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EXPANDING KNOWLEDGE ABOUT NUTRITION AND HEALTH

ORIGINAL RESEARCH

2. Diagnosis and classification of diabetes: Standards of Care in Diabetes—2026. - Evidence review

Dott. A. Conte[1]

1 Nutritional Biologist, Italy

1. ABSTRACT

The publication analyzed is an annual document of clinical standards from the American Diabetes Association (ADA), not an experimental study on patients. Its purpose is to define updated criteria for the diagnosis and classification of diabetes. Only the abstract is available in the provided material; it confirms the document's nature as a clinical recommendation but does not directly report diagnostic thresholds, quantitative data, bibliographic research methods, or experimental results.In the chapter on fasting glycemia, "The Choice to Live in Health or Illness" by Dr. A. Colonnese and R. Panzironi references this publication for two key points: the classification of fasting plasma glucose values and the need to confirm abnormal diagnostic results in the absence of symptoms. Independent literature supports that fasting glycemia equal to or greater than 126 mg/dL is a highly specific criterion, but it may not identify all cases detected by other tests. Furthermore, glycated hemoglobin is useful but may be less reliable when the lifespan of red blood cells is altered. The body of evidence supports moderate confirmation of the narrative: threshold values have a solid clinical function, while the choice of test requires attention to the individual context.

ONLINE ARTICLE

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MISSION

LIFE Science Hub – Journal of Science was founded with the aim of making scientific knowledge accessible without giving up methodological rigour, quality of sources and authoritativeness of content. The journal promotes the dissemination of knowledge in the health, nutrition, medical and longevity sciences, building a bridge between the world of research and society.

Through articles, reviews, in-depth analyses and expert contributions, the Journal champions evidence-based medicine and science, fostering a correct interpretation of scientific data and countering misinformation. Every piece of content is developed with the aim of translating the complexity of research into understandable, useful and applicable information, while keeping intact the principles of accuracy, transparency and scientific independence.

Free from political, industrial and commercial influence, the journal stands as an authoritative and independent editorial space, dedicated to promoting scientific culture, professional development and the growth of health awareness among the public.

2. ANALYZED STUDY

The question addressed by the publication is which criteria should be used in clinical practice to recognize and classify diabetes. The implicit hypothesis is that shared, updated, and correctly applied criteria allow for more consistent diagnoses and a better assessment of the quality of care.The relevance to the book chapter is precise. “The Choice to Live in Health or Illness” by Dr. A. Colonnese and R. Panzironi uses the document to frame fasting plasma glycemia—that is, the concentration of glucose in the blood after at least eight hours without food intake—as a diagnostic criterion, and to remind us that an abnormal result without obvious symptoms normally requires confirmation.As a guideline, the publication can establish recommendations and summarize the interpretation of available evidence. However, it cannot, on its own, demonstrate that a single measurement fully describes a person's glucose metabolism, nor can it establish the cause of an elevated value in a specific individual.

3. MATERIALS AND METHODS OF THE ORIGINAL STUDY

The available material consists exclusively of the abstract. From this, it appears that the document is part of the ADA’s “Standards of Care in Diabetes” and is updated annually, or more frequently when necessary, by an interdisciplinary committee of experts.This is not a clinical study with enrolled participants, a control group, an intervention, follow-up, or specific clinical endpoints. The population size, inclusion and exclusion criteria, data collection period, laboratory techniques, statistical analyses, and quantitative values are not reported in the available material.The abstract refers to a separate introduction and methodology section for the description of the evidence grading system. Since this full text is not available in the input, the detailed process of searching, selecting, and grading the evidence cannot be described beyond this information.

4. RESULTS

The abstract does not present experimental results, statistical comparisons, measures of diagnostic accuracy, or data collected from a cohort. Instead, it reports that the ADA standards are intended to provide components of care, general treatment goals, guidelines, and tools to evaluate the quality of care.The thresholds reported in the book's paragraph—a value below 100 mg/dL as normal, a value between 100 and 125 mg/dL as impaired fasting glycemia, and a value equal to or greater than 126 mg/dL as compatible with diabetes—are not reported in the available abstract. Therefore, it is not possible to attribute these quantitative details directly to the analyzed textual material.The subsequent independent edition of the ADA standards, available in full, maintains the use of fasting glycemia, glycated hemoglobin, and the oral glucose tolerance test among diagnostic tools; it also recommends confirmation in the absence of unequivocal hyperglycemia, i.e., a glucose increase clearly associated with acute clinical manifestations [1]. This confirms the clinical significance of the passage referenced in the book, while not replacing direct verification of the full text of the 2026 edition.

5. INTERPRETATION

For a non-technical reader, the essential message is that fasting glycemia is a useful and standardized measurement, but it is not a complete snapshot of all glucose fluctuations throughout the day. A high value may signal diabetes; however, when there are no clear symptoms, repeating the test or using a different test reduces the risk that an occasional variation automatically becomes a diagnosis.The segment of the book's narrative supported by the publication subject to the Evidence Review is therefore clinical-diagnostic: fasting glycemia comparison with conventional thresholds possible confirmation of the abnormal result. The document does not demonstrate that fasting glycemia is the best test for every person, nor that a normal value excludes any alteration in glucose metabolism.Independent research makes this distinction more concrete. In a meta-analysis of diagnostic accuracy, fasting glycemia equal to or greater than 126 mg/dL showed a sensitivity of 49%, meaning it identified about half of the cases defined by the reference test, but a specificity of 98%, meaning it correctly classified the vast majority of people without diabetes as non-diabetic according to that reference [2]. In other words, an elevated value is informative, while a single non-elevated value is not

always sufficient to rule out an alteration detected with other tools.

6. INDEPENDENT CONFIRMATORY EVIDENCE

A previous and independent edition of the ADA standards directly confirms the clinical core of the book's statement. It indicates that fasting glycemia, glycemia after an oral glucose tolerance test, and glycated hemoglobin are all appropriate tools for screening and diagnosis. It further specifies that, in the absence of unequivocal hyperglycemia, the diagnosis requires confirmation. This is a guideline, therefore not a primary experimental trial, but it is a direct and relevant confirmation of the diagnostic rule described [1].The network meta-analysis by Duong and colleagues pooled 73 studies comparing fasting glycemia, glycated hemoglobin, and their combination with glycemia measured two hours after an oral glucose load. Fasting glycemia of at least 126 mg/dL had an aggregate sensitivity of 0.49, with a 95% credible interval from 0.43 to 0.55, and a specificity of 0.98, with a credible interval from 0.97 to 0.98. This confirms the passage in the book stating that fasting glycemia is useful as a simple and reliable test to confirm many cases, but it does not exhaust the metabolic assessment. The limitation is that the oral test was used as a reference and the included populations were heterogeneous [2].For the part of the paragraph dedicated to glycated hemoglobin, the systematic review by English and colleagues provides independent confirmation that the result must be interpreted within the clinical context. In 12 studies, iron deficiency, with or without anemia, was associated with higher glycated hemoglobin values without a concomitant increase in glucose indices. Conversely, some anemias not due to iron deficiency could be associated with lower values. The data supports the book's warning: when red blood cell turnover changes, glycated hemoglobin may not accurately reflect actual glucose exposure. The certainty remains moderate because the available evidence was limited and non-uniform [3].

7. CONFLICTING EVIDENCE

No directly conflicting evidence sufficiently relevant to clinical thresholds and the need to confirm an abnormal result in the absence of symptoms has been identified; this does not prove the absence of contradictory findings.However, there is significant contextual evidence that limits the notion of a universal superiority of fasting glycemia. Wang and colleagues analyzed five independent cohorts, totaling 11,968 participants, and observed that blood glucose one hour after an oral glucose tolerance test discriminated diabetes better than the combination of fasting glycemia and glycated hemoglobin. In the pooled analysis, the area under the curve was 0.97 versus 0.85; values closer to 1 indicate a better ability to distinguish cases. This evidence does not challenge fasting glycemia thresholds, but it suggests that other tests may identify alterations earlier or with greater sensitivity in certain contexts [4].

8. QUADRO COMPARATIVO E SINTESI DELLE EVIDENZE

The table distinguishes the document under review from the independent publications used to evaluate the diagnostic approach in the book.

Quadro comparativo

Reference	Study type	Population or model	Main result	Direction of evidence	Strength of evidence
Original study	Clinical guideline; only abstract available in the material	Not applicable	Describes the function of ADA standards, but the abstract does not report thresholds, clinical data, or quantitative analyses	biologically consistent evidence	moderate
[1]	Clinical guideline	ADA recommendations based on evidence assessment	Confirms multiple glycemic criteria and diagnostic confirmation in the absence of unequivocal hyperglycemia	direct confirmation	moderate
[2]	Systematic review and network meta-analysis	73 diagnostic accuracy studies	FPG ≥126 mg/dL: sensitivity 0.49 and specificity 0.98 compared to OGTT	direct confirmation	moderate
[3]	Systematic review	12 studies in adults without known diabetes	Iron deficiency associated with spurious increase in HbA1c; some other anemias with reduction	indirect confirmation	moderate

9. SINTESI EDITORIALE E CONCLUSIONI

CONCLUSIONS

The publication analyzed is relevant to the section because it serves as a regulatory reference for the diagnostic use of fasting glycemia and for confirming abnormal results when no clear symptoms are present. The available material, being limited to the abstract, does not allow for direct verification of all the thresholds reported in the book.Independent evidence moderately supports the narrative: fasting glycemia is particularly useful due to its high specificity, but it does not identify all cases detectable through other tests. Glycated hemoglobin offers complementary information but requires cautious interpretation in conditions that alter red blood cell turnover. A complete clinical assessment remains based on the reasoned integration of tests, symptoms, and individual context.

Aggiornato al 17/11/2026. Questo contenuto riflette una sintesi divulgativa delle evidenze scientifiche al momento della pubblicazione e non sostituisce il parere medico.

10. TRANSPARENCY AND SCIENTIFIC RESPONSIBILITY

Artificial Intelligence was used solely as a tool for editorial and documentary support. All content, interpretations, bibliographic citations and conclusions have been verified, reviewed and approved by the author, who assumes full scientific responsibility for them.

The manuscript was also subjected to independent peer review prior to publication.

To ensure the greatest transparency, the complete history of

the article, including the dates of submission, revision, acceptance and publication, as well as information on the peer review process, is available on the dedicated Article History page.

11. RIFERIMENTI BIBLIOGRAFICI

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