

Nutrition and Tofu

What is Tofu?

Tofu is high in protein and is the result of a process, below, that combines soybeans (in most cases) with a coagulant, curing agent:

- 1) Soybean selection
- 2) Soybean soaking
- 3) Pulping
- 4) Pulp boiling
- 5) Coagulant, curing agent added
- 6) Tofu pressing
- 7) Tofu

A coagulant causes a liquid to change to a solid or semi-solid state. It is typically a metallic salt, for example magnesium chloride (otherwise known as brine or *nigari*) or calcium sulfate, or an acid coagulant, for example a gluconic acid coagulant such as glucono-delta-lactone.

1.	<i>Kinu-dofu</i> : Silken tofu. Soymilk and nigari salt bitterns' coagulant. Light, sweet, and creamy with a delicate flavor
2.	<i>Momen-dofu</i> : Cotton tofu. Silken tofu pressed to drain the liquid. A relatively rough and firmer texture
3.	<i>Goma-dofu</i> : uses sesame seed paste rather than soybeans. Rich aroma. Ancient origins in Japanese Buddhist <i>Shojin Ryori</i> food. Novice monks undertook the long, tedious process of grinding sesame seeds into a fine paste
4.	<i>Atsuage/Aburaage</i> : Thickly sliced <i>momen-dofu</i> is deep fried to produce a golden crispy exterior. <i>Agedashi-dofu</i> adds a flour coating
5.	<i>Koya-dofu</i> : from the famous Buddhist temple in Wakayama Prefecture. Freeze-dried, rehydrated, and then simmered in soup stock. Spongy texture. <i>Shimi-dofu</i> is a similar product dating back to the fifteenth century and Nagano Prefecture
6.	<i>Iburi-dofu</i> : A regional delicacy of Gifu Prefecture dating back to the twelfth century. It is made with three times the normal amount of soybeans and subsequently smoked using Sakura chips
7.	Okinawa Tofu/ <i>Shima-dofu</i> : a firmer tofu. Used in the Okinawa dish <i>Goya Champuru</i>
8.	<i>Yuba</i> : is tofu skin, a Kyoto delicacy. It forms on top of heated soymilk. Fresh <i>Yuba</i> has a delicate flavor and a texture like mozzarella cheese
9.	<i>Okara</i> : a fiber-rich, protein-rich byproduct of the tofu making process used in tofu burgers, and baked goods, e.g., donuts and cookies
Source: Gurinavi, ⁽¹⁾ Conceptasia, November 2022	

Fig.2 A Traditional Tofu Producer with Shop, Chitoseya, Hinohara, Tokyo Prefecture



Source: Author's photograph, Conceptasia, November 2022

Fig.3 The Making of Tofu Donuts at Chitoseya



Source: Author's photograph, Conceptasia, November 2022

Health Benefits

Soybean is a bean providing vegetable protein. It contains all the amino acids that the body needs. The coagulant contributes minerals. Calcium Sulfate, for example, is a naturally occurring calcium salt. It has the advantage of not masking the taste of soybeans. Fig.4 gives a more detailed breakdown.

Calories	144	Selenium	32% of the daily Value
Proteins	17 grams	Vitamin A	18% of the Daily Value
Carbohydrates	3 grams	Phosphorus	15% of the Daily Value
Fiber	2 grams	Iron	15% of the Daily Value
Fat	9 grams	Zinc	14% of the Daily value
Calcium	53% of the Daily Value	Cholesterol	0 milligrams
Manganese	51% of the Daily Value	Fatty Acids, Trans Fat	0 grams
Copper	42% of the Daily Value		

Source: US Department of Agriculture. ⁽²⁾ Conceptasia, November 2022

1) Heart Health

Soy foods such as tofu are well known for their cholesterol-lowering effects. The evidence is so strong that regulators in the United States and Canada have approved health claims linking soy protein to a lower risk of heart disease. ^(3, 4)

Tofu contains isoflavones, which is a compound with antioxidant and anti-inflammatory properties

A study published in 2020 in the journal *Circulation* examined data from more than 100,000 people. The researchers found that eating at least one serving of tofu per week lowers the risk of coronary heart disease compared to those who ate tofu less than once per month. ^(5, 6)

2) Diabetes, Cancer

The isoflavones in tofu are also believed to reduce the risks of diabetes ^(7, 8) and cancer. ^(9,10) Whilst research is supportive, more studies are needed to make strong statements.

3) Other Health Benefits Indications

There have been beneficial indications linking tofu's high isoflavone content with a) stronger bones, b) improved brain function, c) fewer menopause symptoms, d) antidepressant effects. Further studies are needed.

In addition, tofu, like most plant foods, contains several antinutrients. Tofu has both phytates and trypsin inhibitors. Antinutrients aren't typically a cause for concern if one has a varied, nutrient-rich diet. ⁽³⁾

The principal source of protein is from animal meat. Tofu is a low-calorie alternative.

References:

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