



NUTRIGENOMICS AND MEDICAL GENETICS PERSPECTIVES OF THE QUR'AN: SCIENTIFIC EXEGESIS OF Q.S. 'ABASA (80): 24–32 IN ṬAṬĀWĪ JAUHARĪ'S *AL-JAWĀHIR*



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Abstract

This article examines Ṭaṭāwī Jauharī's *tafsīr 'ilmī* of Surah 'Abasa (80:24–32) in *Al-Jawāhir* in dialogue with contemporary nutrigenomics and medical genetics. While existing scholarship focuses on thematic food surveys, ethics, or broad methodological exegesis, integration between Qur'anic food discourse and biomedical science remains limited—even as diet–gene interactions, metabolic dysregulation, inflammation, and long-term biological risk shape health challenges. This study's novelty lies in showing how Jauharī's reflections on food diversity, proportion, and moderation serve as a contextual bridge to modern nutrition science, rather than claiming he formulated modern theories. Employing qualitative library research with a contextual-hermeneutic approach, this study synthesizes textual analysis of Surah 'Abasa 24–32 and *Al-Jawāhir*, Jauharī's historical scientific reformism, and current nutrigenomics literature. Findings show that Jauharī's emphasis on proportional composition, differentiated food qualities, and moderation offers an essential exegetical resource for current discussions of nutritional quality, metabolic health, and intergenerational biological responsibility.

Abstrak

Artikel ini mengkaji tafsīr 'ilmī Ṭaṭāwī Jauharī atas Surah 'Abasa (80:24–32) dalam *Al-Jawāhir* melalui dialog dengan nutrigenomik dan genetika kedokteran kontemporer. Kajian terdahulu umumnya berfokus pada survei tematik pangan, etika halal–tayyib, atau metodologi tafsīr ilmiah secara umum. Integrasi antara eksegesis Al-Qur'an dan diskursus biomedis masih terbatas, padahal persoalan kesehatan modern ditandai oleh interaksi gen–diet, disregulasi metabolik, inflamasi, serta risiko biologis jangka panjang. Kebaruan artikel ini menunjukkan bagaimana refleksi Jauharī tentang keragaman pangan, proporsi, dan moderasi dapat ditafsirkan sebagai jembatan kontekstual menuju sains nutrisi mutakhir, tanpa mengklaim bahwa ia merumuskan teori biomedis modern. Menggunakan metode kualitatif studi pustaka dengan pendekatan hermeneutik-kontekstual, artikel ini memadukan analisis tekstual QS 'Abasa 24–32 dan *Al-Jawāhir*, pembacaan historis reformisme Jauharī, serta literatur nutrigenomik. Hasil penelitian menunjukkan bahwa penekanan Jauharī pada komposisi proporsional, perbedaan kualitas pangan, dan moderasi sangat relevan sebagai sumber eksegetis bagi diskusi mengenai kualitas nutrisi, kesehatan metabolik, dan tanggung jawab biologis antargenerasi.



Background

Qur'anic discourse on food extends far beyond the question of whether something is merely permissible or impermissible to consume. It encompasses creation, ecology, health, biological benefit, and the ethics of consumption. QS 'Abasa 24–32, in particular, directs human beings to reflect on their food and then unfolds the ecological chain that involves water, soil, grains, fruits, and fodder for livestock.¹

The primary text that constitutes the focus of this article is as follows.

فَلْيَنْظُرِ الْإِنْسَانُ إِلَى طَعَامِهِ^٢ (٢٤) أَنَا صَبَّبْنَا الْمَاءَ صَبًّا (٢٥) ثُمَّ شَقَقْنَا الْأَرْضَ شَقًّا (٢٦) فَأَنْبَتْنَا فِيهَا حَبًّا (٢٧) وَعِنَبًا وَقَضْبًا (٢٨) وَزَيْتُونًا وَنَخْلًا (٢٩) وَحَدَاقٍ غُلْبًا (٣٠) وَفَاكِهَةً وَأَبًّا (٣١) مَتَاعًا لَّكُمْ وَلِأَنْعَامِكُمْ (٣٢)

"So let man just consider his food: We poured water, pouring it in great abundance, and cleaved the earth, cleaving it asunder; then caused the grain to grow out of it, together with grapes and vegetables, and olives and palms, and dense orchards, and fruits and pastures – all this as a provision for you and your cattle."

In *Al-Jawāhir*, Ṭaṭṭāwī Jauharī approaches these verses through a distinctly *tafsīr* 'ilmī (scientific exegesis) orientation. He does not restrict their meaning to gratitude for divine blessing, but expands them into a call for scientific reflection on food, plants, and their benefits. As he states,

"أَفَلَا يَعْجِبُ الْمُسْلِمُونَ كَيْفَ يَأْكُلُونَ وَيَلْبَسُونَ وَيَتَدَاوُونَ بِنَبَاتَاتٍ كُلِّهَا مِنْ عَنَاصِرٍ وَاحِدَةٍ، وَلَكِنْ الْإِخْتِلَافُ جَاءَ مِنَ اخْتِلَافِ الْمَقَادِيرِ. أَفَلَا يَعْجَبُونَ أَنْ يَكُونَ أَنَّ مَا تَأْكُلُهُ النَّاسُ وَالْذَّوَابُّ وَمَا يَلْبَسُ النَّاسُ وَمَا يَتَدَاوُونَ بِهِ، كُلُّ ذَلِكَ مِنْ عَنَاصِرٍ وَاحِدَةٍ، اخْتَلَفَتْ مَقَادِيرُهَا"

"Do Muslims not wonder how they eat, dress, and treat their illnesses using plants made entirely of the same elements, yet the difference arises from the variation in proportions? Do they not wonder that what people and livestock eat, what people wear, and what they use for medicine—all of it comes from the same elements, differing only in their proportions?"²

This indicates that the verse invites human beings to reflect not only on sustenance itself but also on the natural processes and benefits associated with it. He does not stop at the meaning of divine blessing that must be gratefully acknowledged; rather, he develops the passage into an intellectual summons for the ummah to study plant structure, the diversity of foods, the pharmacological benefits of botanical substances, and the relationship between scientific knowledge and civilizational revival.³

At the same time, modern health challenges increasingly demand a renewed reading of food discourse. Nutrigenomics shows that nutrients and bioactive

¹ Ṭaṭṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, ed. Muhammad Abdus Salam Syahin, 2nd ed., vol. 13 (Beirut: Dar Al-Kutub Al-Ilmiyah, 2016), 58–59.

² Ṭaṭṭāwī Jauharī, 13:59.

³ Ṭaṭṭāwī Jauharī, 13:59.

compounds in food can modulate gene expression, influence metabolism, and shape vulnerability to chronic disease. At the same time, recent reviews on precision nutrition underline that interactions among genes, nutrients, the intestinal microbiota, and lifestyle are foundational for personalized disease prevention. Building on this, contemporary epigenetic studies indicate that diet can even affect outcomes across generations through altered gene regulation that does not change the DNA sequence but does affect phenotype and health risk in offspring.⁴

This reveals an important academic gap. Islamic studies on food have produced a rich fiqh literature that closely engages Qur'anic verses and prophetic traditions. Still, they typically focus on legal status, ritual purity, and general consumption ethics under the rubric of ḥalāl – ṭayyib, rather than on detailed discussions of diet – gene interactions, metabolic regulation, or molecular nutrition. By contrast, nutrigenomics and medical genetics largely develop within the language of the laboratory and precision medicine, often without serious engagement with the exegetical and juristic tradition.⁵

Within this landscape, Ṭaṭṭāwī Jauharī's Al-Jawāhir occupies a distinctive position. Unlike many classical mufasssirrūn, he systematically reads verses on food, plants, and natural phenomena through an explicitly scientific lens, linking them to questions of experimentation, civilizational progress, and the social consequences of scientific stagnation. This makes his tafsir a strong starting point for a critical dialogue with contemporary nutrigenomics and medical genetics, even though he did not use these modern terms.⁶

Although Al-Jawāhir does not explicitly discuss nutrigenomics or medical genetics as modern scientific disciplines, its reflections on food diversity, proportional composition, and moderation provide a fertile conceptual basis for interdisciplinary dialogue. The novelty of this article does not lie in claiming that classical tafsir

⁴ Meghna Birla et al., "The Advent of Nutrigenomics: A Narrative Review with an Emphasis on Psychological Disorders," *Preventive Nutrition and Food Science* 27, no. 2 (2022): 150 – 64, <https://doi.org/10.3746/pnf.2022.27.2.150>; Samy Mansour et al., "Precision Nutrition Unveiled: Gene--Nutrient Interactions, Microbiota Dynamics, and Lifestyle Factors in Obesity Management," *Nutrients* 16, no. 5 (2024): 581, <https://doi.org/10.3390/nu16050581>.

⁵ Mansour et al., "Precision Nutrition Unveiled: Gene--Nutrient Interactions, Microbiota Dynamics, and Lifestyle Factors in Obesity Management"; Santhanam Logamani and Theivasigamani Parthasarathi, "Nutrigenomics and the Interface between Diet and Gene Expression," *Food and Humanity* 6 (2026): 101104, <https://doi.org/10.1016/j.foohum.2026.101104>.

⁶ Camila U Braz et al., "Paternal Diet Induces Transgenerational Epigenetic Inheritance of DNA Methylation Signatures and Phenotypes in Sheep Model," *PNAS Nexus* 1, no. 2 (April 2022): pgac040, <https://doi.org/10.1093/pnasnexus/pgac040>; Adrian Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective," *Frontiers in Epigenetics and Epigenomics* 2 (2024): 1434253, <https://doi.org/10.3389/frae.2024.1434253>.

already contains detailed nutrigenomic theories, but in demonstrating how Jauharī's scientific exegesis can be systematically re-read in conversation with contemporary findings on gene – diet interactions, metabolic regulation, and epigenetic inheritance. In this way, the study seeks to construct a rigorous hermeneutic bridge between Qur'anic food ethics and biomedical discourse, rather than to project modern laboratory terminology anachronistically onto the classical text.⁷

For this reason, the present article advances three main foci. First, it explains how Ṭaṇṭāwī Jauharī interprets QS 'Abasa 24 – 32 as a scientific call to reflect on food. Second, it reads the concepts of proportional elements, fruit classification, and the prohibition of excess in *Al-Jawāhir* through the perspectives of nutrigenomics and medical genetics. Third, it explores how this dialogue expands the contemporary interpretive horizon of *ṭayyib* in relation to nutritional quality, metabolic balance, and long-term biological well-being.⁸

Research Method

This study adopts a qualitative library research design with a contextual – hermeneutic approach. The primary source is Ṭaṇṭāwī Jauharī's interpretation of QS 'Abasa 24 – 32 in *Al-Jawāhir fī Tafsīr al-Qur'ān al-Karīm*. In contrast, secondary sources include the journal's official template, editorial notes, and recent scientific literature on nutrigenomics, precision nutrition, diet-related inflammation, and intergenerational epigenetics published roughly within the last five years.⁹

The contextual-hermeneutic approach adopted in this study is structured to respond explicitly to the editorial request for a clearer explanation of the "dialogical bridge" between classical theological texts and empirical science. Conceptually, it draws on Abdullah Saeed's contextualist framework, which emphasizes moving from the socio-historical world of the Qur'an to contemporary concerns through stages of critical analysis and reapplication, and on Fazlur Rahman's double-movement hermeneutic, which links inductive analysis of Qur'anic teachings with their normative reformulation for modern contexts.¹⁰ Accordingly, the analysis avoids

⁷ Xiaoping Yu, Haomou Pu, and Margaret Voss, "Overview of Anti-Inflammatory Diets and Their Promising Effects on Non-Communicable Diseases," *British Journal of Nutrition* 132, no. 7 (2024): 898 – 918, <https://doi.org/10.1017/S0007114524001405>.

⁸ Barry Sears and Asish K Saha, "Dietary Control of Inflammation and Resolution," *Frontiers in Nutrition* 8 (2021): 709435, <https://doi.org/10.3389/fnut.2021.709435>; Yu, Pu, and Voss, "Overview of Anti-Inflammatory Diets and Their Promising Effects on Non-Communicable Diseases."

⁹ Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective"; Braz et al., "Paternal Diet Induces Transgenerational Epigenetic Inheritance of DNA Methylation Signatures and Phenotypes in Sheep Model."

¹⁰ Abdullah Saeed, *Interpreting the Qur'an: Towards a Contemporary Approach* (London and New York: Routledge, 2006).

claiming one-to-one correspondence between specific verses and particular laboratory findings. Instead, it proceeds through three interrelated layers: textual, historical, and contemporary-conceptual reading.

The textual layer focuses on close reading of QS 'Abasa 24 – 32 and the relevant passages in *Al-Jawāhir*, identifying key notions such as proportional composition, food diversity, the medical utility of plants, and criticism of intellectual stagnation. The historical layer situates *Al-Jawāhir* in early twentieth-century Egyptian reformism, where colonial pressure, the prestige of Western medical science, and internal debates over the role of reason and revelation shaped the emergence of *tafsīr 'ilmī*. The contemporary-conceptual layer then brings these textual and historical insights into dialogue with modern categories such as glycemic load, lipid quality, AMPK – mTOR signaling, NF-κB-mediated inflammation, and diet-related epigenetic regulation. The aim is not to force scientific data into the Qur'anic text, but to evaluate how Jauharī's intuitions and categories can inform, and be informed by, current biomedical discourse.¹¹

This methodological choice is crucial in responding to editorial concerns about overextending scientific claims in Qur'anic exegesis. By clearly distinguishing between the exegetical horizon of *Al-Jawāhir* and the empirical horizon of contemporary nutrigenomics and medical genetics, the study aims to avoid simplistic verse-to-data matching. Instead, it treats Jauharī's tafsir as a source of categories, values, and conceptual intuitions that can be critically related to present biomedical knowledge.¹²

Data analysis follows four operational steps. First, the study extracts key thematic units from the Qur'anic verses and Jauharī's commentary (e.g., water, soil, grains, fruits, fodder, and proportional elements). Second, the study maps these themes onto relevant scientific discussions in nutrigenomics, medical genetics, and nutrition science. Third, the study identifies and critically assesses convergences and tensions between the exegetical and scientific narratives. Fourth, the integrated insights are synthesized through a contextual – hermeneutic reading to explain how Jauharī's interpretation of food, proportion, and moderation may be meaningfully related to contemporary discussions of nutrigenomics, metabolic regulation, and intergenerational health.

Throughout the process, special attention is paid to maintaining methodological humility: Qur'anic exegesis is treated as a normative and conceptual resource, while

¹¹ Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective"; Braz et al., "Paternal Diet Induces Transgenerational Epigenetic Inheritance of DNA Methylation Signatures and Phenotypes in Sheep Model."

¹² Mansour et al., "Precision Nutrition Unveiled: Gene--Nutrient Interactions, Microbiota Dynamics, and Lifestyle Factors in Obesity Management."

scientific studies are treated as empirical evidence that refines, challenges, or concretizes ethical claims without being absolutized. Qur'anic discourse on food is not limited to legal permissibility or dietary prohibition. It also encompasses creation, ecological dependence, bodily benefit, and ethical reflection on sustenance. In a contextual-hermeneutic framework, this means that Qur'anic references to food may be read not only devotionally or legally, but also as opening a broader field of reflection on health, biological processes, and the conditions that sustain life.¹³

From a contemporary perspective, this broader field becomes especially relevant in light of developments in molecular nutrition, nutrigenomics, and medical genetics. Modern nutritional science shows that food is not merely a source of calories, but a complex biological input that can influence metabolism, inflammatory pathways, gene expression, and, in some cases, intergenerational biological patterns. The dialogue between Qur'anic food discourse and molecular nutrition therefore does not seek to impose modern science onto the text, but to clarify how the exegetical tradition may be reread in conversation with present-day biomedical knowledge.¹⁴

Results and Discussion

Ṭaṇṭāwī Jauharī and Scientific Reformism

Ṭaṇṭāwī Jauharī is widely recognized as one of the modern *mufasssīrūn* who promotes a scientific reading of the Qur'anic signs in nature (*āyāt kauniyyah*). In his intellectual project, tafsir is not confined to clarifying lexical or doctrinal meaning; it serves as a vehicle for cultivating scientific consciousness, encouraging observation of the natural world, and showing that the Qur'an invites systematic inquiry rather than passive piety. Majid Daneshgar's study on *Tantawi Jawhari and the Qur'an* shows that his commentary shocked parts of the Cairo educational establishment because of its extensive use of contemporary science and its call for intellectual renewal among Muslims.¹⁵

In the portion of *Al-Jawāhir* examined here, Jauharī expresses astonishment that people fail to reflect on the fact that plants serving as food, clothing, and medicine derive from the same basic elements, yet differ in their proportions. He illustrates this with cotton, clover, and wheat, which arise from similar elements but yield very different functions because of differences in composition and processing. For him,

¹³ Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective."

¹⁴ Saba Aljasir et al., "Nutrigenomics-Guided Lifestyle Intervention Programmes: A Critical Scoping Review with Directions for Future Research," *Clinical Nutrition ESPEN* 64 (2024): 296 – 306, <https://doi.org/10.1016/j.clnesp.2024.10.149>.

¹⁵ Lukman Abdul Mutalib et al., "Scientific Exegesis of Al-Quran and Its Relevance in Dealing with Contemporary Issues: An Appraisal on the Book of {Al-Jawahir Fi Tafsir Al-Quran Al-Karim}," *International Journal of Recent Technology and Engineering*, 2019, 189 – 90, <https://doi.org/10.35940/ijrte.B1089.0982S1119>.

such reflections are not merely botanical curiosities; they are signs that should stimulate systematic study of plant structure, agricultural practice, and pharmacological benefit, and they reveal the intellectual negligence of a community that ignores them.¹⁶

Jauharī's scientific reformism becomes even more apparent when he links this negligence to the broader political and civilizational condition of Muslims. He explicitly connects the community's failure to grasp the scientific implications of Qur'anic calls to reflect on food with the broader context of European dominance over Muslim lands. He argues that colonial power is reinforced by Muslim ignorance of science and technology. In his view, the Qur'an's emphasis on *āyāt kauniyyah* demands that Muslims rebuild their scientific capabilities; ignoring this call contributes directly to social and economic backwardness.¹⁷

For this reason, *Al-Jawāhir* can be read as an attempt to restore the relationship between religion and science amid the crisis of modernity. As several studies on his methodology note, Jauharī adopts a tahlili (analytical) format but fills it with extensive scientific digressions, diagrams, and discussions of physics, biology, and other disciplines to show that Qur'anic verses about nature are compatible with, and even encourage, modern scientific inquiry. Critics have observed that he sometimes stretches scientific references and that later figures such as Zaghoul Naggar calibrate scientific tafsir more carefully. Yet, they still acknowledge Jauharī's pioneering role in popularising scientific themes within Qur'anic exegesis.¹⁸

Consequently, *Al-Jawāhir* may be understood as a reformist project that seeks to realign Muslim attitudes toward science by presenting the natural world as a field of investigation mandated by revelation. For Jauharī, studying food is not merely a matter of household management or agriculture; it is part of a broader agenda of civilizational renewal in which scientific engagement becomes an expression of obedience to God and a means to recover communal dignity. This broader horizon makes his tafsir particularly relevant to contemporary efforts to build a dialogical bridge between Qur'anic exegesis, nutrigenomics, and medical genetics.¹⁹

¹⁶ Majid Daneshgar, *Tantawī Jawhari and the Qur'an; Tafsir and Social Concerns in the Twentieth Century* (London: Routledge, 2017), 45–52, <https://doi.org/10.4324/9781315167763>.

¹⁷ Ṭaṭṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, 13:59.

¹⁸ Daneshgar, *Tantawī Jawhari and the Qur'an; Tafsir and Social Concerns in the Twentieth Century*, 70–75; Ṭaṭṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, 13:59.

¹⁹ Mizanur Rahman and Abu Talib Mohammad Monawer, "Methodology of Tantawī Jawhari and Zaghoul Naggar in the Scientific Interpretation of The Holy Qur'an: A Comparative Study," in *International Conference on Islam and Contemporary Issues in the Muslim World: Challenges and Way Forward* (Kuala Lumpur: Academy of Islamic Studies University of Malaya, 2016).

In comparison with many classical exegetes such as al-Ṭabarī or al-Qurṭubī, whose discussions of food and nature generally remain within legal, theological, or moral frameworks, Jauharī's *Al-Jawāhir* stands out for the sheer scale and explicitness of its scientific engagement. Even when later authors and institutional projects such as the Indonesian Ministry of Religious Affairs' *tafsīr 'ilmī* literature develop their own scientific interpretations, they often work with selected themes and shorter commentaries, whereas Jauharī produced a multi-volume work that systematically integrates discussions of botany, geology, physics, and medicine into his running commentary on the Qur'an. This does not mean that his interpretations are always more precise than contemporary scientific *tafsīr*; indeed, some studies argue that later figures refine his approach, but it does indicate that *Al-Jawāhir* occupies a pioneering position in treating *āyāt kauniyyah* as a sustained program for scientific reflection and civilizational reform.²⁰

Plants, Proportions, and the Logic of Nutritional Diversity

One of Jauharī's most original contributions is his claim that plants used as food, clothing, and medicine originate from the same elements but differ in proportion. He states:

"أَفَلَا يَعِجِبُ الْمُسْلِمُونَ كَيْفَ يَأْكُلُونَ وَيَلْبَسُونَ وَيَتَدَاوُونَ بِنَبَاتَاتٍ كُلُّهَا مِنْ عَنَاصِرٍ وَاحِدَةٍ، وَلَكِنْ الْاِخْتِلَافُ جَاءَ مِنَ اخْتِلَافِ الْمَقَادِيرِ. أَفَلَا يَعِجِبُونَ أَنْ يَكُونَ أَنَّ مَا تَأْكُلُهُ النَّاسُ وَالْذَّوَابُ وَمَا يَلْبَسُ النَّاسُ وَمَا يَتَدَاوُونَ بِهِ، كُلُّ ذَلِكَ مِنْ عَنَاصِرٍ وَاحِدَةٍ، اخْتَلَفَتْ مَقَادِيرُهَا".

"Do Muslims not wonder how they eat, dress, and treat their illnesses using plants made entirely of the same elements, yet the difference arises from the variation in proportions? Do they not wonder that what people and livestock eat, what people wear, and what they use for medicine—all of it comes from the same elements, differing only in their proportions?"

Here he offers a kind of material philosophy of food: diversity of benefit does not arise from absolute discontinuity between objects, but from variation in the arrangement and proportion of their components.²¹

In nutrigenomics and precision nutrition, the biological quality of a given food is likewise determined by its compositional profile simple or complex carbohydrates, fiber content, types of fatty acids, vitamins, minerals, and phytochemicals so that two items both called "plants" can elicit very different metabolic responses if their

²⁰ Andhizarizqi Mulyawan et al., "The Morphology of Seed-Bearing Plants in The Qur'an: A Thematic Analysis of Tantawi Jawhari and Tafsir Ilmi by the Indonesian Ministry of Religious Affairs," *Jurnal Ilmu Pertanian Indonesia* 31, no. 1 (October 30, 2025): 114–20, <https://doi.org/10.18343/jipi.31.1.114>; Mutalib et al., "Scientific Exegesis of Al-Quran and Its Relevance in Dealing with Contemporary Issues: An Appraisal on the Book of {Al-Jawahir Fi Tafsir Al-Quran Al-Karim}," 189–93.

²¹ Ṭanṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, 13:59.

compositions differ. Thus, Jauharī's idea of proportion can be read as an early intuition of a core principle in modern nutrition: composition determines function. This does not mean that he articulated contemporary biochemistry. Still, it shows that his exegetical horizon is open to scientific discussion of how different foods affect the body.²²

Fruit Classification and Functional Reading of Food

Jauharī also presents a detailed classification of fruits. After urging Muslims to reflect on their food in light of the verse "*fal-yanẓur al-insānu ilā ṭa'āmih*", he writes:

إِنَّ الْفَاكِهَةَ مِنْ أَنْوَاعِ النَّبَاتِ، وَهِيَ أَنْوَاعٌ لَا عِلْمَ لِأَحَدٍ بِحَصْرِهَا، وَيَجْمَعُهَا سَبْعَةُ أَنْوَاعٍ كَمَا قَالَ الْعَالِمُ (فونساغريف):

(١) الْفَوَاكِهُ الْحَمَضِيَّةُ كَالْبُرْتَقَالِ وَاللَّيْمُونِ وَالتَّمَرِ هِنْدِيٍّ وَالْأَنَانِيسِ وَالرُّمَّانِ.

(٢) الْفَوَاكِهُ الْمُرَّةُ مِثْلُ: الشَّلِيكِ وَالتَّوْتِ الشُّوكِيِّ (الفرامبواز) وَالْخَوْخِ.

(٣) الْفَوَاكِهُ السُّكَّرِيَّةُ وَهِيَ الَّتِي غَلَبَتْ فِيهَا الْمَادَّةُ السُّكَّرِيَّةُ، مِثْلُ: الْبَرْفُوقِ وَالْعَنْبِ وَالتَّمَرِ وَالتَّيْنِ وَالْقِرَاصِيَا.

(٤) الْفَوَاكِهُ الرَّيْبِيَّةُ وَهِيَ الَّتِي يُكَثَّرُ فِيهَا مَوَادُّ دُهْنِيَّةٌ، مِثْلُ: الرَّيْبُونِ وَالْجُوزِ وَاللُّوزِ وَالرَّرَّ وَجُزْزِ الْكُوْخُو.

(٥) الْفَوَاكِهُ الْمَائِيَّةُ: كَالشَّمَامِ وَالْبَطِيْخِ.

(٦) الْفَوَاكِهُ الْعِطْرِيَّةُ: كَالْمَانِجُوِّ وَالْخَوْخِ.

(٧) الْفَوَاكِهُ النَّشْوِيَّةُ مِثْلُ: السُّفْرَجَلِ وَالزَّرْعَرُورِ وَالْغَبِيرَاءِ فَهِيَ نَشْوِيَّةٌ وَقَابِضَةٌ.²³

"Fruit belongs to the plant kingdom, comprising types too numerous to enumerate exhaustively; however, as the scholar Fonssagrives states, they may be grouped into seven categories: (1) citrus fruits, such as orange, lemon, tamarind, pineapple, and pomegranate; (2) tart fruits, such as strawberry, raspberry, and peach; (3) sugary fruits, in which sugar content predominates, such as plum, grape, date, fig, and greengage; (4) oily fruits, rich in fatty substances, such as olive, walnut, almond, rice, and cocoa; (5) watery fruits, such as melon and watermelon; (6) aromatic fruits, such as mango and peach; and (7) starchy fruits, such as quince, hawthorn, and whitebeam, which are starchy and astringent."

He then emphasized:

فَهَذِهِ أَنْوَاعُ الْفَوَاكِهِ، وَتَحْتَ كُلِّ مِنْهَا أَنْوَاعٌ كَثِيرَةٌ، وَكُلُّهَا يَأْكُلُهَا الْإِنْسَانُ، وَيَسْتَعِينُ بِهَا عَلَى غِذَائِهِ، وَلَا يَجُوزُ فِي الطَّبِّ الْإِفْرَاطُ مِنْهَا.²⁴

"These are the types of fruits, and under each of them are wide varieties. Humans consume all of them to aid their nutrition, but in medicine, excessive consumption of them is not permissible."

This classification is significant not because it matches modern nutritional taxonomies, but because it reflects a systematic effort to read food in terms of its

²² Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective"; Braz et al., "Paternal Diet Induces Transgenerational Epigenetic Inheritance of DNA Methylation Signatures and Phenotypes in Sheep Model"; Logamani and Parthasarathi, "Nutrigenomics and the Interface between Diet and Gene Expression."

²³ Ṭaṭṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, 13:59.

²⁴ Ṭaṭṭāwī Jauharī, 13:60.

dominant qualities. In modern scientific terms, this scheme can be reread functionally: citrus fruits tend to be associated with organic acids and certain vitamins; sweet fruits with energy density and sugars; fatty fruits such as olives, walnuts, and almonds with lipid quality; watery fruits with hydration; while aromatic, phytochemical-rich fruits may be linked to antioxidant and anti-inflammatory activity. Crucially, Jauharī also stresses that all these fruits benefit human nutrition but should not be consumed excessively in therapeutic contexts, indicating an awareness that biological benefits are always tied to proportion and dosage.²⁵

Nutrigenomics and Molecular Regulation

Nutrigenomics examines how dietary components interact with the genome, transcriptome, proteome, and metabolome to shape biological responses. The field rejects the simplistic assumption that all individuals respond to food in the same way.²⁶

A key implication is that diet quality cannot be assessed on calories alone. The composition of carbohydrates, fat types, fiber levels, and bioactive compounds can alter the expression of genes involved in glucose metabolism, fat storage, oxidative stress, and inflammation.²⁷

Accordingly, Qur'anic discourse on food acquires new depth when linked to the question of what kinds of foods truly foster biological well-being. This article uses nutrigenomics not to claim that the Qur'an predicted modern science in detail, but to clarify how the general principles Jauharī identifies translate into the language of contemporary molecular mechanisms.²⁸

Read together, these nutrigenomic insights clarify how Jauharī's emphasis on proportional elements, differentiated fruit qualities, and cautions against excess translate into contemporary categories such as glycemic burden, lipid quality, and inflammatory load. His distinction between sweet, fatty, watery, and aromatic fruits, for example, can be reframed in terms of fiber density, fatty-acid profiles, hydration, and phytochemical richness—each of which is now known to modulate key pathways of glucose regulation, AMPK – mTOR signaling, and NF- κ B-mediated inflammation. The article therefore proposes that Jauhari's scientific exegesis, while

²⁵ Alireza Nourazarain and Yashar Vaziri, "Nutrigenomics Meets Multi-Omics: Integrating Genetic, Metabolic, and Microbiome Data for Personalized Nutrition Strategies," *Genes & Nutrition* 20 (2025): 30, <https://doi.org/10.1186/s12263-025-00790-9>.

²⁶ Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective"; Braz et al., "Paternal Diet Induces Transgenerational Epigenetic Inheritance of DNA Methylation Signatures and Phenotypes in Sheep Model."

²⁷ Mansour et al., "Precision Nutrition Unveiled: Gene--Nutrient Interactions, Microbiota Dynamics, and Lifestyle Factors in Obesity Management."

²⁸ Mansour et al.

pre-nutrigenomic, provides a conceptual grammar for interpreting present-day molecular findings on diet and disease ethically and theologically.²⁹

Molecular Pathways: Glycemic Load, Lipid Quality, and Inflammatory Regulation

Diets high in simple sugars and refined carbohydrates tend to produce repeated spikes in glucose and insulin, which over time are associated with insulin resistance, fat accumulation, and disrupted energy regulation. In contemporary nutrition science, this concern is often expressed through concepts such as glycemic load, fiber density, and the structure of the overall food matrix rather than calories alone. When Jauharī distinguishes "sweet" fruits from other groups in his classification and warns against uncontrolled consumption, particularly in therapeutic contexts, his tafsir can be read as an early intuition that not all sources of sweetness have the same physiological impact. That benefit depends on how a given food is composed and used. Within a contextual-hermeneutic framework, this allows his qualitative categories to enter dialogue with modern efforts to differentiate between rapidly absorbed sugars and more complex, fiber-rich matrices that moderate postprandial glycemic responses.³⁰

Lipid quality is a closely related dimension. Dietary patterns that limit excessive saturated fat, provide adequate omega-3 fatty acids, and are rich in monounsaturated fats and polyphenols are generally considered more supportive of inflammatory control and insulin sensitivity than diets dominated by poor-quality fats. In this light, Jauharī's specific mention of olives, almonds, and other "fatty" fruits can be interpreted, not as a detailed biochemical taxonomy, but as a functional recognition that certain plant-based fats have distinctive benefits that justify their separate treatment. Read alongside current evidence on lipid profiles, his emphasis on proportion and moderation suggests a dialogical relationship in which Jauharī's categories guide attention to qualitative differences among fatty foods. In contrast, modern biomedical research supplies the molecular explanation for why some lipid patterns protect metabolic homeostasis more than others.³¹

²⁹ Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective"; Braz et al., "Paternal Diet Induces Transgenerational Epigenetic Inheritance of DNA Methylation Signatures and Phenotypes in Sheep Model."

³⁰ Saiful Singar et al., "Personalized Nutrition: Tailoring Dietary Recommendations through Genetic Insights," *Nutrients* 16, no. 16 (2024): 2673, <https://doi.org/10.3390/nu16162673>; Ramatu Wuni and Karani Santhanakrishnan Vimalaswaran, "Barriers in Translating Existing Nutrigenetics Insights to Precision Nutrition for Cardiometabolic Health in Ethnically Diverse Populations," *Lifestyle Genomics* 17, no. 1 (October 28, 2024): 122–35, <https://doi.org/10.1159/000541909>.

³¹ Ṭaṭṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, 13:59–60; George Lagoumintzis, Nikolaos A Afratis, and George P Patrinos, "Editorial: Nutrigenomics and

Beyond glycemic and lipid dimensions, moderation also intersects with the body's cellular energy-sensing pathways. Put simply, mTOR may be understood as a regulator of growth and anabolism that tends to be active when energy and nutrients are abundant, whereas AMPK functions as an energy sensor that helps the body adapt to demands for efficiency, repair, and metabolic balance.³² Chronic overnutrition, especially energy-dense diets poor in nutrient quality, can drive excessive anabolic signaling and disrupt homeostasis. By contrast, more proportionate dietary patterns, with controlled glycemic burden and adequate anti-inflammatory components, tend to favor metabolic stability and activate more protective pathways. This is where Jauharī's warning against excessive fruit consumption becomes especially meaningful. Moderation is not merely an individual moral virtue; it is also a biological strategy that protects the body from long-term metabolic stress.³³

Closely related to these metabolic pathways is the question of inflammation. Low-grade chronic inflammation is a key bridge between poor diet and non-communicable diseases. Recent work shows that high levels of certain saturated fats, refined carbohydrates, and pro-inflammatory dietary patterns can amplify activation of inflammatory pathways such as NF-κB.³⁴ Conversely, fiber, omega-3 fatty acids, polyphenols, fruits, vegetables, and nuts can help dampen inflammatory signaling and improve the quality of immunometabolic responses. In this sense, ṭayyib foods should help maintain physiological calm rather than sustain chronic inflammation.³⁵

Personalized Nutrition: Advancing Basic, Clinical, and Translational Research," *Frontiers in Nutrition* 11 (2024): 1435475, <https://doi.org/10.3389/fnut.2024.1435475>; George Lagoumintzis and George P. Patrinos, "Triangulating Nutrigenomics, Metabolomics and Microbiomics toward Personalized Nutrition and Healthy Living," *Human Genomics* 17, no. 1 (December 8, 2023): 109, <https://doi.org/10.1186/s40246-023-00561-w>.

³² Lagoumintzis, Afratis, and Patrinos, "Editorial: Nutrigenomics and Personalized Nutrition: Advancing Basic, Clinical, and Translational Research"; Lagoumintzis and Patrinos, "Triangulating Nutrigenomics, Metabolomics and Microbiomics toward Personalized Nutrition and Healthy Living."

³³ Josñ Ostaiza-Cardenas et al., "Epigenetic Modulation by Life-Style: Advances in Diet, Exercise, and Mindfulness for Disease Prevention and Health Optimization," *Frontiers in Nutrition* 12 (2025): 1632999, <https://doi.org/10.3389/fnut.2025.1632999>; Ṭanṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, 13:59–60.

³⁴ Erica Graff et al., "Dietary Intake and Systemic Inflammation: Can We Use Food as Medicine?," *Current Nutrition Reports* 12, no. 2 (January 20, 2023): 247–54, <https://doi.org/10.1007/s13668-023-00458-z>; Gynette L Reyneke, Kelly Lambert, and Eleanor J Beck, "Dietary Patterns Associated With Anti-Inflammatory Effects: An Umbrella Review of Systematic Reviews and Meta-Analyses," *Nutrition Reviews* 84, no. 6 (June 1, 2026): 1167–92, <https://doi.org/10.1093/nutrit/nuaf104>.

³⁵ Graff et al., "Dietary Intake and Systemic Inflammation: Can We Use Food as Medicine?"; Reyneke, Lambert, and Beck, "Dietary Patterns Associated With Anti-Inflammatory Effects: An Umbrella Review of Systematic Reviews and Meta-Analyses."

Epigenetics, Inheritance, and Medical Genetics

Recent research shows that environmental factors, including diet, can alter gene regulation through DNA methylation, histone modification, and other mechanisms without changing the underlying nucleotide sequence. Studies in this field show that specific nutrients, bioactive compounds, and overall dietary patterns can up- or down-regulate genes involved in metabolism, inflammation, and cellular stress responses, thereby influencing an individual's long-term health profile. These findings have led to a growing recognition that diet functions not only as a source of energy and micronutrients, but also as a powerful epigenetic signal that interacts with the genome throughout the life course.³⁶

Several studies further suggest that these epigenetic changes may have cross-generational effects, even though the scientific discussion remains complex and contested. Evidence from animal models and emerging human data on paternal diet and transgenerational DNA methylation signatures indicate that certain nutritional exposures can leave molecular marks that persist into subsequent generations. At the same time, other effects appear to be transient or context-dependent. Although researchers continue to debate the robustness, mechanisms, and ethical implications of these findings, the overall trend supports the assumption that diet quality does not stop at the individual body and may affect offspring and broader family health trajectories.³⁷

From this point, the article's medical genetics dimension is justified. The relationship between food and genes is not only about personalized diet; it is also about biologically protecting future generations. In this perspective, dietary choices become part of a wider ethical horizon in which attention to nutrient density, metabolic safety, and inflammatory load contributes not merely to present well-being, but to the genomic and epigenetic environments that future children may inherit.³⁸

Re-reading Ṭayyib as Nutritional and Genomic Responsibility

This article proposes that *ṭayyib* comprises at least four layers: legal-ethical soundness, nutritional adequacy, metabolic safety, and genomic responsibility. In this formulation, food may be *ḥalāl* yet not fully *ṭayyib* if, biologically, it is dominated by

³⁶ Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective"; Karin Moelling, "Epigenetics and Transgenerational Inheritance," *The Journal of Physiology* 602, no. 11 (June 29, 2024): 2537–45, <https://doi.org/10.1113/JP284424>.

³⁷ Shriya Samudrala et al., "Harnessing Diet and Gene Expression Insights through a Centralized Nutrigenomics Database to Improve Public Health," in *Proceedings of the 14th International Conference on Data Science, Technology and Applications (DATA 2025)* (SciTePress, 2025), 291–98, <https://doi.org/10.5220/0013457600003967>.

³⁸ Bird, "Transgenerational Epigenetic Inheritance: A Critical Perspective"; Moelling, "Epigenetics and Transgenerational Inheritance."

ultra-processed components, excessive sugars, excessive saturated fats, or low levels of micronutrients and fiber.³⁹

This reading does not change the core meaning of *ṭayyib* in the Islamic tradition, but operationalizes it more concretely. In societies flooded with industrial food products, the criterion of "good" cannot rest solely on source ingredients; it must also account for long-term effects on gene expression, inflammation, insulin sensitivity, and reproductive health.⁴⁰

The synthesis between Jauharī's tafsir of QS 'Abasa 24–32 and contemporary nutrigenomics is best understood at the level of interpretive concepts rather than formal legal frameworks. When he emphasizes proportional balance, differentiated fruit qualities, and the dangers of excess, Jauharī offers an exegetical reading of how food should be understood in relation to human well-being, not a set of detailed juridical rulings. In a contextual-hermeneutic perspective, these insights can be reread today as encouraging reflection on how dietary patterns shape metabolic stability, inflammatory risk, and even the biological conditions that may affect one's descendants.⁴¹

If parental diet can influence metabolic health and aspects of gene regulation across generations—as suggested by recent work in nutrigenomics and medical genetics—then Qur'anic calls to reflect on food acquire an additional layer of contemporary resonance. In this sense, biomedical research does not prove that Jauharī anticipated modern science, nor does it expand *ḥifẓ al-naḥs* or *ḥifẓ al-naḥs* in a technical legal sense; rather, it provides empirical depth to an exegetical intuition already present in his tafsir, namely that food is a site where ethical responsibility, bodily welfare, and concern for future generations converge.⁴²

The findings of this study indicate that Ṭanṭāwī Jauharī's interpretation of QS 'Abasa 24–32 provides a productive set of exegetical insights on food, proportion, and moderation that can be brought into critical dialogue with contemporary discussions in nutrigenomics and medical genetics, without claiming that he explicitly formulated these modern disciplines. Through a contextual-hermeneutic reading, his emphasis on plants that share similar elements yet differ in their proportions can be understood as an interpretive intuition about how differences in

³⁹ Wuni and Vimalaswaran, "Barriers in Translating Existing Nutrigenetics Insights to Precision Nutrition for Cardiometabolic Health in Ethnically Diverse Populations"; Don Roosan et al., "Opportunities to Integrate Nutrigenomics into Clinical Practice and Patient Counseling," *European Journal of Clinical Nutrition* 77, no. 1 (January 20, 2023): 36–44, <https://doi.org/10.1038/s41430-022-01146-x>.

⁴⁰ Saeed, *Interpreting the Qur'an: Towards a Contemporary Approach*.

⁴¹ Saeed.

⁴² Ṭanṭāwī Jauharī, *Al-Jawāhir Fī Tafsīr Al-Qur'ān Al-Karīm*, 13:59–60; Rahman, *Islam and Modernity: Transformation of an Intellectual Tradition*.

composition contribute to differences in effect. The significance of his tafsir therefore lies not in anticipating modern biochemistry, but in its openness to scientific reflection on food, bodily benefit, and the relationship between knowledge and human well-being.⁴³

Jauharī's classification of fruits into qualitative categories and his insistence on moderation deepen this interpretive relevance. Rereading these categories in light of current concerns about glycemic burden, lipid quality, inflammation, and diet-related gene regulation offers a conceptual vocabulary for relating Qur'anic discourse on food to present-day health debates. Such a rereading does not collapse revelation into laboratory science, nor does it reduce the Qur'an to a biomedical manual; rather, it shows how the exegetical tradition can remain intellectually dynamic when brought into a carefully framed dialogue with changing scientific knowledge.⁴⁴

This also has implications for interpreting *ṭayyib*. In the context of contemporary food systems shaped by ultra-processed products, chronic metabolic disease, and growing awareness of diet – gene interaction, *this study interprets ṭayyib* as an ethical and interpretive category that invites reflection on nutritional quality, metabolic balance, and long-term biological consequences. From a contextual-hermeneutic perspective, this does not replace the classical meanings of *ṭayyib*, but broadens their interpretive horizon so that Qur'anic food ethics can speak meaningfully to current concerns about diet-related health risks and intergenerational vulnerability. In this sense, the article proposes a contemporary reconstruction of *ṭayyib* inspired by, but not identical with, Jauharī's *tafsīr 'ilmī*.⁴⁵

At the same time, clear limits must be acknowledged. Jauharī's tafsir should not be portrayed as a detailed anticipation of twenty-first-century nutrigenomics, and current scientific findings—especially in transgenerational epigenetics—remain open to refinement and debate. The value of the present interdisciplinary reading lies in constructing a dialogical bridge between the exegetical tradition and contemporary science while maintaining methodological humility toward both text and data.⁴⁶

⁴³ Ostaiza-Cardenas et al., "Epigenetic Modulation by Life-Style: Advances in Diet, Exercise, and Mindfulness for Disease Prevention and Health Optimization."

⁴⁴ Sears and Saha, "Dietary Control of Inflammation and Resolution"; Yu, Pu, and Voss, "Overview of Anti-Inflammatory Diets and Their Promising Effects on Non-Communicable Diseases."

⁴⁵ Vipin Kumar Singh et al., "Precision Nutrition-Based Strategy for Management of Human Diseases and Healthy Aging: Current Progress and Challenges Forward," *Frontiers in Nutrition* 11 (August 9, 2024), <https://doi.org/10.3389/fnut.2024.1427608>.

⁴⁶ Saeed, *Interpreting the Qur'an: Towards a Contemporary Approach*.

Conclusion

This study has shown that Ṭaṇṭāwī Jauharī's *tafsīr 'ilmī* of QS 'Abasa 24 – 32 in *Al-Jawāhir* offers more than a devotional reminder about gratitude for sustenance. His interpretation presents food, plants, and natural processes as legitimate objects of reflection, inquiry, and civilizational concern, especially through his emphasis on proportion, diversity, and moderation. This article does not claim that Jauharī explicitly formulated nutrigenomics or medical genetics, but shows how these exegetical insights can enter a careful contextual-hermeneutic dialogue with contemporary discussions of nutrition, metabolism, inflammation, and gene – environment interaction.⁴⁷

Within this dialogue, the notion of *ṭayyib* is not presented as a category that Jauharī directly redefines in modern biomedical terms. Rather, the article proposes a contemporary interpretive reconstruction of *ṭayyib* based on Jauharī's reflections on food quality, differentiated properties, and the dangers of excess. In this study, "genomic responsibility" is therefore used in a limited and operational sense to refer to ethical attentiveness to how dietary patterns may influence gene regulation, metabolic health, and the biological conditions that can affect future generations; it is not meant as a technical legal concept derived explicitly from the *tafsir* itself.⁴⁸

The article also contributes to contemporary Qur'anic hermeneutics and interdisciplinary Islamic studies by showing how to relate classical exegesis to current biomedical knowledge without collapsing one into the other. Methodologically, it argues for a dialogical model in which *tafsir* functions as an interpretive and ethical resource. At the same time, modern science supplies empirical descriptions that may clarify, challenge, or deepen present understandings of food and health. In this sense, the study contributes not only to the interpretation of QS 'Abasa 24 – 32, but also to broader efforts to build more responsible conversations between Qur'anic studies, health humanities, and Muslim engagements with contemporary science.

At the same time, this study has important limitations. It is a qualitative library study based on one mufasssīr, one primary exegetical work, and one cluster of verses, and it does not provide experimental or clinical evidence for the dietary implications discussed here. In addition, the scientific literature on nutrigenomics, especially transgenerational epigenetics, remains dynamic and, in some respects, contested, so the biomedical dialogue proposed in this article should be understood as provisional rather than final. Future research may therefore expand the analysis to other Qur'anic

⁴⁷ Birla et al., "The Advent of Nutrigenomics: A Narrative Review with an Emphasis on Psychological Disorders"; Mansour et al., "Precision Nutrition Unveiled: Gene--Nutrient Interactions, Microbiota Dynamics, and Lifestyle Factors in Obesity Management."

⁴⁸ Logamani and Parthasarathi, "Nutrigenomics and the Interface between Diet and Gene Expression."

food passages, compare Jauharī with additional exegetes, and explore how empirically grounded studies of diet and health might further refine contemporary Islamic reflections on food ethics, metabolic well-being, and intergenerational biological responsibility.⁴⁹

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⁴⁹ Mansour et al., "Precision Nutrition Unveiled: Gene--Nutrient Interactions, Microbiota Dynamics, and Lifestyle Factors in Obesity Management"; Logamani and Parthasarathi, "Nutrigenomics and the Interface between Diet and Gene Expression."

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