prevent heart attacks and strokes Promote the health of the nervous system
- Provides the body with the necessary energy.
- Eggs maintain the health of bones and teeth because it contains elements such as calcium and vitamin D.

Milk

The truth is sweet like sugar and, lovely like positive moral character to the wise.

Milk

Milk is a white, nutrient-rich liquid food produced in the mammary glands of mammals. It is the primary source of nutrition for infant mammals (including humans who are breastfed) before they are able to digest other types of food. Early-lactation milk contains colostrum, which carries the mother's antibodies to its young and can reduce the risk of many diseases. It contains many other nutrients including protein and lactose. Interspecies consumption of milk is not uncommon, particularly among humans, many of whom consume the milk of other mammals

▪ Chemical composition of Milk

Milk is an emulsion or colloid of butterfat globules within a water-based fluid that contains dissolved carbohydrates and protein aggregates with minerals. Because it is produced as a food source for the young, all of its contents provide benefits for growth. The principal requirements are energy (lipids, lactose, and protein), biosynthesis of non-essential amino acids supplied by proteins (essential amino acids and amino groups), essential fatty acids, vitamins, and inorganic elements, and water.

▪ pH

The pH of milk ranges from 6.4 to 6.8 and it changes over time [clarification needed]. Milk from other bovines and non-bovine mammals varies in composition but has a similar ph.

- **Lipids**

- Milk fat is secreted in the form of a fat globule surrounded by a membrane. Each fat globule is composed almost entirely of triacylglycerols and is surrounded by a membrane consisting of complex lipids such as phospholipids, along with proteins. These act as emulsifiers which keep the individual globules from coalescing and protect the contents of these globules from various enzymes in the fluid portion of the milk. Although 97–98% of lipids are triacylglycerols, small amounts of di- and monoacylglycerols, free cholesterol and cholesterol esters, free fatty acids, and phospholipids are also present.
- The fat-soluble vitamins A, D, E, and K along with essential fatty acids such as linoleic and linolenic acid are found within the milk fat portion of the milk

- **Proteins**

- Normal bovine milk contains 30–35 grams of protein per liter of which about 80% is arranged in casein micelles. Total proteins in milk represent 3.2% of its composition.

- **Caseins**

- The largest structures in the fluid portion of the milk are “casein micelles. There are four different types of casein proteins: s1-, s2-, -, and -caseins. Most of the casein proteins are bound into the micelles. They share one important feature: the outermost layer consists of strands of one type of protein, k-casein, reaching out from the body of the micelle into the surrounding fluid. These kappa-casein molecules all have a negative electrical charge and therefore repel each other, keeping the micelles separated under normal conditions and in a stable colloidal suspension in the water-based surrounding fluid.

- **Salts, minerals, and vitamins**

Minerals or milk salts are traditional names for a variety of cations and anions within bovine milk. Calcium, phosphate, magnesium, sodium, potassium, citrate, and chloride are all included as minerals and they typically occur at a concentration of 5–40 mM. The milk salts strongly interact with casein, most notably calcium phosphate. It is present in excess and often, much greater excess of solubility of solid calcium phosphate.pH

- **Calcium phosphate structure**

For many years the most accepted theory of the structure of a micelle was that it was composed of spherical casein aggregates, called submicelles, that were held together by calcium phosphate linkages.

Sugars and carbohydrates

Milk contains several different carbohydrates including lactose, glucose, galactose, and other oligosaccharides. The lactose gives milk its sweet taste and contributes approximately 40% of whole cow's milk's calories. Lactose is a disaccharide composite of two simple sugars, glucose and galactose. Bovine milk averages 4.8% anhydrous lactose, which amounts to about 50% of the total solids of skimmed milk. Levels of lactose are dependent upon the type of milk as carbohydrates can be present at higher concentrations than lactose in milk.

Miscellaneous contents

Other components found in raw cow's milk are living white blood cells, mammary gland cells, various bacteria, and a large number of active enzymes.

Vegetable Oil

Let food be thy medicine and medicine be thy food

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Vegetable oils, or vegetable fats, are oils extracted from seeds, or less often, from other parts of fruits. Like animal fats, vegetable fats are mixtures of triglycerides. Soybean oil, rapeseed oil, and cocoa butter are examples of fats from seeds. Olive oil, palm oil, and rice bran oil are examples of fats from other parts of fruits. In common usage, vegetable oil may refer exclusively to vegetable fats which are liquid at room temperature. Vegetable oils are usually edible; non-edible oils derived mainly from petroleum are termed mineral oils.Calcium phosphate structure

▪ Chemical composition of Vegetable oil

1. A triglyceride is composed of glycerol and three fatty acids. When all of the fatty acids in a triglyceride are identical, it is termed a "simple" triglyceride. The more common forms, however, are the "mixed" triglycerides in which two or three kinds of fatty acids are present in the molecule.
2. Phosphatides consist of alcohols (usually glycerol), combined with fatty acids, phosphoric acid, and a nitrogen-containing compound.
3. Although sterols are found in both animal fats and vegetable oils, there is a substantial difference biologically between those occurring in animal fats and those present in vegetable oils.
4. Tocopherols are important minor constituents of most vegetable fats. They serve as antioxidants to delay rancidity and as sources of the essential nutrient vitamin E., There are four types of tocopherols varying in antioxidation and vitamin E activity. Among tocopherols, alpha-tocopherol has the highest vitamin E activity.
5. Carotenoids are color materials occurring naturally in fats and oils.

BAKING BOWDER

A fit, healthy body that is the best fashion statement

42

Baking powder is a dry chemical leavening agent, a mixture of a carbonate or bicarbonate, and a weak acid. The base and acid are prevented from reacting prematurely by the inclusion of a buffer such as cornstarch. Baking powder is used to increase the volume and lighten the texture of baked goods. It works by releasing carbon dioxide gas into a batter or dough through an acid-base reaction, causing bubbles in the wet mixture to expand and thus leavening the mixture.

1. Chemical composition of Baking powder

Baking powder is made up of a base, an acid, and a buffering material to prevent the acid and base from reacting before their intended use. Most commercially available baking powders are made up of sodium bicarbonate (NaHCO3), also known as baking soda or bicarbonate of soda) and one or more acid salts.Phosphatides consist of alcohols (usually glycerol), combined with fatty acids, phosphoric acid, and a nitrogen-containing compound.

2.Single- and double-acting baking powders

- The use of two acidic components is the basis of the term "double-acting." The acid in a baking powder can be either fast-acting or slow-acting. A fast-acting acid reacts in a wet mixture with baking soda at room temperature, and a slow-acting acid does not react until heated. When the chemical reactions in baking powders involve both fast- and slow-acting acids, they are known as "double-acting"; those that contain only one acid are "single-acting".
- By providing a second rise in the oven, double-acting baking powders increase the reliability of baked goods by rendering the time elapsed between mixing and baking less critical.

1. Starch component

Baking powders also include components to improve their stability and consistency. Cornstarch, flour, or potato starch are often used as buffers. An inert starch serves several functions in baking powder. Primarily it is used to absorb moisture, and thus prolong the shelf life of the compound by keeping the powder's alkaline and acidic components dry so as not to react with each other prematurely. A dry powder also flows and mixes more easily. Finally, the added bulk allows for more accurate measurements.

Salt

I am a better person when I have less on my plate

45

- Salt is a mineral composed primarily of sodium chloride (NaCl), a chemical compound belonging to the larger class of salts; salt in its natural form as a crystalline mineral is known as rock salt or halite.
- Salt is essential for life in general, and saltiness is one of the basic human tastes. Salt is one of the oldest and most ubiquitous food seasonings, and salting is an important method of food preservation.
- Sodium is an essential nutrient for human health via its role as an electrolyte and osmotic solute. Excessive salt consumption may increase the risk of cardiovascular diseases, such as hypertension, in children and adults. The World Health Organization recommends that adults should consume less than 2,000 mg of sodium, equivalent to 5 grams of salt per day.

1. Chemical composition of Salt

- Salt is mostly sodium chloride, the ionic compound with the formula NaCl, representing equal proportions of sodium and chlorine. Sea salt and freshly mined salt also contain small amounts of trace elements .
- Mined salt is often refined in the production of table salt; it is dissolved in water, purified via precipitation of other minerals out of solution, and re-evaporated. During this same refining process, it is often also iodized. Salt crystals are translucent and cubic in shape; they normally appear white but impurities may give them a blue or purple tinge.

Vanilla

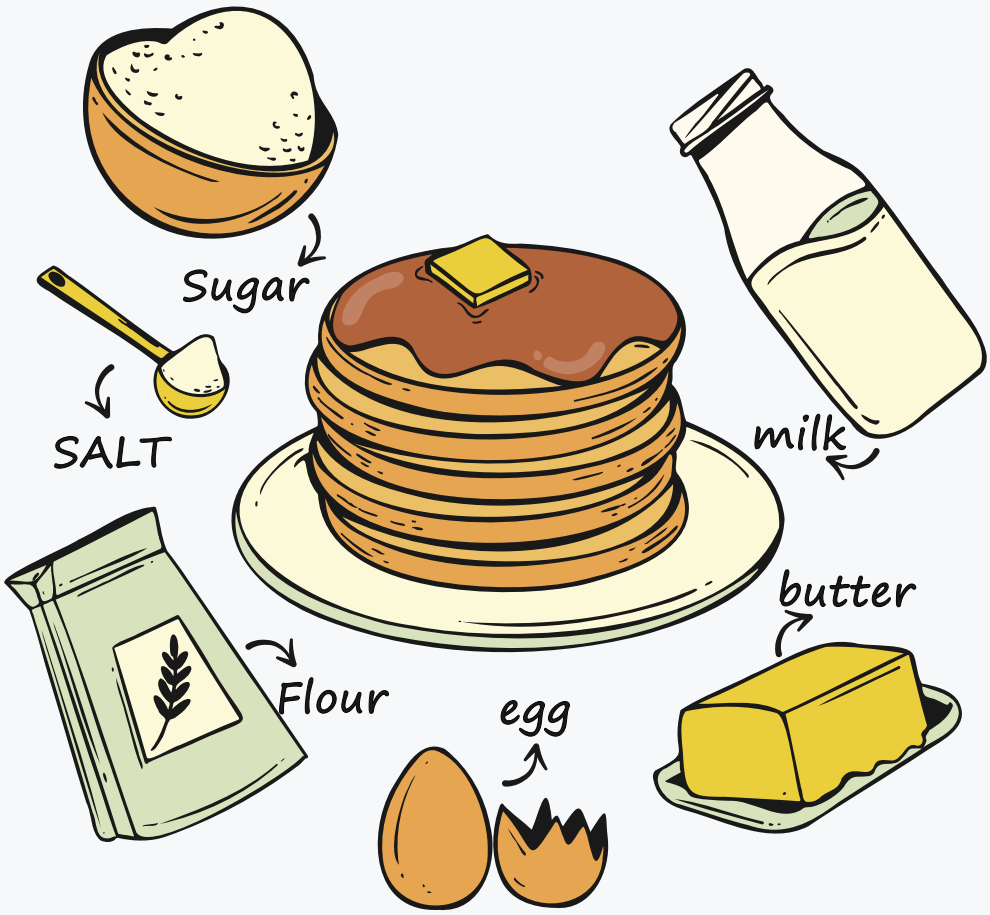
Cakes are healthy too, you just eat a small slice

47

- Vanillin is an organic compound. It is a phenolic aldehyde. Its functional groups include aldehyde, hydroxyl, and ether. It is the primary component of the extract of the vanilla bean. Synthetic vanillin is now used more often than natural vanilla extract as a flavoring agent in foods, beverages, and pharmaceuticals.
- Vanillin and ethylvanillin are used by the food industry; ethylvanillin is more expensive but has a stronger note.
- Natural vanilla extract is a mixture of several hundred different compounds in addition to vanillin. Artificial vanilla flavoring is often a solution of pure vanillin, usually of synthetic origin. Because of the scarcity and expense of natural vanilla extract, synthetic preparation of its predominant component has long been of interest. The first commercial synthesis of vanillin began with the more readily available natural compound eugenol Today, artificial vanillin is made either from guaiacol or lignin.
- Lignin-based artificial vanilla flavoring is alleged to have a richer flavor profile than oil-based flavoring; the difference is due to the presence of acetovanillone, a minor component in the lignin-derived product that is not found in vanillin synthesized from guaiacol.

1. Chemical composition of Vanilla

- Natural vanillin is extracted from the seed pods of Vanilla plan folia, a vining orchid native to Mexico, but now grown in tropical areas around the globe. Madagascar is presently the largest producer of natural vanillin.
- As harvested, the green seed pods contain vanillin in the form of its -d-glucoside; the green pods do not have the flavor or odor of vanilla.
- After being harvested, their flavor is developed by a months-long curing process, the details of which vary among vanilla-producing regions, but in broad terms, it proceeds as follows:
- First, the seed pods are blanched in hot water, to arrest the processes of the living plant tissues. Then, for 1–2 weeks, the pods are alternately sunned and sweated: during the day they are laid out in the sun, and each night wrapped in cloth and packed in airtight boxes to sweat. During this process, the pods become dark brown, and enzymes in the pod release vanillin as the free molecule. Finally, the pods are dried and further aged for several months, during which time their flavors further develop. Several methods have been described for curing vanilla in days rather than months, although they have not been widely developed in the natural vanilla industry, with its focus on producing a premium product by established methods, rather than on innovations that might alter the product's flavor profile.
- iodized. Salt crystals are translucent and cubic in shape; they normally appear white but impurities may give them a blue or purple tinge.



SUGAR PANCAKE

Good food never fail in bringing people together.

50

Chapter 2 Sugar Pancake

- In this chapter, we will talk about the first type of pancake that the project talks about, which is sugar pancake, and we will review in this chapter the components of this type and the method of preparation and manufacturing in detail, then we review the nutritional value of the product so that we can calculate the effect of this meal on the health of the individual and control the number of calories, and then we present to you, the samples that were made in the laboratory through pictures of the top side of the sample and the bottom face of the sample, and then we present to you your data for the time taken and the details, and we also present to you, the assessments of the individuals who were chosen to evaluate the samples in degrees.

Ingredients

Component	Quantity	Component	Quantity
plain flour	150g	butter, melted	25g
caster sugar	25g	vanilla extract	1/2 tsp
egg	1 medium	sunflower oil, for frying	1 tsp
skimmed milk	350ml		

Method

1. Sieve the flour into a bowl and stir in the sugar. Add one egg and an egg yolk and milk to the jug and whisk. Make a well in the flour and whisk in the milk and egg mixture to form a smooth batter. Stir in the butter and vanilla extract. Set to rest for 10 minutes.
2. Smear the oil in a 20cm non-stick frying pan and put over medium heat until hot. Pour in enough batter to cover the base. Cook for 1 minute, then flip and cook the other side for 30 seconds until cooked through.
3. Transfer to a warm plate and repeat until you have 8-10 pancakes. Serve with caster sugar and a drizzle of lemon juice

Figure (1)
the top surface of sugar pancake

Figure (2)
the Lower surface of sugar pancake

Physical properties of the preparation process

Component	Quantity	Component	Quantity
Weight before cooking	37 g	Length	12 cm
Weight after cooking	33 g	Thickness	1/2 cm
Cooking time	3 min		

Nutritional Details

Component	Quantity	Component	Quantity
Energy	163 kcal	Suger	9.7 g
Fat	5.3 g	Salt	0.08 g
Saturates	2.5 g		

Sample evaluation

Properties	Control	A	B	C	D
Taste	17	19	18	19	18
Height	17	19	19	19	18
Odor	18	18	18	20	18
Crust Color	20	20	20	20	19
Crumb Color	20	20	20	20	19
Over All	18	19	18	19	18
Total	110	115	113	117	110

Figure (3) Sugar Pancake Sample Evaluation Table

- **The effect of eating sugar on the body**
- Lower Your Risk of Illness and Disease
- Sugar robs nutrients from the body needed for its metabolism, so nutrient deficiencies such as osteoporosis, anemia, and immune deficiencies are all influenced by sugar consumption. The immune system itself is affected by sugar as it inhibits the release of growth hormones when it raises insulin levels. Sugar can play havoc with the digestive system, weakening it, and not allowing nutrients to be assimilated properly.

- Control Hunger and Cravings
- Therefore, sugar itself is a food that takes more from the body than it adds. While using up nutrients, it contributes none that are of use. Many foods containing sugar are void of other important macro and micronutrients and necessary components. Water, protein, and healthful fat are needed by the body for it to function properly. As a result, hunger develops. Your body seeks the nutrients it is lacking and often a binge ensues.

- Improve Your Energy and Feel Less Sluggish
- Excess sugar slows you down. Once you eat it, it raises your blood sugar levels. Your body releases insulin and tryptophan is triggered. The tryptophan is converted into serotonin, leaving you ready for a nap.

- ## Enhance Mental Clarity

- Research indicates that sugar can contribute to memory loss and an inability to concentrate. It has been shown to contribute to nervousness and negative thoughts. Research also suggests that inflammation created by sugar intake is the cause of disturbances in the brain's chemistry.

- ## Improve Your Appearance

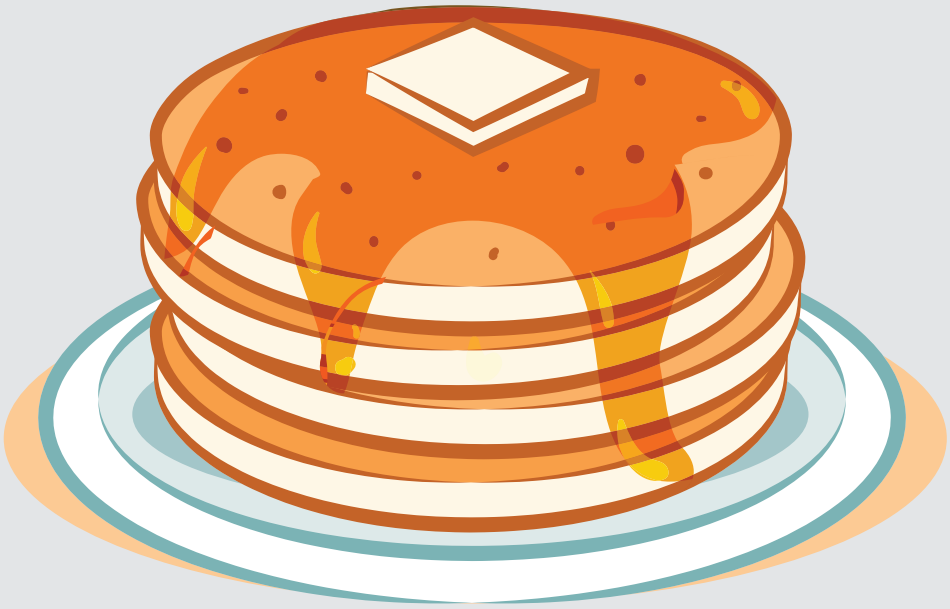
Along with robbing your body of minerals and vitamins that keep you looking and feeling great, sugar has the ability to rob you of your looks.

- ## Manage and Maintain Your Weight

- Cutting back on sugar can lead to weight loss or maintenance. In the last two decades, experts believed fat to be the enemy in our diets. We know now that the body needs fat, especially 'good' fats, such as omega-3fatty acids which feed the brain, improve circulation, and work against inflammation.

- ## Improve Dental Health

- Sugar is a major cause of dental disorders. It encourages the growth of bacteria that is responsible for causing cavities. Brushing helps to remove these bacteria, but tartar build-up often results and our oral health suffers.



Low Calorie Pancake

Is it just me or does this meal look more scrumptious because I'm on a diet?

Low calorie pancakes

Now we will talk about the second type of pancakes that the project talks about, namely low-calorie pancakes so that we seek to develop and improve the pancakes industry in a way that suits human health and does not return to it with severe harm, and even take into account the categories that depend on its caloric intake Low to enjoy healthy nutrition without depriving themselves of some varieties and we will talk in this type also about the ingredients and recipe for cooking low-calorie pancakes based on skim milk and fructose sugar in its manufacture and we will provide you with the complete recipe and method of preparation and pictures of samples that were already manufactured in the laboratory And the individuals' assessments of it, the nutritional value of this species, its benefits and harms are as follows

▪ Ingredients

Along with robbing your body of minerals and vitamins that keep you looking and feeling great, sugar has the ability to rob you of your looks.

Component	Control	Component	Control	Additions
skimmed milk	350 ml	baking powder	1 tsp	Caramel
plain flour	150g	caster sugar	25g	White honey
egg	1 medium	vanilla extract	1/2 tsp	Fruits

Methods

1. Combine the milk and a little bit of water in a jug.
2. Sift the flour into a bowl and make a well in the middle. Break the 2 eggs into it. Begin whisking the eggs incorporating the flour as you do so.
3. Gradually add the milk and water mixture, still whisking, until all the liquid has been added and you have formed a smooth batter.
4. Heat a frying pan over high heat with 2-3 sprays of Fry Light until hot. Put 2 tbsp of batter into a ladle and add to the center of the pan.
5. Check when edges become loose (about 20 seconds) and the batter has solidified, then with a pan slice, turn the pancake over and cook for a few more seconds.
6. Remove from pan onto a warm plate. Serve with a topping that fits your diet or make that bit your guilty pleasure (we won't tell).

Figure (4)
the top surface of low-calorie pancake

Figure (5)
the Lower surface of low-calorie pancake

Physical properties of the preparation process

Component	Control	Component	Control
Weight before cookingt	35 g	Thickness	4 cm
Weight after cooking	30 g	Cooking time	7.30 min
Length	12 cm		

Nutritional Details

Component	Control	Component	Control
Calories	60.2	sodium	491.0 mg
fat	1.1 g	potassium	67.0 mg
cholesterol	1.7 mg	carbohydrate	9.5 g
proetin	3.6 g		

- **The effect of eating sugar on the body Low-calorie pancakes with fructose sugar and skim milk**
- how Effective Are Very Low-Calorie Diets?

1. If you have a BMI over 30 (which your doctor will call "obese"), then a very low-calorie diet may let you lose about 3 to 5 pounds per week, for an average total weight loss of 44 pounds over 12 weeks.
2. Losing that amount of weight may improve weight-related medical conditions, including diabetes, high blood pressure, and high cholesterol.

- Are Very Low-Calorie Diets Safe?

1. Very low-calorie diets are not OK for everyone. Talk to your doctor to see if this kind of diet is appropriate for you.
2. If your BMI is greater than 30, then very-low-calorie diets are generally safe when used under proper medical supervision.

- Very low-calorie diets are not recommended
- for pregnant or breastfeeding women, and are not appropriate for children or teens except in specialized treatment programs. They also may not be OK for people over age 50, either, depending on the potential need for medications for pre-existing conditions, as well as the possibility of side effects.If your BMI is greater than 30, then very-low-calorie diets are generally safe when used under proper medical supervision.

- **What Are the Side Effects of Very Low-Calorie Diets?**

1. People on a very low-calorie diet for 4 to 16 weeks report minor side effects such as fatigue, constipation, nausea, and diarrhea. These conditions usually improve within a few weeks and rarely prevent people from completing the program.
2. Gallstones are the most common serious side effect of very-low-calorie diets. Gallstones are more common during rapid weight loss. When the body experiences a calorie deficit, it starts to break down fat for energy. The liver then secretes more cholesterol and when combined with bile, can form gallstones.

- **What Are the Other Drawbacks of Very Low-Calorie Diets?**

To be healthy, you need a balance of foods from different food groups. It's difficult to get good nutrition and feel satisfied on a very low-calorie diet. In addition, consuming as few as 800 calories daily may not give you the energy you need for daily living and regular physical activity, especially if you eat the same foods every day.

1. Is fructose bad for you?

Natural fructose from fresh fruit and vegetables is good for a person's health. Processed forms of fructose, such as HFCS, may have negative health effects. Scientists are currently studying how this type of sweetener compares with other forms of sugar. Below, we discuss the research around the possible risks and benefits of fructose on a person's health.

1. Fructose can only be metabolized by the liver and can't be used for energy by your body's cells. It's therefore not only completely useless for the body but is also a toxin in high enough amount because the job of the liver is to get rid of it, mainly by transforming it into fat and sending that fat to our fat cells.
2. Excess fructose damages the liver and leads to insulin resistance in the liver as well as fatty liver disease. In fact, fructose has the same effects on the liver as alcohol (ethanol), which is already well known as a liver toxin.
3. In part because of the damage is done to the liver, chronic excess fructose causes dyslipidemia, which means that your blood lipid markers tend to shift towards numbers that indicate a risk for heart disease.
4. Fructose rapidly causes leptin resistance. Leptin is a hormone that controls appetite and metabolism to maintain a normal weight. Leptin resistant people tend to gain fat and become obese really easily.

- **Skim Milk: Is It Healthy?**

Packed with essential nutrients but fairly low in calories, skim milk makes an excellent addition to heart-healthy meal plans. However, skim milk isn't for everybody.

- **Beneficial Nutrients**

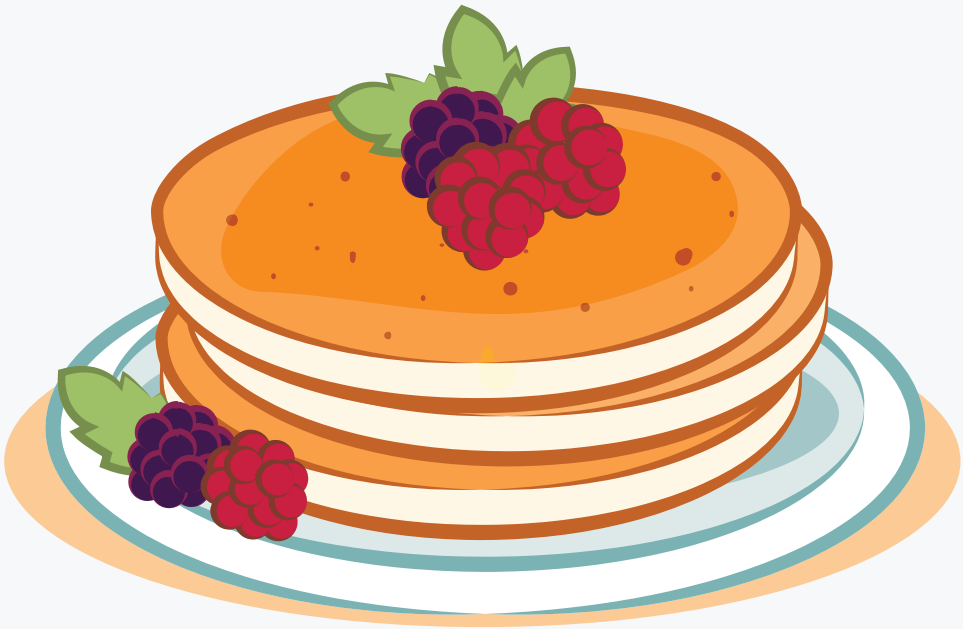
Skim milk is loaded with protein, calcium, phosphorous, vitamin D and vitamin A. Many of these nutrients help build and maintain strong muscles, teeth, and bones. A cup of skim milk provides about 8 grams of protein, but just 90 calories.

- **Health Benefits**

Drinking skim milk regularly may provide you with several health benefits. You'll help decrease your risk of developing osteoporosis.

- **Skim vs. Whole Milk**

1. Skim milk is much lower in calories than whole milk containing 90 calories per cup vs. 150 calories in whole milk but provides about the same amount of protein, vitamins, and minerals as whole milk. Whole milk contains saturated fat and dietary cholesterol, while skim milk provides just negligible amounts of these nutrients.
2. While ingesting large amounts of saturated fat does increase your risk for high cholesterol and heart disease, the saturated fat consisting of medium-chain triglycerides found in dairy fat may not be as bad as once thought.



Quinoa low-calorie Pancake

Never eat more than you can lift.

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- Now we will talk about the Third type of pancakes that the project talks about, Quinoa low-calorie pancake, so These fluffy quinoa flour pancakes are the best gluten-free and vegan pancakes you'll ever taste! They've got the perfect texture and are high protein too!
- Do you know how traditional pancake recipes tell you to leave your pancake batter clumpy and not overmix? The reason for that is gluten. When you're using gluten-based flours and you mix too much the pancakes will get tough. Hence, no overmixing.
- But gluten-free pancakes are completely different! No wondering if they're going to be tough due to mixing!
- However, to make light and fluffy gluten-free pancakes, you want to make sure you use some leavening (like baking soda or powder) and/or a good blend of gluten-free flour. In our recipe today, we're relying on the leavening agents to make these pancakes oh so fluffy and perfect!
- So how did we achieve the perfect texture for these quinoa flour pancakes? We're relying on baking powder, baking soda, and apple cider vinegar.

Ingredients

Component	Control	Component	Control
quinoa flour	1 cup	almond milk	1/4 cup
baking powder	1/4 tsp	eggs	2
baking soda	1/2 tsp	oil	1 tsp

Methods

1. Whisk together the dry ingredients.
2. In a separate bowl, whisk together the wet ingredients. Allow sitting for 3 minutes.
3. Pour the wet ingredients into the dry and stir to combine. Once you have a smooth batter, it's time to cook!
4. Preheat a pan over medium-low heat. Use a little cooking spray to grease it. Spoon 1/4 cup of batter onto the pan and gently spread it out with the back of a spoon. Cook the pancakes until bubbles begin to form, about 1 minute, then flip and cook another 1 - 2 minutes. Repeat until all the batter has been used.
5. Serve the pancakes immediately with your favorite toppings. You can also freeze these pancakes and reheat them in the toaster oven.

Figure (6)
the top surface of Quinoa low-calorie pancake

Figure (7)
the Lower surface of Quinoa low-calorie pancake

▪ Physical properties of the preparation process

Component	Control	Component	Control
Weight before cookingt	40 g	Thickness	1/2 cm
Weight after cooking	35 g	Cooking time	15 min
Weight before cookingt	12 cm		

▪ Nutritional Details

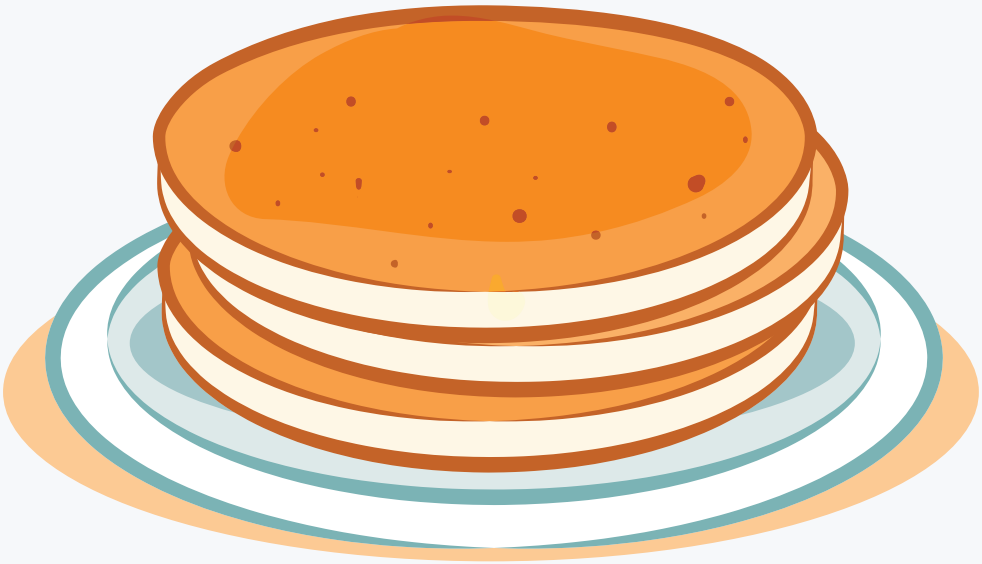
Component	Control	Component	Control
Calories	82 kal	sodium	73 mg
Carbohydrates	11 g	potassium	61 mg
Protein	2 g	Fiber	1 g
Fat	2 g	Calcium	58 mg

- **The effect of Quinoa on the body, Quinoa low-calorie pancakes**
- Quinoa is a whole grain that is rapidly growing in popularity due to its many health benefits.
- Although people can cook and eat quinoa seeds in a similar way to most grains, the quinoa plant itself is more similar to beetroots and spinach. People can eat both the seeds and leaves of this versatile, nutritious plant.
- **Benefits**
- A plant-based source of protein
- One cup of cooked quinoa weighing 185 grams (g) provides 8.14 g of protein.
- The proteins in quinoa offer a wide range of amino acids. Amino acids are vital for supporting muscle development and immune activity, among other essential functions.
- This makes quinoa an excellent dietary choice for people following a vegetarian or vegan diet.
- Quinoa, unlike many other grains, is also an excellent source of lysine. This is an essential amino acid. Lysine is vital for the synthesis of proteins. Although the deficiency is rare, it can cause a range of medical issues, as lysine plays a role in processes such as growth and development.

- **High fiber content**
- Quinoa has a high fiber content compared with other grains, providing 5.18 g in a single 185 g cup. This equates to at least 15.42% of a person's daily requirement, depending on their age and sex.
- According to the Academy of Nutrition and Dietetics, consuming enough fiber can help reduce the risk of several health conditions, including constipation, high cholesterol, high blood pressure, and diverticulosis
- **A source of antioxidants**
- Quinoa is a good source of antioxidants compared with other common grains in a gluten-free diet. Most gluten-free products consist of corn, rice, or potato flour. These generally provide fewer nutrients than products using quinoa.
- Quinoa provides vitamin E. This is an antioxidant compound that may help reduce the risk of coronary heart disease, certain cancers, and several eye disorders.
- **Helps meet manganese requirements**
- One cup of cooked quinoa contains 1.17 milligrams (mg) of manganese. This accounts for around 27.43% of the adequate intake of manganese for males and 35.05% for females.
- Manganese is essential for development and metabolism. This element also works alongside many enzymes in the body to support their function

- **Good source of iron**
- One cup of quinoa supplies 2.76 mg of iron, providing 34.5% of the recommended intake for males and 15.33% for females. Maintaining adequate levels of iron is essential for good health.
- Iron is necessary for a range of processes in the human body. It is, for example, an essential part of hemoglobin. This compound carries oxygen in the blood, supporting energy and cell function throughout the body.
- **A source of folate**
- Folate is an essential B vitamin that plays a key role in the formation of DNA. Women must obtain enough folate during pregnancy to reduce the chance of neural tube defects in their babies, according to the Office of Dietary Supplements (ODS).
- One cup of cooked quinoa contains 77.7 micrograms (mcg) of folate or 19.43% of the daily requirement.
- Pregnant women may only be able to get enough folate by taking folic acid supplements. However, consuming more folate in the diet can reduce the risk of deficiency. Quinoa provides a good proportion of a person's daily folate value.

- **Provides magnesium**
- One cup of cooked quinoa contains 118 mg of magnesium. Although the daily recommended amount increases with age, quinoa is a good source of the mineral.
- Magnesium is essential for the function of more than 300 enzymatic reactions and is present in every cell of the body.
- The ODS suggest that low levels of magnesium have possible links to the following health concerns:
- – high blood pressure
- – cardiovascular disease
- – type 2 diabetes
- – migraine
- **Contains quercetin and kaempferol**
- Quinoa contains the plant compounds quercetin and kaempferol.
- These antioxidants may protect against a range of chronic conditions. Quercetin may also help boost the body's defenses against infection and inflammation.
- **Helps meet manganese requirements**
- One cup of cooked quinoa contains 1.17 milligrams (mg) of manganese. This accounts for around 27.43% of the adequate intake of manganese for males and 35.05% for females.
- Manganese is essential for development and metabolism. This element also works alongside many enzymes in the body to support their function



SAVORY PANCAKES

The most essential part of a well balanced diet is food!

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- Now we will talk about the Forth type of pancakes that the project talks about, Savory pancake
- Wheat flour is essential to this particular recipe because gluten allows the cooking pancakes to trap air and become fluffy while remaining light and soft. There are good gluten-free pancake recipes out there in the world, but I'm afraid I haven't tested any gluten-free variations of this particular recipe. If you make these with a good gluten-free flour (or other variation) I'd love to hear from you!
- I've used good whole wheat flour in these pancakes before and they've turned out fairly well. I do find that whole wheat flour gives you a somewhat dryer, firmer pancake, but it does have the potential to work nicely with certain savory combinations (nuts, brown butter, browned meats, beer, and wine sauces, nutty cheese, etc.).
- If you can't have dairy, you do can substitute a non-dairy 'milk' product fairly easily. I've made these with soy milk and almond milk before and had good results, though there is a bit of a tendency for the batter to thicken up a little bit more for some reason. To combat this, try adding a bit more liquid to the batter. If you also need to sub out the butter you can substitute about 65 grams of light vegetable oil (a little over 1/4 cup). Butter is about 15% water, so you want to use slightly less oil (which has no water) to account for this. I haven't tried using non-dairy butter before, but if it melts well I would imagine that it would work fairly well.

- **Contains quercetin and kaempferol**
- Quinoa contains the plant compounds quercetin and kaempferol.
- These antioxidants may protect against a range of chronic conditions. Quercetin may also help boost the body's defenses against infection and inflammation.
- **Helps meet manganese requirements**
- One cup of cooked quinoa contains 1.17 milligrams (mg) of manganese. This accounts for around 27.43% of the adequate intake of manganese for males and 35.05% for females.
- Manganese is essential for development and metabolism. This element also works alongside many enzymes in the body to support their function

- **Ingredients**

Component	Control	Component	Control	Additions
flour	1 cup	milk	1.5 cup	Feta cheese
baking powder	1 tsp	eggs	1	Kiri cheese cubes
Vanillin	1/8 tsp	Salt	1/8 tsp	Minced thyme
pepper	1/8 tsp	Paprika	1/8 tsp	
melted butter	1/3 cup			

Methods

- Sift the flour and salt into a large bowl. Whisk together the egg and milk in another bowl then slowly pour the liquid into the dry ingredients. Whisk together until the batter is smooth. Set aside.
- For the cheese sauce, melt the butter in a small pan and whisk in the flour. Cook for 1 minute then gradually add the milk whisking continuously. Bring to the boil and reduce the heat to a simmer for 1 minute until the sauce is thick and smooth. Stir in half of the cheese and season with black pepper.
- To make the pancakes, heat a 20cm/8in crêpe or omelet pan until very hot. Drizzle in a small amount of oil and tip the pan to swirl the oil around. Ladle in about two tablespoons of batter mix and immediately tilt the pan from side to side to get a thin, even layer of batter to cover the base of the pan. Cook for around 30 seconds until the underside is golden then flip or turn with a pallet knife.
- As soon as the pancake is turned, scatter over some ham, spring onions, and sun-dried tomatoes. Spoon over some cheese sauce then top with a scattering of the remaining cheese.
- Once you've topped the pancake the underside will be done. Fold the pancake in half then slip it out of the pan onto a warmed serving plate and keep warm under some foil while you make the remaining pancakes

Figure (6)
the top surface of Savory pancake

Figure (7)
the Lower surface of Savory pancake

- **Physical properties of the preparation process**

Component	Control	Component	Control
Weight before cookingt	40 g	Thickness	1/2 cm
Weight after cooking	30 g	Cooking time	3 min
Weight before cookingt	10.2 cm		

- **Physical properties of the preparation process**
- Serving: 3 pancakes

Component	Control	Component	Control
Calories	767 kal	sodium	785 mg
Carbohydrates	66g	potassium	778 mg
Protein	22 g	Fiber	2 g
Fat	45 g	Calcium	370 mg

- **The benefits of chasse on body**
- dairy products are one of the best dietary sources of calcium and other nutrients. Here are eight ways in which cheese might be healthful.
- **Bone health**
- The calcium, protein, magnesium, zinc, and vitamins A, D, and K content of cheese mean it can contribute to healthy bone development in children and young adults, and osteoporosis prevention.
- **Dental health**
- Cheese can enhance dental health. Calcium plays an important role in tooth formation, and cheese is a good source of calcium. Also, at least one study has shown that eating cheese can raise the pH level in dental plaque, offering protection against dental cavities.
- Milk and sugar-free yogurt appear not to have the same effect.
- **Blood pressure**
- Statistics show that people who eat more cheese have lower blood pressure, despite some cheeses being rich in fat and sodium

1. Calcium can help reduce blood pressure. Low-fat, low-sodium cheeses are recommended.
2. A suitable low-sodium cheese would be low-fat or reduced-fat natural Swiss cheese.
3. Many kinds of cheese are now available in "lite" versions, such as cheddar, brie, Havarti, and feta. Check the nutritional information, because some reduced-fat cheeses have added sodium.

- **Healthy blood vessels**

- Some cheeses contain high levels of cholesterol and sodium, suggesting that they can lead to cardiovascular problems.
- In 2016, scientists also found that the antioxidant properties of cheese may protect against the negative effects of sodium, at least, in the short term.
- In the study, the blood vessels of participants who consumed dairy cheese functioned better than the blood vessels of those who ate pretzels or soy cheese.

- **Gut microbiota and cholesterol**

As a fermented food, cheese may help boost healthy gut bacteria. This could have a positive effect on blood cholesterol levelsDental health

- **A healthy weight**

Studies show that a person with a high body mass index (BMI) is more likely to have low levels of calcium. Since cheese is a good source of calcium, there may be benefits for people on a weight-loss diet.

- **Omega-3 fatty acids**

These have been found in some types of cheese, and especially those made from milk produced by cows that eat Alpine grasses. Omega-3 fatty acids are believed to benefit the cardiovascular system and the brain.

- **Healthy cells**

Cells need protein for building and repair. One ounce of cheddar cheese can offer 7 g of protein. The amount of protein recommended for each person depends on their age, size, and activity level. Use this calculator to find out how much protein you need.

- **Risks**
- A diet high in sodium and saturated fat is likely to increase the risk of high blood pressure, cardiovascular disease, and type 2 diabetes.
- Gut microbiota and cholesterol
- **Saturated fat**
- The 2015 Report of the (DGAC) recommend limiting fat intake to 20 to 35 percent of daily calories, and saturated fat to less than 10 percent of total calories. This means that someone following an 1800-calorie diet should consume less than 18 grams per day of saturated fat.Omega-3 fatty acids
- **Sodium**

Along with fat, sodium can be high in some cheeses, especially processed cheeses and "cheese flavored" products.

- **Hormones**
- Concerns have been raised about the presence of estrogen and other steroid hormones in dairy produce. These could disrupt the endocrine system and potentially increase the risk of some types of cancer.
- **Allergies, intolerances, sensitivity, and interactions**
- Lactose intolerance
- A person with lactose intolerance lacks the enzyme needed to break down and digest the sugar found in milk. Consuming milk and dairy products may result in bloating, flatulence, or diarrhea.
- Tolerance levels depend on the individual. One person may be able to tolerate aged dairy with low levels of lactose, such as yogurt and hard cheeses, while others experience a reaction to even a small amount of dairy products.

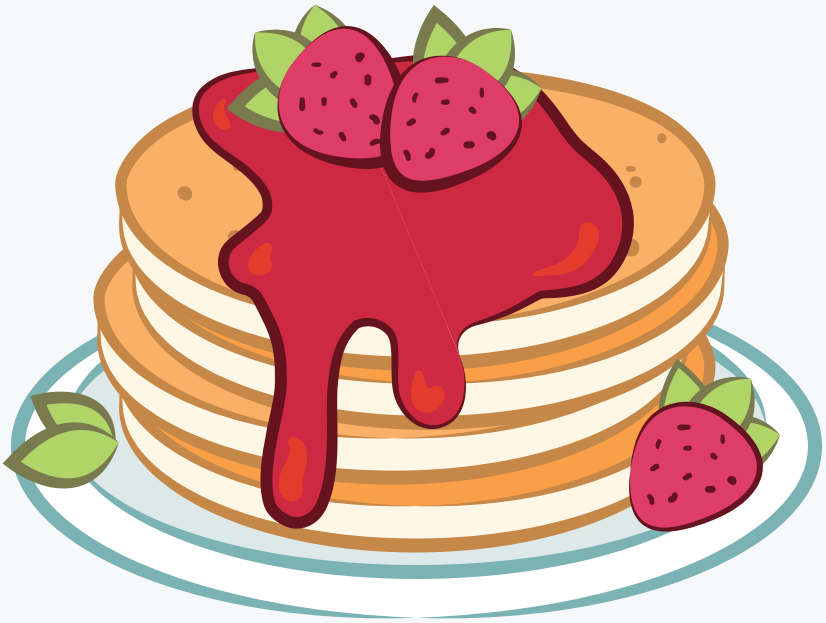
- Soft, fresh cheeses, such as mozzarella, may trigger a reaction in a person with lactose intolerance. However, harder cheeses, such as cheddar and parmesan, have lower levels of lactose. People with lactose intolerance may find that a small amount of these cheeses can be safely consumed.
- **An allergy**
- occurs because of an abnormal immunologic reaction to certain triggers, such as milk protein, whether casein or whey. The body's immune system produces an allergic antibody, immunoglobulin E (IgE) antibody when exposed to the trigger.
- Allergy symptoms include post-nasal drip, wheezing, diarrhea, and vomiting. In more severe cases, a person may develop asthma, eczema, bleeding, pneumonia, and anaphylaxis, or shock. This can be serious, and even life-threatening.
- **Anyone with a milk allergy must avoid all dairy products, including cheese.**
- A sensitivity to casein
- a protein found in milk, can trigger inflammation throughout the body, producing symptoms such as sinus congestion, acne flares, skin rash, and migraines.
- Anyone experiencing this type of symptom can ask a dietitian to guide them through an elimination diet or conduct a food sensitivity test, to find out whether a dairy-free diet may help.
- Phosphorus
- is present in high quantities in some cheeses. This may be harmful to those with a kidney disorder. If the kidneys cannot remove excess phosphorus from the blood, this can be fatal.

- High calcium intake
- has been linked to an increased risk of prostate cancer in some studies, but other investigations have found no associations between the two.
- Constipation is frequently seen in young children who consume a lot of dairy products while eating a low-fiber, processed diet.
- Monoamine oxidase inhibitors (MAOIs)

are drugs used to treat depression and Parkinson's disease. People using these drugs may need to avoid foods with high levels of the amino acid tyramine, found naturally in aged cheeses, cured meats, pickled foods, beer, and wine. The longer the food is aged, the higher the tyramine content.

- Migraines and headaches

have also been associated with tyramine-containing foods. A food diary may help identify if tyramine-containing foods are triggering symptoms.



Pancake with cheese and quinoa

First, we eat. Then, we do everything else.

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Now we will talk about the fifth type of pancakes that the project talks about, Pancake with cheese and quinoa pancake

In the previous types, we made each type of pancake separately, and now it is time to mix between the two types between the quinoa flour and enter the cheese with it. You will not get a hybrid variety until it suits the general taste.

We note the reaction of individuals to it, the degree of their acceptance of it, the effects of the two components, and the utilization of both characteristics of those components on the human body.

And now we will show you the ingredients, the way of cooking, and its effect on the body, pictures of the samples that have been manufactured, and the assessments that were taken based on the individuals 'samples of the samples.

We hope that this work has won your admiration and we have provided you with sufficient information about the pancake industry so that our project will be a reference at any time for anyone looking for information related to the pancake industry.

- **Ingredients**

Ingredients

Component	Control	Component	Control	Additions
Quinoa flour	1 cup	salt	1/8 tsp	Feta cheese
egg	1 large	pepper	1/8 tsp	Kiri cheese cubes
Vanillin	1/8 tsp	Paprika	1/8 tsp	Minced thyme
baking powder	1 tsp	milk	1.5 cup	
Minced thyme	1 tsp	butter	1/3 cup	

Methods

1. Sift the flour and salt into a large bowl. Whisk together the egg and milk in another bowl then slowly pour the liquid into the dry ingredients. Whisk together until the batter is smooth. Set aside.
2. For the cheese sauce, melt the butter in a small pan and whisk in the flour. Cook for 1 minute then gradually add the milk whisking continuously. Bring to the boil and reduce the heat to a simmer for 1 minute until the sauce is thick and smooth. Stir in half of the cheese and season with black pepper.
3. To make the pancakes, heat a 20cm/8in crêpe or omelet pan until very hot. Drizzle in a small amount of oil and tip the pan to swirl the oil around. Ladle in about two tablespoons of batter mix and immediately tilt the pan from side to side to get a thin, even layer of batter to cover the base of the pan. Cook for around 30 seconds until the underside is golden then flip or turn with a pallet knife.

4. As soon as the pancake is turned, scatter over some ham, spring onions, and sun-dried tomatoes. Spoon over some cheese sauce then top with a scattering of the remaining cheese.

5. Once you've topped the pancake the underside will be done. Fold the pancake in half then slip it out of the pan onto a warmed serving plate and keep warm under some foil while you make the remaining pancakes

Figure (8)
the top surface of Chesse and Quinoa pancake

Figure (9)
the Lower surface of Chesse and Quinoa pancake

▪ Physical properties of the preparation process

Component	Control	Component	Control
Weight before cookingt	40 g	Thickness	1/2 cm
Weight after cooking	35 g	Cooking time	2 min
Weight before cookingt	11.2 cm		

- **Benefits of chasse on the body**

Dairy products are one of the best dietary sources of calcium and other nutrients. Here are eight ways in which cheese might be healthful.

- **Bone health**
- The calcium, protein, magnesium, zinc, and vitamins A, D, and K content of cheese mean it can contribute to healthy bone development in children and young adults, and osteoporosis prevention.
- Some theories have proposed that eating dairy products leads to higher acid levels in the body and that this can destroy rather than encourage healthy bones. However, scientific evidence does not support this view.

- **Dental health**
- Cheese can enhance dental health. Calcium plays an important role in tooth formation, and cheese is a good source of calcium. Also, at least one study has shown that eating cheese can raise the pH level in dental plaque, offering protection against dental cavities.
- Milk and sugar-free yogurt appear not to have the same effect.

- **Blood pressure**
- Statistics show that people who eat more cheese have lower blood pressure, despite some cheeses being rich in fat and sodium
- Calcium can help reduce blood pressure. Low-fat, low-sodium cheeses are recommended.
- A suitable low-sodium cheese would be low-fat or reduced-fat natural Swiss cheese.

- Other low-fat cheeses include cottage cheese, ricotta cheese, parmesan, feta, and goat's cheese, and low-fat cream cheese.
- Many kinds of cheese are now available in "lite" versions, such as cheddar, brie, Havarti, and feta. Check the nutritional information, because some reduced-fat cheeses have added sodium.
- Due to extreme processing, fat-free cheeses are not recommended as a regular part of the diet, even for those looking to reduce calories or fat.

- **Healthy blood vessels**

- Some cheeses contain high levels of cholesterol and sodium, suggesting that they can lead to cardiovascular problems.
- However, in 2014, researchers concluded that dairy products could be a good source of the antioxidant, glutathione. This antioxidant is crucial for brain health and for preventing age-related neurodegeneration.
- In 2016, scientists also found that the antioxidant properties of cheese may protect against the negative effects of sodium, at least, in the short term.
- In the study, the blood vessels of participants who consumed dairy cheese functioned better than the blood vessels of those who ate pretzels or soy cheese.

- **Gut microbiota and cholesterol**

- As a fermented food, cheese may help boost healthy gut bacteria. This could have a positive effect on blood cholesterol levels

- **A healthy weight**

- Studies show that a person with a high body mass index (BMI) is more likely to have low levels of calcium. Since cheese is a good source of calcium, there may be benefits for people on a weight-loss diet.

- **Omega-3 fatty acids**
- These have been found in some types of cheese, and especially those made from milk produced by cows that eat Alpine grasses. Omega-3 fatty acids are believed to benefit the cardiovascular system and the brain.
- **Healthy cells**
- Cells need protein for building and repair. One ounce of cheddar cheese can offer 7 g of protein. The amount of protein recommended for each person depends on their age, size, and activity level. Use this calculator to find out how much protein you need.
- **Risks**
- Saturated fat
- The 2015 Report of the Dietary Guidelines Advisory Committee (DGAC) recommend limiting fat intake to 20 to 35 percent of daily calories, and saturated fat to less than 10 percent of total calories. This means that someone following an 1800-calorie diet should consume less than 18 grams per day of saturated fat.
- Sodium
- Along with fat, sodium can be high in some cheeses, especially processed cheeses and “cheese flavored” products
- Hormones
- Concerns have been raised about the presence of estrogen and other steroid hormones in dairy produce. These could disrupt the endocrine system and potentially increase the risk of some types of cancer

- **Allergies, intolerances, sensitivity, and interactions**
- Lactose intolerance
- A person with lactose intolerance lacks the enzyme needed to break down and digest the sugar found in milk. Consuming milk and dairy products may result in bloating, flatulence, or diarrhea
- An allergy
- occurs because of an abnormal immunologic reaction to certain triggers, such as milk protein, whether casein or whey. The body's immune system produces an allergic antibody, immunoglobulin E (IgE) antibody when exposed to the trigger.
- Hormones
- Concerns have been raised about the presence of estrogen and other steroid hormones in dairy produce. These could disrupt the endocrine system and potentially increase the risk of some types of cancer
- **Anyone with a milk allergy must avoid all dairy products, including cheese**
- A sensitivity to casein
- a protein found in milk, can trigger inflammation throughout the body, producing symptoms such as sinus congestion, acne flares, skin rash, and migraines.
- Phosphorus
- is present in high quantities in some cheeses. This may be harmful to those with a kidney disorder. If the kidneys cannot remove excess phosphorus from the blood, this can be fatal.

- High calcium intake
- has been linked to an increased risk of prostate cancer in some studies, but other investigations have found no associations between the two.
- Monoamine oxidase inhibitors (MAOIs)
- are drugs used to treat depression and Parkinson's disease. People using these drugs may need to avoid foods with high levels of the amino acid tyramine, found naturally in aged cheeses, cured meats, pickled foods, beer, and wine. The longer the food is aged, the higher the tyramine content.
- Migraines and headaches
- have also been associated with tyramine-containing foods. A food diary may help identify if tyramine-containing foods are triggering symptoms.
- **The effect of Quinoa on the body, Quinoa low-calorie pancakes**
- Quinoa is a whole grain that is rapidly growing in popularity due to its many health benefits.
- Although people can cook and eat quinoa seeds in a similar way to most grains, the quinoa plant itself is more similar to beetroots and spinach. People can eat both the seeds and leaves of this versatile, nutritious plant.
- Farmers cultivate over 120 different types of quinoa. However, the most common versions available in grocery stores are white, red, and black quinoa

- **Benefits**
- A plant-based source of protein
- People following a plant-based diet need to find nonanimal sources of protein to ensure they are getting enough.
- One cup of cooked quinoa weighing 185 grams (g) provides 8.14 g of protein.
- The proteins in quinoa offer a wide range of amino acids. Amino acids are vital for supporting muscle development and immune activity, among other essential functions.
- High fiber content
- Quinoa has a high fiber content compared with other grains, providing 5.18 g in a single 185 g cup. This equates to at least 15.42% of a person's daily requirement, depending on their age and sex.
- Diets rich in fiber may also promote a healthy weight. This is because foods high in fiber help people feel fuller for longer, potentially reducing their overall intake of food.
- A source of antioxidants
- Quinoa is a good source of antioxidants compared with other common grains in a gluten-free diet. Most gluten-free products consist of corn, rice, or potato flour.
- Quinoa provides vitamin E. This is an antioxidant compound that may help reduce the risk of coronary heart disease, certain cancers, and several eye disorders.

- **Helps meet manganese requirements**
- One cup of cooked quinoa contains 1.17 milligrams (mg) of manganese. This accounts for around 27.43% of the adequate intake of manganese for males and 35.05% for females.
- Manganese is essential for development and metabolism. This element also works alongside many enzymes in the body to support their function
- **Good source of iron**
- One cup of quinoa supplies 2.76 mg of iron, providing 34.5% of the recommended intake for males and 15.33% for females. Maintaining adequate levels of iron is essential for good health.
- Iron is necessary for a range of processes in the human body. It is, for example, an essential part of hemoglobin
- **A source of folate**
- Folate is an essential B vitamin that plays a key role in the formation of DNA. Women must obtain enough folate during pregnancy to reduce the chance of neural tube defects in their babies, according to the Office of Dietary Supplements (ODS).
- Pregnant women may only be able to get enough folate by taking folic acid supplements. However, consuming more folate in the diet can reduce the risk of deficiency. Quinoa provides a good proportion of a person's daily folate value.

- **Provides magnesium**
- One cup of cooked quinoa contains 118 mg of magnesium. Although the daily recommended amount increases with age, quinoa is a good source of the mineral.
- The ODS suggest that low levels of magnesium have possible links to the following health concerns:

1. high blood pressure
2. cardiovascular disease
3. type 2 diabetes
4. migraine

- **Contains quercetin and kaempferol**
- Quinoa contains the plant compounds quercetin and kaempferol.
- These antioxidants may protect against a range of chronic conditions. For example, according to some research, kaempferol may help protect against infection, heart disease, diabetes, and several cancers, including those of the skin and liver.
- Quercetin may also help boost the body's defenses against infection and inflammation.

the summery of project

Made with love

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Chapter 6 The Summery Of Project

- In this project, several points were talked about the pancake industry in detail, where the pancake was discussed, its history and how it looked, then we touched on the pancake industry around the world level and its form in different countries and the name of the publisher there and the characteristics of its manufacture and its difference from country to country where we find that every country Or a popular culture that has a pancake industry, but in a different way, we finally find that the pancake industry is very widespread and has very many forms, which made talking about its industry important from the nutritional point of view to talk about a meal that is considered one of the most widespread and eating meals around the world, so it must be studied in terms of food and detail Contents for that started with the basic ingredients included in the pancake industry such as (sugar - eggs - milk - vegetable and animal oils - baking powder - salt - vanilla -) and we talked about these components in terms of definition and history, since we specialize in the field of food processing had to be From talking about these components from a nutritional and chemical point of view and their effect on the human body and its nutritional content and collecting all the important information that pertains to these components and their damages or their benefits and calories a For the thermals in it After elaborating on the ingredients, we moved on to talk about the solid of the project once again, which is making pancakes to be more suitable for human health and trying to develop from it to make human health better. And we called the healthy pancakes project, and this project depends on making five types of different pancakes first. The pancake industry with sugar, and we talked about it about the components of manufacturing, the method of manufacture,

- and the physical characteristics of the process of manufacturing and the product, and then talking about the effect of sugar on human health and the content of this product of calories, vitamins, and salts along with pictures of the final product and the individuals' assessments of this factory product and the reaction of them to them then we moved to The manufacture of low-calorie pancakes. Steps were made again with this product. These steps are continued with the five varieties that were manufactured. The third type was the low-calorie pancake made with quinoa flour. The effect of quinoa flour was clarified, and then we moved to the fourth category of sharp pancake made with Quinoa flour and the last type is the sharp pancake, and the difference between the words of each of them is explained, the characteristics of each type, its harmfulness, contamination, and nutritional intake on humans Its content is calories, and by this we have provided a detailed explanation of the history of the pancake industry and we have tried to list everything that surrounds this industry to seek us to develop an important industry such as the pancake industry and in the end we hope that we have fulfilled the explanation and we have agreed to deliver the information and clarify the importance and benefits of the dairy industry Cakes We hope that this project will be liked by you and be complete with all the information you need to know about this product Thanks

Chapter 6
The Summery Of Project

فى هذا المشروع تم التحدث عن نقاط عديدة حول صناعة البان كيك تفصليا حيث تم التحدث عن البان كيك وتاريخه وكيف بدا ثم تطرقنا الى صناعة البان كيك حول مستوى العالم وشكله فى مختلف الدول واسمه المنشر هناك ووصفات تصنيعه واختلافه من دولة الى دولة حيث نجد ان كل دولة او ثقافة شعبية لديها صناعة البان كيك ولكن بشكل مختلف لنجد اخيرا بان صناعة البان كيك منتشره جدا ولها اشكال عديده جدا مما جعل التحدث عن صناعتها امر مهم من الناحيه الغذائية للتحدث عن وجبه تعتبر من اكثر الوجبات انتشارا واكلا حول العالم لذا وجب دراستها من الناحية الغذائية وتفصيل محتوياتا لذلك بدانا بالمكونات الاساسية الداخلة فى صناعة البان كيك مثل (السكر – البيض – اللبن – الزيوت النباتيه والحيوانية – البيكنج بودر – الملح – الفانيليا -) وقد تناولنا الحديث عن هذه المكونات من الناحية التعريفية والتاريخيه وبما اننا متخصصون فى مجال التصنيع الغذائى كان لا بد من التحدث علي هذه المكونات من الناحية الغذائية والكميائية وتاثيرها على جسم الانسان ومحتواها الغذائى وجمع جميع المعلومات الهامه التى تخص هذا المكون ات وما لها من اضرار او فوائدها والسعرات الحرارية الموجودة بها وبعد الاستفاضه فى الحديث عن المكونات انتقلنا الى الحديث عن صلب المشروع مرة اخرى الا وهى صناعة البان كيك ليكون اكثر ملائمة لصحة الانسان والمحاولة للتطوير منه بما يجعل صحة الانسان افضل واطلقنا على المشروع البان كيك الصحى وهذا المشروع يعتمد على صناعة خمس انواع من البان كيك المختلف اولهم صناعة البان كيك بالسكر وتحدثنا فيه عن مكونات التصنيع وطريقة التصنيع والصفات الفيزيائية لعملية التصنيع والمنتج ومن ثم التحدث عن تاثير السكر على صحة الانسان ومحتوى هذا المنتج من سعرات وفيتامينات واملاح مرفقا معه صور للمنتج النهائى وتقييمات الافراد لهذا المنتج المصنع ورد الفعل منهم عليها من ثم انتقلنا الى صناعة البان كيك منخفض السعرات وتم عمل الخطوات مرة اخرى مع هذا المنتج وهذه الخطوات مستمره مع الخمس اصناف التى تمت صناعتها وكان النوع الثالث هو البان كيك منخفض السعرات المصنوع ب دقيق الكينوا وتم توضيح تاثير دقيق الكينوا ومن ثم انتقلنا الى الصنف الرابع البان كيك الحادق المصنوع ب دقيق الكينوا

والنوع الاخير هو البان كيك الحادق وتم توضيح الفرق بين كلام منهما ومميزات كل نوع واضراره ان وجدث وتاصيره الغذائى على الانسان ومحتواه من السعرات وبهذا نكون قد قدمنا شرحا تفصيليا عن تاريخ صناعة البان كيك وحاولنا ان نسرد كل ما يحيط بتلك الصناعه للسعى منا الى تطوير صناعة هامة مثل صناعة البان كيك وفى النهاية نتمنى ان نكون قد وفينا الشرح ووفقنا فى ايصال المعلومه وتوضيح اهمية وفوائد صناعة البان كيك متمنين من الله ان ينال هذا المشروع اعجابكم ويكون وافى بكل المعومات المراد معرفتها عن هذا المنتج شكرا

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9 out of 10 people love chocolate. And the 10th person is always lying

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Our Recommendation

Good food ends with good talk

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Recommendation

This is this study for the purpose of producing healthy pancakes. This will be done by adding quinoa flour, honey, oil, Paprika, thyme, cheese, fruits, fructose sugar, whole-fat and whole milk to the cake, which can be used for diabetics and obesity as it helps to satisfy with many other benefits.

- A sensory evaluation of the samples of the resulting cake, both the control sample and the other samples, was done as follows: -
- - The control sample, which was made from plain flour, caster sugar, egg, skimmed milk, butter, melted, vanilla extract, sunflower oil,

1. sample No (1) manufactured from plain flour and added to each of the ingredients (skimmed milk, egg, vanilla, skimmed milk, baking powder, caster sugar with additions caramel, white honey, chocolate, sugar, powdered milk, fruits
2. sample No (2) manufactured from toasted quinoa flour and added to each of the ingredients (baking powder, baking soda, almond milk, eggs, maple syrup, sunflower oil, apple cider vinegar with additions caramel, white honey, chocolate, sugar, powdered milk, fruits
3. sample No (3) manufactured from all-purpose flour and added to each of the ingredients (egg, Vanillin, Egg yolk, baking powder, Minced thyme, salt, pepper, skimmed milk, Paprika, melted butter with additions Feta cheese, Kiri cheese cubes, Minced thyme
4. sample No (4) manufactured from toasted quinoa flour and added to each of the ingredients (baking powder, baking soda, almond milk, eggs, maple syrup, sunflower oil, apple cider vinegar with additions Feta cheese, Kiri cheese cubes, Minced thyme

Recommendation

- **The results of the sensory evaluation showed that the control sample was the best samples to obtain the highest values followed by the sample N (3) and processed from Cheese followed by the third sample manufactured from cheese & and quinoa flour No(4) manufactured from quinoa flour followed by the forth sample manufactured from honey & and quinoa flour No(2) and finally the sample No(1)**
- The sample (2) is the high sample of nutritional value and has many nutritional functions besides it is saturated and useful in the treatment of obesity.
- **And We recommend that**
- Pancake is an ideal breakfast that can stretch the body with the energy needed
- Pancakes should be eaten immediately after cooking, and it is not recommended to reheat them
- Low-calorie pancakes can be used in diets to lose weight
- Quinoa flour was used as a substitute for wheat flour to raise the nutritional value of pancakes
- These products can be sold fresh and packaged under vacuum on the market
- Pancake containing quinoa flour has a strong smell, pungent taste, despite its high nutritional value.
- It is recommended to try low calorie pancakes as it is most suitable for consumers' taste
- There are some people whose taste tends more to citrus than sugars, so cheese pancakes are the right choice for them
- Low-calorie pancakes containing quinoa flour can be used to feed athletes as it is rich in fiber and a source of protein

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برنامج تكنولوجيا علوم الاغذية

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برنامج علوم وتكنولوجيا الأغذية

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جمهورية مصر العربية
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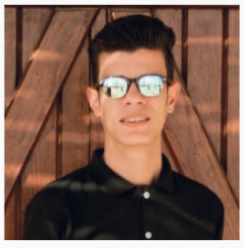
A pancake (or hotcake, griddlecake), or flapjack, not to be confused with oat bar flapjacks) is a flat cake, often thin and round, prepared from a starch-based batter that may contain eggs, milk and butter and cooked on a hot surface such as a griddle or frying pan, often frying with oil or butter. Archaeological evidence suggests that pancakes were probably the earliest and most widespread cereal food eaten in prehistoric societies.

Pancakes may be served at any time of the day with a variety of toppings or fillings but in America they are typically considered a breakfast food. Pancakes serve a similar function to waffles. In Britain and the Commonwealth, they are associated with Shrove Tuesday, commonly known as "Pancake Day', when, historically, perishable ingredients had to be used up before the fasting period of Lent.

project team



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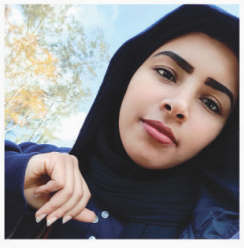

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