

## Facts About Artificial Eggs

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### *Abstract*

Artificial egg or fake egg is made by using various types of raw materials, chemicals colors and flavors. Artificial eggs are full of chemicals, additives and unnatural agents. Therefore, fake eggs contain no nutritional values compared to the natural eggs. Fake eggs are being sold in the local market because of money. The chemicals used for artificial eggs causes harmful metabolic disorders, damage to the brain, liver and other vital organs, may cause cancer and many other deadly diseases. So the productions of fake eggs have no health benefit rather it's a chemical hazard and is a curse for the human race.

**Keywords:** Artificial eggs, unnatural eggs, metabolic disorder, hazard.

### **Introduction**

Eggs are excellent and cheap source of high-quality protein. It also contains a wide range of nutrients such as minerals, vitamins, essential fatty acids etc. and holds a very important place in other industries such as baking, cosmetics, nutraceuticals, fabrics, instrumentation and many more. But in recent decade there has been undoing in the egg market with the entry of artificial eggs. Appearance of fake eggs in the market has raise concern among consumers regarding the potential health hazard on consumption of such eggs. An approach is made to identify the artificial unnatural eggs from the natural ones. There are certain simple tips that can be easily applied to identify the artificial eggs.

### **Composition of Artificial Eggs**

Artificial eggs or fake eggs have an unusual smell or taste unlike the natural ones. The materials required to produce artificial eggs were cheap.

The compositions for preparing the artificial eggs are as follows:

Sl. No.	Composition	Purpose of use
1.	Glucolactone	Solidifier
2.	Benzoic acid	Preservative
3.	Calcium Chloride	Egg Shell
4.	Cellulose	Additive
5.	Alum	Softener
6.	Amino Acid	Additive
7.	Food colouring	Egg yolk colour
8.	Sodium alginate	Egg white and egg yolk
9.	Gelatin	Egg white and egg yolk

### Preparation of Artificial Eggs

At first, sodium alginate was soaked in aqueous, adjusting the concentration, stirring evenly. Soon it will look slightly white and transparent, and should have the same viscosity as the real egg white. This is the main part of the “egg”. Part of this liquid is separated and then added a small amount of lemon yellow food colouring, by adjusting the colour depth to look like the colour of egg yolk. This is now the prototype of the “egg yolk”. Then, pour the liquid into egg yolk shaped container, and promptly add calcium chloride dissolved in water. The outside of Egg yolk rapidly solidify and form a layer of transparent material. After one minute, egg yolk is formed. The solidified artificial egg yolk is put into artificial egg white; the egg’s basic content is done. Finally the “egg yolk” and “egg white” are put into “egg shell” made of calcium carbonate and the opening is sealed. The entire production is less than 5 minutes, which is much more efficient than waiting for a hen to lay an egg.

### Toxicological and Side Effect of Artificial Eggs

In certain countries, additives have an acceptable daily intake value (IDA) or permissible limits which is used as a security value for human intake without health risks. Thus, the side effects must be indicated based on the overcome of ADI values. This states that Egg shell shall be marked

in an inedible colour resistant to boiling and it must comply with the colouring matters that may be used in foodstuffs intended for human consumption. Colours may be used either to decorate egg shells or to stamp egg shells. Migration of these colours from the shell to the egg would be negligible and, therefore, even those colours that are restricted for certain uses, may be used for this purpose. For example erythrosine, which appears to be the colour most commonly used for this purpose, continues to be permitted.

Sometimes calcium carbide is used in formulation of fake eggs. The calcium carbide which is hazardous, when ingested, inhaled skin irritant and even toxic to lungs and mucous membranes. Repeated and prolonged ingestion may damage certain organs. It produces acetylene and calcium hydroxide upon moisture contact Acetylene a flammable gas that might contain the toxic impurities of phosphine and arsine. Calcium hydroxide,  $\text{Ca(OH)}_2$  is an irritant to respiratory system to skin and risk serious damage to eyes.

The use of sodium benzoate forms carcinogen benzene when used in combination with potassium benzoate and ascorbic acid. Combination with certain food colour is known to cause hyperactivity in children.

The alum which is used as medicine but excess intake may cause irritation of mucous membrane of GIT, nausea and vomiting. The artificial egg may be dangerous for human because it's made of different types of chemical compound.

**The composition of artificial eggs can cause following harm to human that may describe followed:**

<b>Composition</b>	<b>Side effects and harms</b>
Glucolactone	Cause Metabolism disorder
Benzoic acid	Harmful to brain, nerve cell. Cause liver disease, senile dementia.
Calcium Chloride	May cause nerve, liver diseases and affect ability to produce blood
Cellulose	Cause Metabolism disorder
Alum	May cause nerve, liver disease and affect ability to produce blood.
Amino Acid	Cause Metabolism disorder
Food colouring	Cause Gastrointestinal disorder
Sodium alginate	Increased Blood Pressure, Poor Bone Health, Congestive Heart Failure
Gelatin	Cause Kidney damage

## Identification of Artificial Eggs

1. Fake egg's shell has luster than the real egg, but it is not very noticeable.
2. When touch the fake egg by hand, it feels a little rougher than the real egg.
3. On shaking the fake egg it makes some noises as because water overflows from the solid agent. Real egg makes a more crisp sound than the fake egg on tapping the shell lightly.
4. Real egg smells slightly like raw meat but fake egg has no smell like it.
5. On opening the fake egg, egg yolk and egg white will melt together. This is because the egg yolk and egg white are made of the same raw materials. When frying a fake egg, the yolk will spread without being touched.

## Conclusion

Egg is much beneficial for health which helps to regulate the brain nervous system, cardiovascular system. New research shows that, consumption of egg does not have a negative impact on cholesterol. It also promotes healthy hair, nails and prevents breast cancer, blood clots, stroke, and heart attack. But the fake egg which is dishonestly prepared by man is greatly harmful for a man's health. The chemical constituents of fake egg are not beneficial to the human health. Artificial egg has no nutrition value compare with the real egg. It is harmful to brain, nerve cell, increased blood pressure, congestive heart failure, kidney damage and stomach problems etc. The cost of preparation a fake egg is very low. Awareness must be provided to concern the people about fake egg and its hazardous side effects. We also should know the necessary steps to identify the fake egg and people should be informed. If the people concern about the fake egg one day country will be free from fake egg which is typically bad for human body.

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