



Super Seeds

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Super Seeds

- You've heard about nuts, but what about seeds?
- These **precious little packages of nutrient glory** are popping up everywhere, and for good reason.
- They're **nutritional powerhouses—loaded** with dietary fiber, protein, healthy fats, vitamins, minerals, and antioxidants.
- There are many different types of seeds to choose from, and they're easy to incorporate into a variety of dishes, adding a boost of flavor, nutrition, and crunch.



Super Seeds

- Chia
- Flax
- Hemp
- Pumpkin
- Sunflower
- Quinoa
- Pomegranate
- Sesame Seed









Chia



These tiny black and white seeds grown in Mexico and South America, are said to have been used by the Mayan and Aztec cultures for supernatural powers.

- Form: Whole or ground
- Taste/Texture: Similar to poppy seeds; dense and crunchy
- Chia comes from a desert plant in Mexico called *Salvia hispanica* and is **packed with omega-3 fatty acids, carbohydrates, protein, dietary fiber, antioxidants, and calcium.**

Chia Seeds



- The **chia seed** has stolen the limelight showing up in everything from energy bars to cereals to beverages.
- These tiny black and white seeds were used long ago by Mayan and Aztec cultures to **boost energy.**
- Because they have a mild, nutty flavor, chia seeds are **easy to add to a variety of foods and drinks.**

Chia Seeds

- Chia seeds come from a flowering plant in the **mint family** that's native to Mexico and Guatemala
- It has remained in regular use in its native countries, but was largely unknown in North America until researcher Wayne Coates began studying chia as an alternative crop for farmers in northern Argentina about 29 years ago.

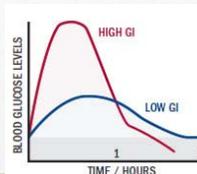
Chia Seeds

- A 2-tablespoon (1-ounce) serving contains 138 calories and 9 grams of fat, along with a whopping **12 grams of fiber, 6 grams of protein, 6 grams Omega-3 fatty acids** and **16% of the daily value for calcium**.
- Chia contains the **highest amount of omega-3 fatty acids of any plant known**
- Chia seeds have **more** Omega-3s than you'll find in flaxseed.



- In one study of **type 2 diabetics** at the University of Toronto, people who received **37 grams (about 2 ½ Tbsp)** of chia daily for 12 weeks experienced **decreases in blood pressure, inflammation, and blood sugar** that were **significant enough to lower their risk for heart disease**.
- 1 Tablespoon of Chia seeds is 15 grams.
- The same researchers also found that in healthy people, 15—24 grams (1-1 ½ Tbsp) of daily chia **reduced blood sugar levels and appetite** for up to two hours after a meal.

Combat Diabetes



- Chia is being studied as a potential **natural treatment for type-2 diabetes** because of its ability to slow down digestion.
- The gelatinous coating chia seeds develops when exposed to liquids-can also prevent blood sugar spikes.
- Just a 28-gram (about 2 Tbsp) or one-ounce serving of chia has 12 grams of dietary fiber — **about a third of the recommended daily intake for adults**
- Adding some chia to your diet is an easy way to make sure you're getting a good amount of **fiber**, which is important for digestive health and also **helps prevent blood sugar spikes**

Chia Seeds



- Chia seeds are **packed with omega-3 fatty acids**, with **6 g in a one-ounce serving**.
- These fats are important for **brain health**.
- **Better conversion** of omega 3s into the plasma than with flax seed
- A serving of chia seeds has **16% of the recommended daily intake for calcium**, for maintaining bone and oral health, and preventing osteoporosis.

Chia Seeds

- Chia seeds also make a great source of protein for vegetarians and don't have any cholesterol.
- One 28-gram serving (2 Tbsp) of these super seeds has 6 grams of protein, nearly 10% of the daily value.
- **Tryptophan, an amino acid found in turkey**, is also found in chia seeds.
- While tryptophan is responsible for that strong urge to nap after a big Thanksgiving dinner for example, it also helps regulate appetite, sleep and improve mood.

Chia Seeds



- According to the Cleveland Clinic, [chia seeds have been shown to improve blood pressure in diabetics](#), and may also increase healthy cholesterol while lowering total, LDL, and triglyceride cholesterol.
- To **curb appetite**, mix 1 Tbs. of chia with room-temperature water, and drink either before a meal or when hunger strikes between meals. If you prefer, flavor it with fresh lemon, lime, and/or stevia.

Chia Seeds

- The outer layer of chia seeds **swells when mixed with liquids to form a gel**.
- This can **used in place of eggs to lower cholesterol and increase the nutrient content of foods and baked goods**. To make the egg replacement, mix 1 tablespoon of chia seeds with 3 tablespoons of water and let sit for 15 minutes.
- **How to eat:** Sprinkle chia seeds in with your oatmeal, smoothie, cereal, salad, rice, or baked goods for an added boost of nutrition and flavor.

Lemon Chia Pudding

- **Ingredients**

- 1 tablespoon olive oil
- 2 tablespoons maple **sugar** (or regular sugar)
- 2 tablespoons maple **syrup**
- 1 large lemon, zest and juice
- 1 cup nondairy milk, such as coconut or almond milk
- 1/4 cup chia seeds



- Blend together the olive oil, maple sugar, maple syrup, lemon zest and juice, and almond milk. Add chia seeds, whisk together and let sit for 15 minutes until gelled. **Serves 4**
- 1/2 cup: 248 calories, 19 g fat, 12 g saturated (coconut milk) 0 mg cholesterol, 10 mg sodium, 21 g carbs, 4 g fiber, 3 g protein

Blueberry Jam Chia

- 1 1/4 cup frozen wild blueberries
- 1 1/2 tablespoons pure maple syrup
- 1 tablespoon chia seeds
- 1/2 teaspoon vanilla extract (fresh minced ginger or lemon juice also work well as flavoring agents in this jam)



- In small saucepan over medium heat, add blueberries and maple syrup. Stir and cook the blueberry mixture for 10 minutes. Use a potato masher to mash blueberries.
- Next, add 1 tablespoon of chia seeds and continue to cook and stir for about 2 to 3 minutes or until blueberry mixture resembles a jam consistency. Remove from heat and blend in vanilla extract. Refrigerate and use within a week. **Serves 6.**
- 1 Tbsp: 39 calories, 1 g fat, 0 g sat. fat, 0 mg cholesterol, 1 mg sodium, 8 g carbs, 1 g fiber, 0 g protein

Chocolate Chia Protein Pudding

- 1/2 cup unsweetened vanilla almond milk
2 TBS **Spectrum Decadent Blend (this has chia)**
1/2 cup plain Greek yogurt (or coconut Greek yogurt)
1 tsp honey (or pure maple syrup)
1 tsp pure vanilla extract
Sliced strawberries
Small handful toasted almonds



- NOTE: If you can't find Spectrum's Decadent blend, which also has flax, chocolate and coconut in it, you can use plain chia seeds (then it's just chia protein pudding because Decadent is where the chocolate comes in).
- Mix 2 TBS of Decadent (or chia seeds) with the almond milk.
Let sit for at least 30 minutes, to allow it to gel
Add the yogurt and mix well
Add the honey, vanilla extract and mix together
Top with sliced strawberries and toasted almonds
- Calories: 268, Carbs: 19, Fiber 5 g, Protein 17 g, Fat 14 g

Decadent Blend

- Cold milled ground chia seed, dried coconut, organic cold milled ground flax seed, organic fair trade alkalized cocoa powder, organic evaporated cane syrup.



Flaxseed



- Cultivated in Babylon as early as 3000 BC, flaxseeds have long been known to provide medicinal benefits.
- Rich in omega-3 fatty acids, dietary fiber, and lignans (beneficial plant compounds), recent studies show flaxseeds may help reduce belly fat and lower your risk of heart disease, cancer, stroke, and diabetes.
- Flaxseeds are widely available in products such as frozen waffles, cereals, and meatless meal products.
- When adding them to foods it's best to eat them in the ground form for better absorption of the nutrients.
- You can easily grind them yourself in an electric coffee grinder or buy them pre-ground



Flax



- Forms: Brown or golden; whole, ground flaxseed meal, or flaxseed oil
- Taste/Texture: Slightly nutty; crunchy when whole
- Benefits: Excellent source of omega-3s, fiber and antioxidants
- Use: Pancakes, topping for casseroles, sprinkle on salads, in cottage cheese or yogurt

Flaxseed

- Flaxseed, also known as **linseed**, has been extensively studied by nutrition researchers in recent years.
- Some have called it a "designer food," "nutraceutical" or "functional food" because of its potential health benefits.



Flaxseeds



- Scientists have examined compounds in flax known as lignans, which are phytoestrogens (plant estrogens) similar to compounds found in soy products.
- Lignans may help protect against certain types of cancer (including **cancers of the breast and prostate**) and heart disease and may reduce symptoms of menopause in some women.

Flaxseed Lignans

- Lignans are fiber-like compounds, but in addition to their fiber-like benefits, they also provide **antioxidant protection due to their structure as polyphenols.**
- The unique structure of lignans gives them a further health-supportive role to play, however, in the form of **phytoestrogens.**
- Along with isoflavones, **lignans are one of the few naturally occurring compounds in food that function as weak or moderate estrogens when consumed by humans.**
- Among all foods commonly eaten by humans, researchers rank flaxseeds as the number one source of lignans.

Flaxseed Lignans

- The antioxidant and anti-inflammatory benefits of flaxseeds also make them a logical candidate for **cancer prevention.**
- That's because **chronic inflammation (even low level inflammation) and chronic oxidative stress** are risk factors for cancer development.
- In the case of flaxseeds, evidence of risk reduction is strongest for **breast cancer, prostate cancer, and colon cancer.**
- Breast cancer and prostate cancer are included in the list of cancers know as **"hormone-related" cancers.**

Flaxseed Lignans

- The lignans provided by flaxseed have also been shown to spark increased activity by certain Phase II **detoxification enzymes** that are responsible for deactivating toxins in the body.
- This support of the detox process **may help prevent accumulation of toxins** that might otherwise act as carcinogens and increase cancer risk.



Flaxseeds

- When we think about antioxidant-rich foods, the first foods that come to mind are typically vegetables and fruits.
- Of course, foods in both of these food groups can be outstanding sources of antioxidants!
- Yet according to recent research, flaxseeds also belong high up on our list of antioxidant-rich foods.
- When flaxseeds are compared with other commonly eaten foods in terms of their total polyphenol content (polyphenols are one very important group of antioxidants), **flaxseeds rank 9th among 100 commonly eaten foods.**

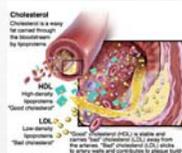
Flaxseeds

- Flaxseeds turn out to be significantly higher in polyphenol antioxidants than fruits like blueberries or vegetables like olives.
- The antioxidant benefits of flaxseeds have long been associated with prevention of cardiovascular diseases and have recently also been tied to decreased insulin resistance.
- Given the strong track record of flaxseeds as foods providing cardiovascular benefits, it's not surprising to see recent research studies showing benefits of flaxseeds for improvement of metabolic syndrome (MetS).

Flaxseeds

- One recent study showed a 20% decrease in the prevalence of Metabolic syndrome after 12 weeks on a diet plan that included 30 grams (1 ounce) of ground flaxseed per day in the form of flaxseed-enriched baked bread
- Interestingly, in addition to improving blood pressure and lowering fasting glucose level, flaxseed intake also helped decrease central obesity (as measured by waist circumference)
- The addition of flaxseed provided all of these health benefits without causing weight gain.
- That's quite an accomplishment for a food that is over 70% fat in terms of total calories and contains about 10 times as many calories per cup as a fruit like blueberries.

Flaxseeds



- Intake of flaxseeds has also been shown to **decrease the ratio of LDL-to-HDL cholesterol** in several human studies and to increase the level of apolipoprotein A1, which is the major protein found in HDL cholesterol (the "good" cholesterol).
- This HDL-related benefit may be partly due to the simple **fiber content** of flaxseeds, since 2 tablespoons of ground flaxseed provide about 4 grams of dietary fiber.

Flaxseeds

- Flaxseed contains dietary fiber that may help control cholesterol levels.
- In one study, a group of people with slightly elevated cholesterol levels ate six slices of wheat bread a day for four weeks and, for the second four weeks of the study, ate six slices of bread daily containing 30% flaxseed.
- At the end of the flaxseed study, the subjects had lowered their LDL cholesterol ("bad cholesterol") levels by 19% and their overall cholesterol level by 6.9 %, while not affecting their HDL ("good cholesterol") levels.

Flaxseeds



- The primary omega-3 fatty acid in flaxseeds—alpha-linolenic acid, or ALA—can be helpful to the cardiovascular system in and of itself.
- As the building block for other messaging molecules that help prevent excessive inflammation, ALA can help protect the blood vessels from inflammatory damage.
- Numerous studies have shown the ability of dietary flaxseeds to increase our blood levels of ALA, even when those flaxseeds have been ground and incorporated into baked goods like breads or muffins.
- When flaxseeds are consumed, two other omega-3 fatty acids have also been shown to increase in the bloodstream, namely, eicosapentaenoic acid (EPA) and docosapentaenoic acid (DHA).
- Increases in EPA and DPA also help provide inflammatory protection.

Flaxseeds

- Protection of our blood vessels from inflammatory damage is also provided by the lignans in flaxseeds.
- These lignans can inhibit formation of platelet activating factor (PAF), which increases risk of inflammation when produced in excessive amounts.
- The overall anti-inflammatory benefits of ALA and lignans in flaxseeds has been further corroborated by studies in which flaxseed-enriched baked goods (like muffins) lead to decreases of 10-15% in C-reactive protein (CRP) levels.
- CRP levels are a commonly used indicator of inflammatory status in the cardiovascular system.

Flaxseeds



- Numerous studies have shown the ability of increased omega-3 fatty acid intake to **help regulate blood pressure and to help reduce blood pressure** in persons who have been diagnosed with hypertension.
- With its excellent content of the omega-3 fatty acid alpha-linolenic acid (ALA), flaxseed can definitely help us increase our overall omega-3 intake and, by doing so, decrease our risk of high blood pressure.

Flaxseed



- Farmers have incorporated 10 to 20% flaxseed into the diets of laying hens to change the fat composition of the eggs without adversely affecting the flavor or other properties.
- These **eggs are high in omega-3 fatty acids** because the feed is high in omega-3 fatty acids

Flaxseed



- **Do not use them whole.** Whole flaxseeds pass through the system without being digested.
- Flaxseeds should be ground to get the most omega-3s and soluble fiber, which helps with elimination.
 - *Tip: A basic coffee grinder can be used to grind a few tablespoons of whole flaxseed whenever you need it.*
- **Flaxseed oil is a rich source of omega-3 fatty acids**, but it does **not** contain any fiber – so if digestive benefits are your primary concern, go for ground flaxseeds instead.
- **Refrigerate flaxseed oil and ground flaxseed meal.** Like any oil, products containing flaxseed oil can become rancid (spoiled) over time. Keeping these foods refrigerated preserves them longer.
 - *You'll know when flaxseed products start to go bad by the smell.*

Flaxseed Oil



- Flaxseed oil is **especially perishable** and should always be purchased in **opaque bottles that have been kept refrigerated.**
- Flaxseed oil should have a sweet nutty flavor.
- The use of flaxseed oil in cooking is **not recommended**, since it is far too easily oxidized.
- However, it's fine to add flaxseed oil to foods after they have been cooked.

Ideas for Including Flaxseeds in Your Diet:

- Add ground flaxseed to **cereal**, hot or cold.
- Stir ground flaxseed into some **juice**.
- Sprinkle ground flaxseed onto **salad**.
- Include flaxseed oil in your **salad dressing mix**.
- Use flaxseed meal in your **baking** or even as an addition to meatloaf or other similar dishes.
- Note: There is no recommendation for how much flaxseed you should include in your diet, so follow the recommendations for dietary fiber and omega-3 fatty acids, usually **1-2 Tablespoons a day**
- If you have not previously had much fiber in your diet, increase your consumption **slowly and drink lots of water**.



Cooking with Flaxseed

- What about the impact of oven temperatures on omega-3 fatty acids in the flax?
- According to several recent studies, the answer to this question is—"No problem!"
- Two recent studies: flaxseeds were ground and added to baked goods, using oven temperatures of at least **300F (150C)**.
- The shortest baking time was 15 minutes and the longest was 3 hours.
- In all cases, the omega-3 content of the flaxseed (primarily alpha-linolenic acid, or ALA) **remained stable and intact**.
- That's great news for anyone wanting to include flaxseed not only to muffins and cookies or breads, but also to other oven-baked items like pizza crusts, dinner rolls, or casseroles.



Flaxseeds



- Flaxseeds can be purchased either whole or already ground. The two different forms offer distinct benefits.
- Because flaxseeds can be very difficult to chew, grinding of the seeds prior to consumption increases their digestibility.
- However, grinding takes time, and pre-ground flaxseeds can have great convenience.
- On the other side of the coin, pre-ground flaxseeds—while more convenient—also come with a **shorter shelf life than whole flaxseeds**
- Ground flaxseeds—even when carefully packaged in a gas-flushed, light-protective pouch and refrigerated after opening—typically last **about 6-16 weeks**.

Flaxseed

- Whole flaxseeds, on the other hand, will typically last for **6-12 months** when stored in an airtight container in a dark, cool dry spot
- If you purchase whole flaxseeds, either store them in an airtight container in a dark, dry and cool place or place their airtight container directly in the refrigerator.

Flaxseed

- Ground flaxseeds are usually available both refrigerated and non-refrigerated.
- If you are purchasing ground flaxseed that is sitting on the store shelf at room temperature, it is highly recommended that the flaxseed be **packaged in a gas-flushed, vacuum-sealed bag**.
- If you are purchasing ground flaxseed that is found in the refrigerator section, it's not essential that vacuum-sealed packaging be used, but it can still be helpful from a food quality standpoint.
- Regardless of the form in which you purchase your ground flaxseeds, you should **keep their container in the refrigerator after opening**.

Flaxseed

- The reason for all of this extra precaution is simple: once flaxseeds are ground, they are much more prone to **oxidation and spoilage**.
- Similarly, if you are grinding whole flaxseeds on your own at home (for example, in a small spice or coffee grinder), you'll want to **store them in the refrigerator in an airtight container**.
- If using glass, you may also want to use a **darkened glass** as that will lessen exposure of the ground flaxseeds to light.

Hemp Seeds



- Hemp is one of the earliest domesticated plants known.
- Hemp use archaeologically dates back to the Neolithic Age in China, with hemp fiber imprints found on Yangshao culture pottery dating from the 5th century BC.
- The Chinese later used hemp to make clothing, shoes, ropes, and an early form of paper.
- The world leading producer of hemp is China with smaller production in Europe, Chile and North Korea.
- While more hemp is exported to the United States than to any other country, the United States Government does not consistently distinguish between marijuana and the non-psychoactive Cannabis used for industrial and commercial purposes

Hemp



- American production of hemp was encouraged by the government in the 17th century for the production of rope, sails, and clothing.
- During World War II, the U.S. Government at one point required farmers in many states to grow hemp through the Hemp for Victory program
- The country, cut off from traditional fiber suppliers from Asia, was in need of fiber for ropes, clothes and other textiles
- Hemp was allowed to be exchanged as legal tender in Pennsylvania, Virginia, and Maryland.
- Domestic production flourished until after the Civil War, when imports and other domestic materials replaced hemp for many purposes.
- In the late nineteenth century, marijuana became a popular ingredient in many medicinal products and was sold openly in public pharmacies.

Hemp



- Hemp is a plant in the **same family as marijuana**, though it **lacks its cousin's high levels of THC** and is therefore much less potent.
- **You can't** get high from **hemp**, but starting in 1937, U.S. drug laws made cultivating it off-limits. Finally, the U.S. **hemp** industry is back. A provision in the 2014 farm bill signed by President Obama on Feb. 7 removed **hemp grown** for research purposes from the Controlled Substances Act, the main federal drug law.
- Hemp is used to create numerous products, including cooking oil, clothing, paper, and rope.

Hemp

- One of the linolenic acids contained in hempseed oil is an omega-3 fatty acid
- Sterols found in hemp are useful in lowering cholesterol, and daily dietary intake of sterols has been linked to a lower risk of heart attack.
- The aliphatic alcohols contained in hempseed oil have also been known to **lower cholesterol and reduce platelet aggregation**.
- One of these alcohols, phytol, is associated with antioxidant and anticancer benefits, and can also be found in healthy foods such as spinach, beans, raw vegetables and asparagus.



- Another antioxidant in hempseed oil is tocopherol, which is known to be beneficial against degenerative diseases, such as [atherosclerosis](#) and Alzheimer's.
- Hempseed also has high levels of [vitamins A, C and E](#) and β -carotene, and it is rich in minerals like phosphorus, potassium, magnesium, sulfur and [calcium](#).
- As a food, hempseed oil is nutritious - it contains an excellent balance of polyunsaturated fatty acids

Hemp Seeds



- Hemp foods are expanding on the shelves of grocery and natural food stores in everything from salad dressings to chips to frozen desserts, being promoted by marketers for their exemplary nutritional and taste benefits.
- The hulled version of the seed is soft and easy to chew and tastes a bit like pine nuts or sunflower seeds.
- Hemp seeds are an **excellent source of essential fatty acids** and **contain all nine essential amino acids**, making them a complete protein source.
- Plus, the protein in hemp seeds is very easy to digest.



- Hemp hearts (also known as “shelled hemp seeds” or “shelled hempseed”) are a rich source of nutrition, putting them in the “superfoods” category.
- Hemp Hearts are raw, shelled hemp seeds
- Hemp hearts typically contain 33% protein, 9% omega-3 essential fatty acids, and are an excellent source of iron, vitamin E and GLA (gamma-linolenic acid), an Omega-6 fatty acid.
- Hemp seeds contain **all the essential amino acids**
- Amino acids help form protein in the body and are key to tissue repair as well as overall growth



- The protein profile in hemp hearts makes them **one of the densest sources of plant protein**, which can be of significant benefit to vegetarians, athletes and anyone looking to add a healthy source of protein to their diet
- The protein and fiber in hemp combine to **slow digestion**, which prevents spikes in blood sugar and therefore sustains your body’s energy.
- A diet rich in hemp promotes **digestive regularity**

Hemp

- 3 Tbsp has 170 calories, 13 g fat, 1.5 g saturated fat, 3 g fiber, 10 g protein



Hemp



- Taste/Texture: Nutty like pumpkin seeds; tender
- Benefits: Contains almost as much protein as soybeans; rich in vitamin E
- Use: Topping for oatmeal, grain dishes or fish
- Try adding to both hot and cold cereals, blending into your favorite smoothies, sprinkle on top of salads, soups, and even ice cream, and add hemp hearts to baked goods for a nutritious and nutty boost.



- Hemp milk, which is made by crushing the seeds of the cannabis plant and mixing them with water.
- Hemp milk is a good source of Omega 3 fatty acids, which have been found to be good for both the heart and brain

Hemp Seeds



- It is best to keep hemp hearts **refrigerated and airtight**.
- Larger quantities can even be frozen, such as a bulk 5-pound bag.
- This will help protect the quality of your hemp hearts.

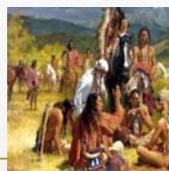


Pumpkin



- Taste/Texture: Sweet and nutty; chewy
- Benefits: Rich in vitamin K, iron, manganese, magnesium and phosphorous
- Use: Cereal, salads, topping for soup or stew
- In addition, the kernels can be salted or sweetened. In Mexico, the seeds are usually toasted and flavored with salt, [lime](#), or [chili peppers](#), and eaten as snacks.
- Pumpkin seeds are one of the ingredients in the *Mexican mole sauce*

Pumpkin Seeds



- Pumpkin seeds were a celebrated food among many Native American tribes, who treasured them both for their dietary and medicinal properties.
- In South America, the popularity of pumpkin seeds has been traced at least as far back as the Aztec cultures of 1300-1500 AD

Pumpkin Seeds



- The pumpkin plant, along with its seeds, has been used in the traditional medicine of many countries, including India and Mexico.
- Pumpkin seeds **promote good prostate health and offer anti-inflammatory and cholesterol-lowering benefits.**
- Subtly sweet and nutty with a somewhat chewy texture, pumpkin seeds are **lower in fat than other seeds** and offer essential minerals like iron, magnesium, and potassium.
- Pumpkin seeds also contain protective compounds called **phytosterols**, which likely contribute to their known **prostate and heart health benefits.**

Pumpkin Seeds



- Pumpkin seeds are especially rich in mono-unsaturated fatty acids (MUFA) like **oleic acid** (18:1) that **helps lower bad LDL cholesterol and increases good HDL cholesterol in the blood.**
- Research studies suggest that the Mediterranean diet, which is liberal in monounsaturated fatty acids help to **prevent coronary artery disease and strokes** by favoring healthy blood lipid profile.



- The seeds contain good-quality protein.
- ¼ cup has about **10 grams of protein**
- In addition, the seeds are an excellent source of amino acid **tryptophan**.
- Tryptophan is converted into serotonin in the brain
- Serotonin is a beneficial neuro-chemical often labeled as **nature's sleeping pill**.
- Further, tryptophan is a **precursor of B-complex vitamin, niacin (60 mg of tryptophan = 1mg niacin)**.

Pumpkin Seeds

- Pumpkin seeds contain conventional **antioxidant** vitamins like vitamin E.
- However, not only do they contain vitamin E, but they contain it in a wide variety of forms.
- Alpha-tocopherol, gamma-tocopherol, delta-tocopherol, alpha-tocomonoenol and gamma-tocomonoenol are all forms of vitamin E found in pumpkin seeds.
- These last two forms have only recently been discovered, and they are a topic of special interest in vitamin E research, since their **bioavailability might be greater than some of the other vitamin E forms**.

Pumpkin Seeds

- Pumpkin seeds have long been valued as a special source of the mineral **zinc**, and the World Health Organization recommends their consumption as a good way of obtaining this nutrient.
- Zinc helps the **immune system** fight off invading **bacteria** and **viruses**.
- The body also needs zinc to make **proteins** and **DNA**, the **genetic** material in all cells.
- During pregnancy, infancy, and childhood, the body needs zinc to grow and develop properly.
- Zinc also helps wounds heal and is important for proper senses of taste and smell.

Pumpkin Seeds

- Diabetes: most of the evidence about pumpkin seeds and prevention or treatment of diabetes has come from animal studies.
- For this reason, research in this area is preliminary.
- However, recent studies on laboratory animals have shown the ability of ground pumpkin seeds, pumpkin seed extracts, and pumpkin seed oil to **improve insulin regulation** in diabetic animals and to prevent some unwanted consequences of diabetes on kidney function.
- **Decrease in oxidative stress** has played a key role in many studies that show benefits of pumpkin seeds for diabetic animals.

Pumpkin Seeds

- Because oxidative stress is known to play a role in the development of some cancers, and pumpkin seeds are unique in their composition of antioxidant nutrients, it's not surprising to find some **preliminary evidence of decreased cancer risk in association with pumpkin seed intake**.
- However, the antioxidant content of pumpkin seeds has not been the focus of preliminary research in this cancer area.
- Instead, the research has focused on **lignans**.
- Only breast cancer and prostate cancer seem to have received much attention in the research world in connection with pumpkin seed intake, and much of that attention has been limited to the lignan content of pumpkin seeds.
- The research is preliminary, even though pumpkin seeds may eventually be shown to have important health benefits in this area.

Pumpkin Seeds



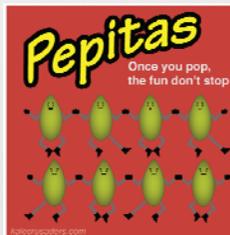
- Add pumpkin seeds to healthy **sautéed vegetables**.
- Sprinkle pumpkin seeds on top of **mixed green salads**.
- Grind pumpkin seeds with fresh garlic, parsley and cilantro leaves. Mix with olive oil and lemon juice for a tasty **salad dressing**.
- Add chopped pumpkin seeds to your favorite **hot or cold cereal**.
- Add pumpkin seeds to your **oatmeal raisin cookie or granola recipe**.
- Next time you make **burgers**, whether it be from vegetables, turkey or beef, add some ground pumpkin seeds.



- Just like other nuts and seeds, they can also be used in granolas, biscuits, breads, cookies, casseroles or **baked goods**.
- The seeds also used in salads especially sprinkled over fruit/vegetable salads.
- You may add them to desserts, particularly sundaes and other confectionary.
- The seeds are frequently added to enrich in meat, poultry, rice, and vegetable dishes.
- **Pumpkin seed oil** is used in salad dressing as well as in cooking.

Pumpkin Seeds

- *Pepitas* - Spanish for “little seed of a pumpkin or squash”.
- In the Latin American world, hulled and roasted-pumpkin seeds are referred as **pepita**.



Sunflower Seeds



- Sweet, nutty sunflower seeds are an excellent source of calories, **essential fatty acids, vitamins, and minerals.**
- The seeds are **mainly employed in the extraction of edible oil at a commercial scale all over the world.**
- Its seeds are eaten as delicious snacks by humans and birds alike!

Sunflower Seeds



- It is native to Middle American region from where it spread as an important commercial crop all over the world by the European explorers.
- The seeds are especially rich in poly-unsaturated fatty acid ***linoleic acid***, which comprise more 50% of the fatty acids in them.
- They are also good in mono-unsaturated ***oleic acid*** that **helps lower LDL or "bad cholesterol" and increases HDL or "good-cholesterol" in the blood.**

Sunflower Seeds

- Small but mighty, sunflower seeds are an excellent source of **protein, iron, folate, zinc, dietary fiber, and vitamin E.**
- In fact, sunflower seeds are the **best whole-food source of vitamin E**, a nutrient that may slow the effects of aging, **boosts the immune system, and prevents cardiovascular disease.**

Sunflower Seeds

- Vitamin E travels throughout the body **neutralizing free radicals** that would otherwise damage fat-containing structures and molecules, such as cell membranes, brain cells, and cholesterol.
- By protecting these cellular and molecular components, vitamin E has significant **anti-inflammatory effects** that result in the reduction of symptoms **in asthma, osteoarthritis, and rheumatoid arthritis**, conditions where free radicals and inflammation play a big role.
- Vitamin E has also been shown to **reduce the risk of colon cancer, help decrease the severity and frequency of hot flashes in women going through menopause, and help reduce the development of diabetic complications**

Sunflower Seeds

- They are also packed with four times more **antioxidants** than blueberries, walnuts, and peanuts, boosting the immune system and lowering blood pressure and bad cholesterol.



Sunflower Seeds

- Like other nuts, they are also a very good source of proteins with **high quality amino acids** such as tryptophan
- Just 100 g of seeds provide about **21 g of protein** (37% of daily-recommended values).
- In addition, the sunflower seeds contain health benefiting poly-phenol compounds such as **chlorogenic acid, quinic acid, and caffeic acids**.
- These are natural anti-oxidants, which help remove harmful oxidant molecules from the body.

Sunflower Seeds

- **Niacin and pyridoxine** are other B-complex vitamins found abundantly in sunflower seeds.
- About 8.35 mg or 52% of daily-required levels of niacin is provided by just 100 g (3.5 oz) of seeds.
- **Niacin helps reduce LDL-cholesterol levels in the blood as well as increase HDL**

Sunflower Seeds

- In addition, vitamin E plays an important role in the **prevention of cardiovascular disease**.
- Vitamin E is one of the main antioxidants found in cholesterol particles and helps **prevent free radicals from oxidizing cholesterol**.
- Only after it has been oxidized is cholesterol able to adhere to blood vessel walls and initiate the process of atherosclerosis, which can lead to blocked arteries, heart attack, or stroke.
- Getting plenty of vitamin E can **significantly reduce the risk of developing atherosclerosis**.
- In fact, studies show that people who get a good amount of vitamin E are at a **much lower risk of dying of a heart attack** than people whose dietary intake of vitamin E is marginal or inadequate

Sunflower



- Taste/Texture: Mild and nutty; firm but tender
- Benefits: Excellent source of B vitamins and vitamin E as well as protein
- **How to eat:** Try them in [salads](#), stir-frys, spreads, or side dishes for an extra nutty crunch, or add them to [breads](#) and muffins to boost the nutrient profile.

Sunflower Seeds



- Roasted and salted sunflower seeds are enjoyed as **a healthy snack**.
- They add crunchiness to **salads or sprinkle them over fried-rice dishes or sautéed vegetables**.
- The seeds can be coated with chocolate, candied, or added in cakes, and muffins.
- The seeds can be added to **salad dressings, casseroles or baked goods**.
- In Germany and other Central European region, the **flour made from the seeds** is used in making dark bread, *sonnenblumenbrot* (sunflower bread).
- Sunflower seed butter sold as **SunButter** is a suitable alternative in peanut allergic.

Sesame Seeds



- Sesame seeds may be the oldest condiment known to man.
- They are highly valued for their oil which is **exceptionally resistant to rancidity**.
- "Open sesame"—the famous phrase from the Arabian Nights—reflects the distinguishing feature of the sesame seed pod, which bursts open when it reaches maturity.
- Not only are sesame seeds an excellent source of copper and a very good source of manganese, but they are also a **good source of calcium, magnesium, iron, phosphorus, vitamin B1, zinc, molybdenum, selenium, and dietary fiber**.

Sesame Seeds



- In addition to these important nutrients, sesame seeds contain two unique substances: *sesamin* and *sesamolin*.
- Both of these substances belong to a group of special **beneficial fibers called lignans**, and have been shown to have a **cholesterol-lowering effect in humans**, and to **prevent high blood pressure and increase vitamin E supplies in animals**.
- Sesamin has also been found to **protect the liver from oxidative damage**.

Sesame Seeds



- Sesame seeds are an excellent source of copper, a very good source of manganese, and a good source of magnesium, calcium, phosphorus, iron, zinc, molybdenum, and selenium.
- This rich assortment of minerals translates into the following health benefits:

Sesame Seeds

- Copper is known for its use in reducing some of the pain and swelling of rheumatoid arthritis.
- Copper's effectiveness is due to the fact that this trace mineral is important in a number of anti-inflammatory and antioxidant enzyme systems.
- In addition, copper plays an important role in the activity of lysyl oxidase, an enzyme needed for the cross-linking of collagen and elastin—the ground substances that provide structure, strength and elasticity in blood vessels, bones and joints.

Sesame Seeds



- Studies have supported **magnesium's** usefulness in:
- **Preventing the airway spasm** in asthma
- **Lowering high blood pressure**, a contributing factor in heart attack, stroke, and diabetic heart disease
- **Preventing the trigeminal blood vessel spasm** that triggers migraine attacks
- **Restoring normal sleep patterns** in women who are experiencing unpleasant symptoms associated with menopause

Sesame Seeds

- In recent studies, **calcium** has been shown to:
- Help **protect colon cells from cancer-causing chemicals**
- Help **prevent the bone loss** that can occur as a result of menopause or certain conditions such as rheumatoid arthritis
- Help **prevent migraine headaches** in those who suffer from them
- **Reduce PMS symptoms** during the luteal phase (the second half) of the menstrual cycle

Sesame Seeds



- When the hulls remain on the seeds, one tablespoon of sesame seeds will contain about **88 milligrams of calcium**.
- When the hulls are removed, this same tablespoon will contain about **37 milligrams (about 60% less)**.
- **Tahini**—a spreadable paste made from ground sesame seeds—is usually made from hulled seeds (seeds with the hulls removed, called kernels), and so it will usually contain this lower amount of calcium.

Sesame Seeds

- In a study in the *Journal of Agricultural and Food Chemistry*, researchers published the amounts of **phytosterols** present in nuts and seeds commonly eaten in the United States.
- Phytosterols **lower LDL cholesterol**
- **Sesame seeds had the highest total phytosterol content** (400-413 mg per 100 grams), and English walnuts and Brazil nuts the lowest (113 mg/100grams and 95 mg/100 grams).
- 100 grams is equivalent to 3.5 ounces
- Of the nuts and seeds typically consumed as snack foods, pistachios and sunflower seeds were richest in phytosterols (270-289 mg/100 g), followed by pumpkin seeds (265 mg/100 g).

Sesame Seeds

- People who cooked with a blend of sesame and rice bran oils saw a **significant drop in blood pressure and improved cholesterol levels**, according to new research presented at the American Heart Association's High Blood Pressure Research 2012 Scientific Sessions.
- The researchers found cooking with a combination of these oils in a variety of ways **worked nearly as well as a commonly prescribed high blood pressure medication**, and that the use of the oil blend with medication yielded even more impressive results.

Sesame Seeds



- The 60-day study in New Delhi, India, divided 300 people with mild to moderately high blood pressure into three groups.
- One group was treated with a commonly used blood pressure lowering medication called a calcium-channel blocker (nifedipine).
- The second group was given the oil blend and told to use about an ounce each day in their meals.
- The final group received the calcium channel blocker and the oil blend

Sesame Seeds

- All three groups, with approximately an equal number of men and women, average age of 57, saw drops in their systolic blood pressure.
- Systolic blood pressure **dropped an average of 14 points** for those using only the oil blend and **16 points for those taking medication. Those using both saw a 36-point drop.**
- Diastolic blood pressure also dropped significantly: **11 points for those eating the oil, 12 for those on medication and 24 for those using both.** Diastolic blood pressure is the bottom number in a blood pressure reading that measures the force of blood against your artery walls when your heart is at rest between beats.

Sesame Seeds

- As for cholesterol, those using the oils saw a **26 percent drop in their LDL ("bad" cholesterol) and a 9.5 percent increase in the HDL ("good" cholesterol), while no changes in cholesterol were observed for the patients who used only the calcium-channel blocker.**
- Those who took the calcium channel blocker and the oils had a **27 percent drop in LDL levels and a 10.9 percent increase in the HDL.**

Sesame Seeds

- Add sesame seeds into the batter the next time you make homemade bread, muffins or cookies.
- Use the traditional macrobiotic seasoning, **gomasio**, to enliven your food. You can either purchase gomasio at a health food store or make your own by using a mortar and pestle. Simply mix together one part dry roasted sea salt with twelve parts dry roasted sesame seeds.
- Sesame seeds add a great touch to **steamed broccoli** that has been sprinkled with lemon juice.
- **Spread tahini** (sesame paste) on toasted bread and either drizzle with honey for a sweet treat or combine with miso for a savory snack.
- Combine toasted sesame seeds with rice vinegar, **soy sauce** and crushed garlic and use as a **dressing for salads, vegetables and noodles**.
- Healthy sauté chicken with sesame seeds, **soy sauce**, garlic, ginger and your favorite vegetables for a healthy, but quick, Asian-inspired dinner.

Quinoa



- Quinoa is another seed that makes most superfoods lists.
- It's a seed that's **high in protein and fiber**.
- The Food and Agricultural Organization of the United Nations (FAO) has officially declared that the year **2013 be recognized as "The International Year of the Quinoa."**
- Proposed by the government of Bolivia and receiving strong support from many Central and South American countries, quinoa has now been singled out by the FAO as a food with "high nutritive value," impressive biodiversity, and an important role to play in the achievement of food security worldwide.

Quinoa

- Researchers have recently taken a close look at certain antioxidant phytonutrients in quinoa, and two flavonoid—quercetin and kaempferol—are now known to be provided by quinoa in especially concentrated amounts.
- In fact, the concentration of these two flavonoids in quinoa can sometimes be **greater than their concentration in high-flavonoid berries like cranberry or lingonberry.**
- Recent studies are providing us with a greatly expanded list of **anti-inflammatory phytonutrients in quinoa.**
- This unique combination of anti-inflammatory compounds in quinoa may be the key to understanding preliminary animal studies that show **decreased risk of inflammation-related problems (including obesity) when animals are fed quinoa on a daily basis.**

Quinoa

- **Most grains are considered to be inadequate as total protein** sources because they lack adequate amounts of the amino acids lysine and isoleucine.
- The relatively **low level of both lysine and isoleucine** in the protein of grains is what causes these amino acids to be considered as the limiting amino acids (LAAs) in grains.
- In other words, these LAAs prevent grains from serving as complete protein sources in our diet.
- By contrast, quinoa has significantly greater amounts of both lysine and isoleucine (especially lysine), and these greater amounts of lysine and isoleucine allow the protein in quinoa to serve as a **complete protein source.**

Quinoa



- Quinoa is typically considered to be a valuable source of certain **health-supportive fats**.
- About 28% of quinoa's fatty acids come in the form of oleic acid, a heart-healthy monounsaturated fat, and about 5% come in the form of alpha-linolenic acid or ALA—the omega-3 fatty acid most commonly found in plants and associated with **decreased risk of inflammation-related disease**.

Quinoa

- Quinoa is a good source of **fiber**—one of the key macronutrients needed for health blood sugar regulation
- It also provides **outstanding protein quality**, even in comparison to commonly-eaten whole grains.
- Strong intake of protein and fiber are two dietary essentials for **regulation of blood sugar**.
- Because chronic, unwanted inflammation is also a key risk factor for development of type 2 diabetes, the diverse range of **anti-inflammatory nutrients** found in quinoa also make it a great candidate for diabetes risk reduction

Quinoa



- Unless pre-rinsed, it is **necessary that seeds are rinsed thoroughly.**
- Saponins are the bitter tasting, water-soluble phytonutrients found in the outer seed coat layer of quinoa that need to be rinsed off

Quinoa

- Combine cooked chilled quinoa with pinto beans, pumpkin seeds, scallions and coriander. Season to taste and enjoy this south-of-the-border inspired **salad.**
- Add nuts and fruits to cooked quinoa and serve as **breakfast porridge.**
- For a twist on your favorite pasta recipe, use **noodles made from quinoa.**
- Sprouted quinoa can be used in salads and sandwiches just like alfalfa sprouts.
- Add quinoa to your favorite **vegetable soups.**
- **Ground quinoa flour** can be added to cookie or muffin recipes.
- Quinoa is great to use in tabouli, serving as a delicious (and wheat-free) substitute for the bulgar wheat with which this Middle Eastern dish is usually made.

Conclusion

- Seeds are the "eggs" that contain the nutrients needed to nourish the growth of a new plant.
- So their high nutrient content shouldn't come as a surprise.
- What's surprising is that we generally relegate these nutritional wonders to the occasional snack rather than making them staples of our diet
- Enjoy them as a regular part of a healthy diet!