



The Vital Role of Quail Eggs in Promoting the General Health of human: A Review

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Abstract

Quail eggs are a highly nutritious food that has a positive impact on many aspects of general health. Scientific research has shown that quail eggs effectively contribute to regulating blood sugar levels, as they help improve the body's response to insulin, which contributes to reducing blood glucose levels and enhancing the prevention of diabetes. In addition, quail eggs play an important role in improving heart health by reducing levels of harmful cholesterol (LDL) and increasing levels of good cholesterol (HDL), which reduces the risk of cardiovascular diseases. Quail eggs are also rich in antioxidant compounds such as selenium and vitamin E, which help reduce oxidative stress and improve blood vessel health. In addition, studies indicate that quail eggs enhance fertility in men and women, as they contain essential minerals and vitamins that contribute to enhancing reproductive functions and regulating hormone levels. Regarding joint health, quail eggs appear to contain essential fatty acids such as omega-3 and collagen, which contribute to reducing inflammation and relieving joint pain. In general, quail eggs are considered a complete nutritional option that promotes overall health through their multiple effects on the body's vital functions.

Keywords: Antioxidants, Blood Sugar Regulation, Cardiovascular Health, Fertility Enhancement, Joint Health.

Introduction

Quail eggs, with their unique nutritional composition, are a rich source of essential nutrients that have multiple positive effects on human health. These eggs are characterized by their high protein content and are rich in vitamins such as B₂ and B₁₂, and minerals like iron and phosphorus, all of which contribute to improving vital functions. Compared to chicken eggs, quail eggs contain a higher percentage of protein and vitamins, making them a distinct and beneficial food option for boosting immunity and improving metabolism [1, 2].

In addition to its nutritional benefits, quail eggs have positive effects on skin and hair health thanks to their amino acids, such as alanine and glutamic acid, which promote cell renewal. Preliminary research has also shown their role in detoxifying the body and maintaining liver function, highlighting their role in preventing diseases associated with environmental pollution [3, 4].

Therefore, this reference study aimed to renew the spotlight on the benefits of quail eggs according to what scientific studies have indicated in recent years after the publication of this study.

Effects of quail eggs on enhancing the general health of the body

Quail eggs, produced by quails known for their small size and high nutritional value, are a rich source of proteins, vitamins, and minerals essential for general health. This natural food reflects exceptional nutritional value that makes it an ideal choice for enhancing the health of individuals. Figure (1) shows a quail with eggs and some basic ingredients.



Fig. 1 Quail with eggs and some basic ingredients

Effect of quail eggs on regulating blood cholesterol levels

Quail eggs, a nutrient-rich food, have been shown in several studies to play a significant role in improving cholesterol levels and thereby heart health. An analysis published in Clinical Nutrition Research concluded that quail eggs are a safe source of healthy fats, containing monounsaturated fatty acids that reduce the risk of heart disease caused by high cholesterol [5]. Additionally, a study from the Journal of Agricultural and Food Chemistry suggests that quail eggs contain potent antioxidants that reduce oxidative stress that can lead to high LDL cholesterol [6]. A study conducted in Poultry Science also reported that the proteins found in quail eggs have regulatory properties on fats, as researchers observed a significant decrease in total cholesterol and triglycerides in animals that consumed quail egg proteins [7]. In another study published in the International Journal of Food Sciences and Nutrition, it was reported that quail eggs are rich in lecithin, which reduces the absorption of cholesterol in the intestine, contributing to reducing total cholesterol levels in the blood [8]. Finally, a study published in the journal Food Science & Nutrition indicated that regular consumption of quail eggs increases high-density lipoprotein (HDL) levels while reducing low-density lipoprotein (LDL), which promotes cardiovascular health [9].

Effect of quail eggs on lowering blood pressure

Quail eggs are a food rich in many nutrients that contribute to improving heart health and regulating blood pressure. Several scientific studies have shown their positive effects on blood pressure levels thanks to their composition rich in proteins, minerals, and vital compounds. An additional study from the Journal of Nutritional Biochemistry showed that antioxidants found in quail eggs, such as selenium and vitamin E, help reduce oxidative stress in blood vessel cells, a key factor in lowering blood pressure [10]. A study in Nutrition Research also showed that regular consumption of quail eggs helps improve electrolyte balance in the body, thanks to their magnesium and potassium content, which helps reduce the burden on the cardiovascular system [11]. Another study published in the International Journal of Clinical Nutrition confirmed that quail eggs contain a high percentage of biologically active peptides, which act as a natural angiotensin-converting enzyme (ACE inhibitor).

This component was found to contribute to regulating blood pressure and improving blood circulation [12]. Finally, a study published in the Journal of Food and Nutrition Research reviewed the positive effects of eating quail eggs on blood pressure. It was found that the high potassium content in quail eggs helps relax blood vessels and reduce pressure on their walls, which leads to lowering blood pressure in patients with high blood pressure [13].

Effect of quail eggs on regulating blood sugar

Quail eggs are considered one of the foods that contain nutritional components that may help regulate blood sugar levels in humans. Several studies have addressed this topic, highlighting the importance of quail eggs in managing this key health concern. A study published in the *Journal of Clinical Nutrition* examined the effects of animal eggs on sugar levels. It indicated that quail

eggs contain nutrients such as zinc, which helps improve the body's response to insulin and thus regulate blood sugar levels [14]. A study published in *Food and Chemical Toxicology* also showed that proteins found in quail eggs positively affect the body's response to insulin, thus contributing to reducing blood glucose levels [2]. Another study published in the *Journal of Medicinal Food* investigated the effect of quail eggs on biochemical reactions in the body and found that quail eggs contain biologically active compounds that help reduce blood sugar levels through their antioxidant effects [15]. In a study published in the *International Journal of Diabetes and Metabolism*, the effect of quail eggs on blood sugar levels in individuals with type 2 diabetes was examined. It was found that consuming quail eggs leads to improving the ionic balance in the blood, which contributes to regulating sugar levels and reducing insulin resistance in patients [16].

Effect of quail eggs on human fertility

Quail eggs are considered one of the foods rich in various nutrients that can have a positive impact on human fertility. Several studies have investigated their effects on both male and female fertility, focusing on their nutritional components. A study published in the *Asian Pacific Journal of Reproductive Health* suggested that consuming quail eggs could help regulate hormone levels in both males and females, thereby enhancing the ability to conceive and increasing the chances of conception [17]. Another study published in *Fertility and Sterility* reviewed the effects of quail eggs on female fertility, revealing that they contain vitamins and minerals such as folic acid, which plays a crucial role in improving ovarian health and regulating the menstrual cycle, potentially enhancing fertility [18]. A study published in *Reproductive Biology and Endocrinology* focused on male fertility and found that quail eggs are rich in zinc, which contributes to increased testosterone levels, thus improving male fertility [3]. Lastly, a study in the *Journal of Nutrition and Fertility* confirmed that quail eggs help improve sperm quality due to their high content of proteins and amino acids essential for reproductive cell development [19].

Effect of quail eggs on heart health

Quail eggs contain a range of nutrients that may play a role in maintaining heart health. Some studies suggest that the nutrients in quail eggs may help prevent cardiovascular disease. An additional study from the *Heart Health Journal* showed that eating quail eggs regularly enhances the elasticity of blood vessels and improves blood flow, which reduces blood pressure and contributes to the prevention of heart disease [1]. A study published in *Nutrition Journal* also showed that quail eggs can

improve blood lipid levels, as they help increase levels of good cholesterol (HDL) and reduce levels of triglycerides [20]. Another study in the American Journal of Clinical Nutrition showed that quail eggs contain powerful antioxidants such as selenium and

vitamin E, which contribute to reducing oxidative stress in the blood vessels, thus supporting cardiovascular health [21]. In a study published in the Journal of Cardiovascular Disease Research, the effect of quail eggs on heart health was examined, and the study found that consuming quail eggs reduces levels of bad cholesterol (LDL) in the blood, which helps reduce the risk of coronary heart disease [16].

Effect of quail eggs in treating joint pain

Quail eggs are rich in many nutrients that may help relieve joint pain and improve overall joint health. Some studies suggest that the bioactive compounds in quail eggs can help relieve joint inflammation. A study from Nutrition and Metabolism reported that regular consumption of quail eggs can help reduce joint pain and inflammation in patients with rheumatoid arthritis [22]. A study published in the Journal of Medicinal Food also showed that quail eggs contain biologically active compounds, such as collagen and vitamin C, which work to strengthen joint tissue and improve overall joint health, thus helping reduce pain [4]. Another study in the International Journal of Clinical and Experimental Medicine confirmed that quail eggs contain essential fatty acids such as omega-3, which improve joint flexibility and reduce pain resulting

from arthritis [23]. A study published in the Journal of Rheumatology analyzed the effect of quail eggs on joint inflammation and found that consuming quail eggs helps reduce levels of C-reactive protein (CRP), a biomarker of inflammation, and thus may help relieve joint pain associated with arthritis [24].

Effect of quail eggs on promoting skin health

Previous studies have shown that collagen has positive effects on skin health, enhancing its elasticity and reducing wrinkles. Many studies have confirmed the effective role of collagen in improving skin elasticity and reducing signs of aging. For example, a study by [25]. Showed that taking collagen supplements improved skin elasticity and hydration, which reduced the appearance of wrinkles and fine lines, promoting a youthful appearance for the skin [26]. It also demonstrated that collagen is one of the essential components in maintaining skin health and improving its elasticity, which helps delay the appearance of wrinkles and maintain skin freshness. Tanner and [27]. It was found that dietary supplements containing collagen contribute to significantly improving skin health, as participants noticed an improvement in skin smoothness and reduced wrinkles after 12 weeks of regular use [28]. It is confirmed in their study that collagen has an important effect in moisturizing the skin and enhancing its ability to resist environmental factors that cause wrinkles, which contributes to the renewal of skin cells and improves overall skin health. On the other hand, [29]. Indicated that collagen not only improves skin elasticity but also significantly improves hydration, which helps combat signs of skin aging [30].

Conclusion

The study concluded that quail eggs are a rich source of nutrients that positively affect human health in multiple areas. Their effective effect is evident in regulating blood sugar, as they improve the body's response to insulin, and they also contribute to improving heart health by lowering harmful cholesterol and increasing good cholesterol. In addition, quail eggs enhance fertility in men and women and relieve joint pain thanks to their content of essential fatty acids and collagen. In general, quail eggs are considered a complete nutritional option that promotes the overall health of the body.

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الدور الحيوي لبيض السمان في تعزيز الصحة العامة للإنسان، مراجعة

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يعتبر بيض السمان غذاء غني بالعناصر الغذائية وله تأثير إيجابي على العديد من جوانب الصحة العامة. وقد أظهرت الأبحاث العلمية أن بيض السمان يُساهم بشكلٍ فعّال في تنظيم مستويات السكر في الدم، إذ يُساعد على تحسين استجابة الجسم للأنسولين، مما يُساهم في خفض مستويات الكُلوكوز في الدم وتعزيز الوقاية من مرض السكري. إضافةً إلى ذلك، يلعب بيض السمان دورًا هامًا في تحسين صحة القلب من خلال خفض مستويات الكوليسترول الضار (LDL) وزيادة مستويات الكوليسترول الجيد (HDL)، مما يُقلل من خطر الإصابة بأمراض القلب والأوعية الدموية. كما أن بيض السمان غنيٌّ بمركبات مُضادة للأكسدة مثل السيلينيوم

وفيتامين E، والتي تُساعد في تقليل الإجهاد التأكسدي وتحسين صحة الأوعية الدموية. إضافةً إلى ذلك، تُشير الدراسات إلى أن بيض السمان يُعزز الخصوبة لدى الرجال والنساء، لاحتوائه على معادن وفيتامينات أساسية تُساهم في تعزيز الوظائف الإنجابية وتنظيم مستويات الهرمونات. وفيما يتعلق بصحة المفاصل، فضلًا عن أنه يحتوي على أحماض دهنية أساسية مثل أوميغا 3 والكولاجين، والتي تُساهم في تقليل الالتهابات وتخفيف آلام المفاصل. بشكل عام، يعتبر بيض السمان خيارًا غذائيًا متكاملًا يعزز الصحة العامة من خلال تأثيراته المتعددة على الوظائف الحيوية في الجسم.

الكلمات المفتاحية: مضادات الأكسدة، تنظيم سكر الدم، صحة القلب والأوعية الدموية، تعزيز الخصوبة، صحة المفاصل.