

Analysis of Duck Egg Nutrients and Their Significance to Human Health

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ABSTRACT

The study discover that duck eggs are gold in color, have rich flavor, pastries made of duck eggs are damp, fluffy, better and preferred to chicken eggs. Nutritional profile of duck eggs are vitamins A, D, high-quality protein, carbohydrate, sugar, cholesterol, iron, cooper, selenium, Omega-3 fatty acids ; fat. Duck eggs do not contain vitamin C and fiber, the egg whites decrease in cholesterol and saturated fats. Duck egg whites contain many compounds containing antibacterial, antiviral and antifungal. Vitamin B in duck eggs is vital for red blood formation, DNA synthesis and healthy nervous system. One duck egg contain these nutrients value: calories 130, protein 9 grams, fat 10 grams, carbohydrate 1gram, fiber 0 grams and sugar 1 gram. Duck egg yolks are 50 percent bigger than chicken eggs and taste creamier than chicken eggs. Chicken and duck egg yolks contain bioactive peptides which are protein particles fostering vitality. When duck eggs are not well cooked, it causes salmonella infection leading to vomiting, fever and stomach cramps. Functions of B vitamins in duck eggs are prevent stress-acnes, assist to maintain collagen, decrease inflammation and foster cell regeneration. It is not healthy to eat duck eggs raw, how duck eggs aid sleep and reasons why duck eggs are rich in cholesterol.

INTRODUCTION

Duck eggs are bigger than chicken eggs and are macrolecithal which make them perfect for pastries. Duck eggs are golden in color, have rich flavor, pastries made of duck eggs are damp, fluffy, better and sustain their shapes. Duck eggs are preferred to chicken eggs for cream and custard fillings because they contain not much water and many fat. When duck eggs are cooked, they have creamier and rich taste. Some people like them scrambles because they have strong flavor than chicken eggs when eaten plain.

OBJECTIVES OF THE STUDY

- To find out nutritional content of duck eggs
- To find out significance of duck eggs to human health
- To find out side-effects of eating too many duck eggs
- To compare the nutrients in duck eggs to chicken eggs
- To find out if it is healthy to eat duck eggs raw

NUTRITIONAL CONTENTS OF DUCK EGGS

- Vitamin A (50 percent more than chicken eggs)
- More Omega-3 fatty acids

- Vitamin D
- Zinc
- Selenium
- Magnesium
- Eight B vitamins such as vitamins B1, B2, B3, B5, B6, B7, B9, B12
- Iron
- cooper
- Fat
- High-quality protein
- Carbs
- Cholesterol
- Calories
- Carbohydrate
- Sugar
- Lecithin

Nutrients lacking in duck eggs

- Vitamin C
- Fiber

Origin of duck egg yolks: Duck egg yolks obtain their orange- yellow color from natural pigments known as carotenoids

Implication of higher content of duck egg yolk:

If duck egg yolks are higher, then they contain a lot of fat and cholesterol than chicken eggs.

Fact about duck egg whites: The egg whites decrease in cholesterol and saturated fat.

IMPORTANCE OF DUCK EGGS TO HUMAN HEALTH

The antioxidants compounds in duck egg yolks protect cells and DNA from oxidative destruction which may cause chronic and age-related disease. The main carotenoids in egg yolks namely, carotene, cryptoxanthin, zeaxanthin and lutein are connected to decrease danger of age-related macular degeneration, cataracts, heart disease and other types of cancer. Duck egg yolks contain lecithin and choline which are responsible for healthy cell membranes, brain, neurotransmitters and nervous system. The body changes lecithin to choline. A study comprised of almost 2,200 older adults indicated higher choline levels in the blood were connected to better brain function. Duck egg whites contain protein that fight against infections. Researchers discovered many compounds in egg whites which contain antibacterial, antiviral and antifungal. Vitamin B12 in duck eggs are vital for red blood cells formation, DNA synthesis and healthy nervous system. During pregnancy, choline in duck eggs buttress healthy fetal brain development. Protein in duck eggs assist to build lean muscles, maintain healthy weight and recover after exercise. Lacks of zinc, magnesium and selenium are connected to depression and fatigue. Duck eggs give "Sunshine vitamin" which is vitamin D. Decreased levels of vitamin D are connected to depression and seasonal affective disorder. According to recent studies B vitamins in duck eggs improve skin health. Studies indicate that duck eggs may boost immunity, decrease the danger of infections including viral infections. Duck eggs give vitamins D, K, calcium, magnesium and phosphorus that are responsible for healthy bones and muscles. Duck eggs eating in moderation make heart and blood vessels healthy. Studies revealed that duck eggs increase high-density lipoprotein cholesterol levels and hinder heart disease. Duck eggs contain many proteins, healthy fats and important nutrients such as vitamin B12, selenium and iron.

NUTRITIONAL CONTENTS OF ONE DUCK EGG

- Calories: 130
- Protein: 9 grams
- Fat: 10 grams
- Carbohydrate: 1 gram
- Fiber: 0 grams
- Sugar: 1gram

DIFFERENCE BETWEEN DUCK EGGS AND CHICKEN EGGS

Duck eggs are 50 - 100 larger than an average-sized chicken eggs. Eating one duck egg is like consuming one and half or two chicken eggs. The color of duck eggs differ based on the breed, diet of the duck, the environment in which it was raised and it's genetics. A lot of duck eggs have white shells but also appear in shades of pale gray, green, black and blue. Duck egg yolks are golden orange, vibrant, bold and provide rich flavor . Duck egg yolks taste creamier than chicken and duck egg yolks are 50 percent larger than chicken eggs. Duck egg whites is clear, chicken egg whites is yellow and it takes force to break duck eggs. Duck egg yolks are thick and have thick shells. Duck eggs contain large egg whites and yolks than chicken eggs.

NUTRITIONAL COMPARISON BETWEEN DUCK EGGS AND CHICKEN EGGS

Some nutrients in duck eggs are higher amount than chicken eggs such as folate, iron and vitamin B12. Duck eggs contain 168 percent of DV for vitamin B12 for functions like building DNA and new red blood cells. Chicken egg whites contain higher amount of some proteins such as ovalbumin, conalbumin and lysozyme than duck egg whites. Scientists accept that the above mentioned proteins and others in eggs contain antimicrobial, antioxidant and cancer inhibiting properties. Egg whites and yolks of chicken and duck eggs contain bioactive peptides. These peptides are protein particles that foster vitality. Chicken and duck eggs contain antioxidants and some research propose that both eggs could decrease the danger of cancer. Chicken and duck eggs contain monounsaturated and polyunsaturated fats. Duck eggs contain more protein than chicken eggs, duck egg yolks contain many antioxidants and Omega-3 fatty acids. Vitamin A in duck egg is 50 percent higher than chicken egg. During winter, ducks eggs are good

source of vitamin D. Vitamin D in duck eggs assists body to absorb calcium to enable bone growth. Duck eggs contain few carbohydrate than chicken eggs. Duck eggs contain more fats than chicken eggs.

Damoah's Egg Theory: This theory was developed by Dr. Isaac K. Damoah. The theory says eggs are immaculately balanced because naturally they contain almost all the food nutrients in the right proportions. They are not complete diet due to lack of vitamin C and fiber but are complete protein in the sense that they contain all the nine essential amino acids .

SIDE EFFECTS OF EATING TOO MANY DUCK EGGS

Those who have egg allergy should not eat duck eggs. Duck eggs contain high fat and cholesterol, eating too many duck eggs increase the danger of cardiovascular disease, obesity and diabetes. When duck eggs are not well cooked, it causes salmonella infection leading to vomiting, diarrhea, fever and stomach cramps. During winter, duck eggs give vitamin D but decreased levels of vitamin D are linked with depression and seasonal affective disorder.

SYMPTOMS OF ALLERGIC REACTION AFTER EATING DUCK EGGS

- Stomach cramps
- Wheezing
- Hives
- Vomitting
- Diarrhea
- Dizziness
- Swelling on the face
- Difficulty in breathing

FUNCTIONS OF B VITAMINS IN DUCK EGGS

Vitamin B1: Anti-stress vitamin which prevent stress-acnes.

Vitamin B2: Assists to maintain collagen and decrease inflammation.

Vitamin B3: Assists acne, eczema and dermatitis.

Vitamin B5: Sustain moisture in the skin.

Vitamin B6: Assists the body to endure stress and have adequate sleep hindering inflammation and dry skin.

Vitamin B7: Protects the skin from infection and maintain skin moisture.

Vitamin B9: Foster cell regeneration.

Vitamin B12: Decrease acne, dryness and inflammation.

IS IT HEALTHY TO EAT RAW DUCK EGGS?

According to Food Safety Authority of Ireland duck eggs ought to be eaten when they are well cooked. Duck eggs must not be eaten raw and foods containing duck eggs should be cooked. During cooking, pay attention to breaking duck egg shells, handling the empty shells and never taste the raw duck eggs mix. Wash the hands well after using raw duck eggs. Make sure cooking utensils are washed.

HOW DUCK EGGS AID SLEEP

Tryptophan: This is essential amino acid which act as a precursor to serotonin and melatonin controlling circadian rhythms and foster deep sleep.

Vitamin B6: Vitamin B6 in duck eggs is the biochemical pathway that change tryptophan to sleep-inducing hormone serotonin.

Choline: Duck eggs are rich in choline which assist the production of acetylcholine, initiate and maintain Rapid Eye Movement (REM) sleep.

Selenium and Magnesium: These minerals are plenty in duck eggs and lack of them are connected to fatigue and poor quality sleep.

DUCK EGGS AND CHOLESTEROL

Duck eggs contain three times high cholesterol than chicken eggs. One duck egg contain 620 mg of cholesterol compared to chicken eggs. Duck egg yolks size is larger which increase cholesterol levels.

REASONS WHY DUCK EGGS ARE RICH IN CHOLESTEROL

- Duck egg yolks are larger which result in more fats and higher cholesterol levels.
- Ducks often eat aquatic plants, insects ; small fish causing rich fats and increased cholesterol levels.

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

SUMMARY OF FINDINGS

The study find out that duck eggs contain vitamins A, D, high-quality protein, Omega-3 fatty acids, selenium, iron, cooper, 8 B vitamins, fat ; carbohydrate. Duck egg yolks contain antioxidants compounds protecting cells and DNA from

oxidative destruction which may cause chronic age-related disease. Duck egg whites contain protein that fight against infections, eating one duck egg is like consuming one and half or two chicken eggs and eating too many duck eggs increase the danger of cardiovascular disease, obesity and diabetes. Duck eggs contain more cholesterol than chicken eggs and duck eggs aid sleep.

CONCLUSION

Duck egg yolks contain lecithin and choline which are responsible for healthy cell membranes, brain, neurotransmitters and nervous system. Eight B vitamins in duck eggs are nutritious to the body and higher choline levels in the blood are connected to better brain function. During pregnancy, choline in duck eggs buttress fetal brain development, some nutrients in duck eggs are higher amount than chicken eggs like folate, iron and vitamin B12. Based on the above mentioned factors the study generalize that duck eggs are significant to human health.

RECOMMENDATIONS

Dietician must educate the public on the relevance of eating duck eggs and make it clear that duck eggs are nutritious than chicken eggs. This education could be done on T.V ; Radio Stations. Medical Doctors should teach patients to understand that duck eggs are nutritious than chicken eggs.

AUTHOR'S PROFILE



Dr. Isaac K. Damoah is a product of Bogoso St. Augustine's Senior Secondary School. He holds PhD, Mdiv, Bth, DipBs and is an Official Representative of Gepea University in Ghana. He is Gepea University senior research team member and co-author to Ijsred Journal

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