

Talbina as a functional food and a source of health-beneficial ingredients

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Abstract

Talbina is a traditional barley-based porridge that occupies a unique place at the intersection of prophetic medicine, traditional diets and modern functional food science. Prepared from barley flour cooked in water or milk and often sweetened with honey, talbina provides complex carbohydrates, high-quality protein, soluble and insoluble dietary fibre, β -glucans, vitamins, minerals and a variety of antioxidant and anti-inflammatory phytochemicals. Classical Islamic sources describe talbina as a food that soothes the heart and relieves sorrow, while contemporary research has begun to document its effects on mood, lipid profile, glycaemic control, gastrointestinal health and chronic disease risk. This narrative review synthesises evidence from religious texts, experimental studies, clinical trials and modern nutrition literature to evaluate talbina as a functional food. The paper outlines the composition and preparation of talbina; summarises data on barley β -glucan, milk and honey as bioactive ingredients; and reviews studies linking talbina consumption with antidepressant effects, cardiometabolic benefits and gut microbiota modulation. Potential mechanisms include increased intestinal viscosity, bile acid binding, fermentation to short-chain fatty acids, improved neurotransmitter balance and reduced oxidative stress. Safety considerations, limitations of the current evidence base and future research priorities are also discussed. Overall, talbina appears to be a culturally meaningful, low-cost and nutritionally dense food that could be incorporated into preventive and therapeutic strategies, especially within Muslim communities and settings where traditional prophetic foods are valued.

Keywords: *talbina, barley, β -glucan, functional foods, prophetic medicine, depression, cardiovascular health*

1. Introduction:

Functional foods are commonly defined as foods that, beyond providing basic nutrients, deliver physiologically active components that can improve health or reduce the risk of disease when consumed as part of a normal diet. In many

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cultures, traditional dishes have long served this role even before the term “functional food” was coined. Talbina, a warm porridge made from barley flour, milk or laban (fermented milk) and often honey, is one such example. It is deeply rooted in the dietary practices of the Arabian Peninsula, North Africa and parts of Asia, and is strongly linked to prophetic guidance in Islam.

In Islamic tradition, talbina is recommended as a gentle, easily digested food for the sick, the elderly and those experiencing grief or psychological distress. At the same time, modern nutrition science has identified barley β -glucan, dairy bioactive compounds and honey-derived phenolics as components with cholesterol-lowering, glycaemic-modulating, antioxidant, anti-inflammatory and potentially mood-enhancing properties. Recent narrative reviews and experimental studies have begun to characterise talbina as a promising functional food, yet the concept remains relatively unfamiliar outside specialised circles.

The aim of this review is to bring together religious, cultural and scientific perspectives on talbina as a functional food and a source of health-beneficial ingredients. First, the paper briefly introduces the broader concept of functional foods and prophetic nutrition. It then presents Qur’anic verses and hadith that highlight the importance of wholesome, lawful foods and specifically mention talbina. Subsequent sections summarise the composition and bioactive components of talbina, review evidence on its health effects and mechanisms of action, and discuss its potential applications, safety and research gaps. The intention is to provide a plagiarism-free, integrated and up-to-date overview suitable for students, health professionals and researchers.

2. Functional Foods and Prophetic Nutrition:

The term “functional food” emerged in the late twentieth century to describe foods that offer health benefits beyond the delivery of essential nutrients. Typical examples include foods enriched with phytosterols to lower cholesterol, probiotic yogurts that support gut health and whole-grain products that reduce cardiometabolic risk. Cereals such as barley, oats and rye have attracted particular attention because of their high content of soluble fibre, especially β -glucan, which has been shown to lower total and low-density lipoprotein (LDL) cholesterol and improve markers of glucose metabolism.

From an Islamic perspective, the idea of functional foods is closely aligned with the Qur’anic emphasis on consuming lawful (halal) and wholesome (tayyib) foods. Allah, Exalted is He, commands: “O you who believe! Eat of the good things We have provided for you, and give thanks to Allah if it is Him that you worship” (Qur’an 2:172). Similarly, another verse states: “And eat of what Allah has provided for you, lawful and good, and fear Allah in whom you are believers”

(Qur'an 5:88). These verses encourage Muslims to seek foods that are not only permissible but also nutritious, pure and beneficial for health.

The prophetic tradition (Sunnah) further illustrates this concept by recommending specific foods and preparations with recognised health benefits, such as honey, black seed, dates, milk and barley. Talbina belongs to this category of prophetic foods. It is mentioned in authentic hadith collections as a food that comforts the grieving person and supports recovery from illness. In this way, talbina can be considered an early example of a culturally embedded functional food that integrates spiritual and physical dimensions of well-being.

3. Religious Background of Talbina:

3.1 Qur'anic Perspective on Wholesome Foods:

Although the Qur'an does not mention talbina by name, it repeatedly encourages the consumption of wholesome agricultural produce, including grains. Verses describing the blessings of rain and crops highlight grains, fruits and pasture as signs of divine mercy and sustenance. Within this broader framework, barley-based dishes such as talbina can be viewed as practical expressions of eating from the "good things" that Allah has provided. The combination of wholegrain barley, milk and honey also reflects a balanced composition of carbohydrates, proteins, fats and bioactive compounds that nourish the body and support health.

3.2 Prophetic Traditions on Talbina:

Several narrations from the Sunnah refer directly to talbina. It is reported that when a member of the Prophet's family was ill or suffering from grief, a pot of talbina would be prepared and the Prophet ﷺ would say that talbina soothes the heart of the patient and relieves some of his sorrow. In another report, talbina is described as being beneficial for the sick as it removes some of the burden of illness. These narrations present talbina as a gentle, heart-calming food, not merely as a source of calories but as a means of emotional support and comfort.

Classical scholars of prophetic medicine highlighted talbina's soft texture, ease of digestion and ability to provide energy without overburdening the stomach. Compared with heavy meat-based broths, barley porridge prepared in this way is more suitable for weak patients and those with fever or digestive disturbances. The inclusion of milk and honey further enhances its nutritional density and palatability, making it appropriate for elderly individuals, children and people with reduced appetite.

4. Composition, Preparation and Nutritional Profile of Talbina:

Traditional talbina is commonly prepared by slowly cooking one to two tablespoons of wholegrain barley flour in a cup of water over gentle heat until a

smooth, slightly viscous porridge is formed. Milk or fermented milk (laban) is then added, and the mixture may be sweetened with honey. The resulting dish is served warm, either as a drinkable broth or a spoonable porridge. Variations include the use of hulled or pearled barley, the addition of spices such as cinnamon or cardamom, and the incorporation of probiotic cultures to produce “pro-talbina” with enhanced functional properties.

From a nutritional standpoint, barley provides complex carbohydrates, including a high proportion of dietary fibre. A key component is soluble β -glucan, a non-starch polysaccharide that forms viscous gels in the gastrointestinal tract. Barley also supplies moderate amounts of protein, essential amino acids, B-group vitamins, vitamin E, magnesium, potassium, iron, zinc and trace elements such as selenium and chromium. Wholegrain barley retains the bran and germ, which concentrate many of these nutrients and phytochemicals.

Milk contributes high-quality protein rich in essential amino acids, bioavailable calcium and phosphorus for bone health, as well as fat-soluble vitamins and bioactive peptides. Depending on the fat content, milk also supplies beneficial fatty acids and conjugated linoleic acid. Fermented milk adds probiotic bacteria, which can interact synergistically with barley fibre to support gut health. Honey provides natural sugars, small amounts of vitamins and minerals, and a wide array of phenolic compounds with antioxidant, antimicrobial and anti-inflammatory properties.

Taken together, talbina can be described as a nutrient-dense food that integrates three functional ingredients: barley β -glucan and other cereal fibres, dairy bioactives and honey-derived phytochemicals. Its soft texture and pleasant flavour make it suitable for people with reduced chewing ability or poor appetite, while its composition offers considerable potential for disease prevention and adjunctive therapy.

5. Health Benefits of Talbina as a Functional Food

5.1 Mental Health, Depression and Stress Relief:

The prophetic description of talbina as a food that comforts the heart has stimulated modern interest in its potential role in mental health. Nutritional psychiatry has established links between diet quality and depression, anxiety and cognitive function. Diets rich in whole grains, fruits, vegetables, healthy fats and fermented foods are associated with lower risk of depressive symptoms, while highly refined, ultra-processed diets are linked with poorer mental health outcomes.

Several studies have investigated talbina specifically in the context of depression and stress. A randomised clinical trial in institutionalised elderly participants

compared talbina supplementation with a control diet and observed significant reductions in depressive symptoms, along with modest improvements in appetite and overall well-being. Experimental research using a chronic stress model in rats found that talbina administration helped normalise urinary levels of serotonin, dopamine and norepinephrine, suggesting a modulatory effect on monoaminergic neurotransmitter systems. These changes were accompanied by behavioural improvements consistent with an antidepressant-like action.

The mechanisms behind these mental health benefits are likely multifactorial. Barley β -glucan and other fibres can be fermented by colonic bacteria to produce short-chain fatty acids, which influence the gut–brain axis and may indirectly modulate mood. Honey's antioxidant and anti-inflammatory constituents could reduce oxidative stress and neuroinflammation, factors that have been implicated in depression. Furthermore, the overall nutrient density of talbina, including B-vitamins, magnesium and tryptophan, supports neurotransmitter synthesis and energy metabolism, potentially contributing to mood stabilisation.

5.2 Cardiometabolic Health: Lipids, Glycaemia and Weight Management:

Barley has been extensively studied for its favourable effects on cardiovascular risk factors, largely attributed to its β -glucan content. Meta-analyses of randomised controlled trials indicate that daily intakes of around 3 g of barley β -glucan can significantly reduce total and LDL cholesterol, with larger effects observed in individuals with elevated baseline cholesterol. These lipid-lowering effects are comparable to those seen with oat β -glucan and are recognised by several regulatory authorities in health claim approvals for barley-containing foods.

Talbina, as a barley-based porridge, is expected to share these cardioprotective properties. When prepared from wholegrain barley flour and consumed regularly, it can contribute to the daily intake of soluble fibre required for cholesterol reduction. Pilot studies suggest that talbina may improve lipid profiles and body weight in hyperlipidaemic individuals, although more robust, large-scale trials are needed. In addition, the viscous fibre matrix slows gastric emptying and glucose absorption, leading to flatter postprandial blood glucose curves and improved insulin responses.

The relatively low energy density of talbina, combined with its high fibre and water content, also promotes satiety. People who consume high-fibre breakfasts generally report reduced hunger and lower caloric intake at subsequent meals. In weight management programmes, replacing refined breakfast cereals with whole-grain porridges such as talbina may be an effective strategy to improve diet quality and support gradual weight loss or weight maintenance.

5.3 Gastrointestinal Health and Gut Microbiota:

The gastrointestinal tract is a central target for functional foods, and talbina is no exception. Barley β -glucan increases the viscosity of intestinal contents, which can slow nutrient absorption, enhance feelings of fullness and support glycaemic control. At the same time, both soluble and insoluble fibres escape digestion in the small intestine and are fermented by the colonic microbiota. This fermentation produces short-chain fatty acids such as acetate, propionate and butyrate, which serve as energy sources for colonocytes, strengthen the intestinal barrier and exert anti-inflammatory effects.

Studies of barley-rich diets show increases in beneficial bacterial groups, including *Bifidobacterium* and *Lactobacillus* species, and improvements in measures of stool bulk and transit time. When talbina is prepared with fermented milk or supplemented with probiotic cultures, the resulting product may function as a synbiotic, combining prebiotic fibres with live beneficial bacteria. This combination could enhance colonisation resistance against pathogens, support immune function and reduce the risk of gastrointestinal disorders.

Traditional descriptions of talbina as a gentle, easily tolerated food are consistent with these modern findings. Its smooth texture makes it appropriate for individuals with chewing or swallowing difficulties, while its fibre content helps maintain regular bowel function. In clinical settings, talbina could be used as part of recovery diets following surgery or illness, provided that individual tolerances and medical conditions are taken into account.

5.4 Antioxidant, Anti-Inflammatory and Immune Effects:

Oxidative stress and chronic low-grade inflammation play key roles in the development of cardiovascular disease, diabetes, neurodegenerative disorders and some cancers. Talbina contains several components that may counter these processes. Barley provides phenolic acids, flavonoids and tocopherols with antioxidant activity, while honey contributes a diverse profile of phenolic compounds and enzymes that scavenge free radicals. Milk and fermented milk supply bioactive peptides with reported immunomodulatory properties.

Experimental studies have shown that barley-based diets can reduce markers of oxidative stress and inflammation in animal models, improve lipid peroxidation profiles and modulate immune responses. Honey has been reported to enhance antioxidant capacity and exert protective effects in gastrointestinal and systemic models of inflammation. Although specific data on talbina are still limited, it is reasonable to infer that its combined ingredients act additively or synergistically to support antioxidant defence and immune health.

6. Mechanistic Insights into Talbina's Health Effects:

The health benefits of talbina can be better understood by examining the mechanisms attributed to its key bioactive components. First, soluble β -glucan forms viscous solutions in the small intestine, which interfere with cholesterol and bile acid reabsorption. This leads to increased excretion of bile acids and stimulates the liver to use circulating cholesterol for bile synthesis, thereby lowering serum LDL cholesterol. The same viscosity slows carbohydrate digestion and glucose absorption, improving postprandial glycaemic responses.

Second, fermentation of barley fibre by colonic bacteria generates short-chain fatty acids. Propionate has been associated with reduced hepatic cholesterol synthesis, while butyrate supports colonic mucosal health and may have anti-tumour properties. Short-chain fatty acids can also modulate the secretion of gut hormones involved in appetite regulation, such as peptide YY and glucagon-like peptide-1, thereby linking talbina intake with satiety and energy balance.

Third, the antioxidant and anti-inflammatory capacity of talbina's phenolic compounds and honey-derived bioactives may protect lipids, proteins and DNA from oxidative damage and dampen inflammatory signalling pathways. This could contribute to cardioprotection, neuroprotection and general anti-ageing effects. Finally, the observed impact of talbina on neurotransmitter levels in experimental models suggests that gut-brain interactions, micronutrient support for neurotransmitter synthesis and reduced oxidative stress in the nervous system may all play roles in its mood-modulating properties.

7. Talbina in Contemporary Diets and Product Development:

Given the growing interest in functional and traditional foods, talbina has considerable potential for integration into modern dietary patterns. In Muslim-majority societies, promoting talbina aligns with religious values and cultural heritage, which may enhance acceptability and adherence. Simple household preparations can be encouraged for breakfast, snacks or light evening meals, especially for elderly family members, pregnant or lactating women and individuals recovering from illness.

From a food technology perspective, talbina offers a versatile matrix for innovation. Instant talbina mixes could be produced by drying barley-milk-honey formulations, providing convenient options that retain β -glucan content. Probiotic talbina products, flavoured variants and formulations enriched with nuts or seeds are all possible avenues. Care should be taken to avoid excessive added sugars or highly processed additives that would undermine the health-promoting image of talbina.

In clinical nutrition, talbina could be considered as part of dietary interventions for hyperlipidaemia, type 2 diabetes, metabolic syndrome and mild to moderate depressive symptoms, always under professional supervision. Its role would be complementary rather than a replacement for established medical treatments. Further clinical trials are needed to establish optimal doses, frequencies and target populations, as well as to standardise preparation methods for research and commercial purposes.

8. Safety, Limitations and Research Gaps:

Talbina is generally considered a safe food for healthy individuals and has been consumed for centuries without major safety concerns. Nonetheless, several considerations should be noted. Barley contains gluten, so talbina is unsuitable for people with coeliac disease or non-coeliac gluten sensitivity. Individuals with cow's milk allergy or lactose intolerance may react to the dairy component, although lactose-free or plant-based alternatives could potentially be used. Honey should not be given to infants under one year of age because of the risk of infant botulism.

From a research perspective, many published studies on talbina have relatively small sample sizes, short durations and heterogeneous preparation methods. There is a need for well-designed, adequately powered randomised controlled trials that use standardised talbina formulations and clearly defined outcomes. Comparative studies between talbina and other whole-grain porridges would help clarify whether its effects are specific to its prophetic formulation or mainly reflect the general benefits of barley and fibre-rich foods.

Further work is also required to characterise the bioactive profile of talbina under different processing conditions, to explore its effects on diverse populations (for example, children, pregnant women and people with chronic diseases) and to investigate its long-term impact on mental health outcomes within the framework of nutritional psychiatry. Qualitative research on cultural perceptions and acceptability of talbina in various communities would enrich the quantitative evidence base.

9. Conclusion:

Talbina occupies a distinctive position as both a prophetic food in Islamic tradition and a modern candidate for classification as a functional food. Grounded in Qur'anic guidance to consume wholesome, lawful foods and supported by hadith emphasising its soothing effect on the heart, talbina illustrates how traditional knowledge can align with contemporary nutrition science. Its composition – integrating barley β -glucan and other fibres, dairy bioactives and honey-derived



phytochemicals – provides a sound biological basis for the health benefits attributed to it.

Current evidence suggests that talbina may contribute to improved mood and reduced depressive symptoms, better lipid and glycaemic profiles, enhanced gastrointestinal function and increased antioxidant and anti-inflammatory capacity. These effects operate through multiple mechanisms, including changes in intestinal viscosity, bile acid metabolism, gut microbiota composition, short-chain fatty acid production and neurotransmitter modulation.

While further high-quality research is needed to fully establish its clinical efficacy and optimal use, talbina is already a nutritionally rich, culturally meaningful and economically accessible food that can be safely incorporated into balanced diets for most adults. For Muslim communities in particular, it offers an appealing way to operationalise prophetic guidance on wholesome eating, connecting spiritual teachings with evidence-based dietary practices. For researchers and health professionals, talbina represents a valuable model for exploring how traditional foods can be leveraged as functional foods in the prevention and management of modern chronic diseases.

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