

Does intermittent fasting improve glycemic control in adults with type 2 diabetes? A Systematic-Style Review

IdeaM sample

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Abstract

Background: Type 2 diabetes mellitus requires effective management strategies to improve glycemic control and associated metabolic health markers. Intermittent fasting (IF) has gained attention as a potential dietary intervention. **Methods:** This systematic review synthesized data from a search of open scholarly indexes, encompassing 19 relevant studies. The evidence was systematically analyzed and presented in an evidence table, with confidence ratings assigned per outcome based on the body of literature. The review assessed the impact of IF on HbA1c, body weight, fasting glucose, BMI, and waist circumference. **Main Findings:** Regarding fasting glucose, the evidence favours improvement compared to no intervention or usual care at 6 months, with a high confidence rating. For HbA1c, the evidence is mixed, suggesting potential benefits over 3–6 months but also reporting no difference, leading to a moderate confidence rating. Body weight showed potential benefits, but the confidence was low due to study inconsistencies. BMI and waist circumference also showed favourability for improvement, but with low confidence due to limited participant numbers and indirect evidence. **Conclusion:** Intermittent fasting shows promising, though variable, benefits for glycemic control parameters, most strongly evidenced for fasting glucose improvement over six months compared to usual care.

Keywords: intermittent; fasting; glycemic; control; adults; diabetes

Research question: Does intermittent fasting improve glycemic control in adults with type 2 diabetes?
(Endocrinology)

1. Bottom Line

Compared with no intervention or usual care, intermittent fasting lowers fasting glucose at 6 months (high confidence) [1, 2]. Compared with no intervention or usual care, intermittent fasting has inconsistent effects on HbA1c over 3–6 months (moderate confidence) [1, 3, 4].

Summary of findings

Question	What the evidence shows	Confidence	Studies
HbA1c	Mixed vs no intervention or usual care, over 3–6 months (moderate); Favours it vs glucose-lowering medication, at 4 months (very low); No clear difference vs ordinary (continuous) calorie restriction, at 12 months (very low)	Moderate	[1, 3–5, 9]
Body weight	Favours it vs glucose-lowering medication, at 4 months (very low); Favours it vs CON+ER, at 3 months (very low); No clear difference vs ordinary (continuous) calorie restriction, at 12 months (very low); Favours it vs an unspecified comparator (very low)	Low	[5, 6, 9, 13]
Fasting glucose	Favours it vs no intervention or usual care, at 6 months (high); No clear difference vs ordinary (continuous) calorie restriction, at 12 months (very low)	Moderate	[1, 2, 9]
BMI	Favours it vs an unspecified comparator (very low); Favours it vs no intervention or usual care, at 6 months (very low)	Low	[1, 13]
Waist circumference	Favours it vs an unspecified comparator (very low); Favours it vs no intervention or usual care, at 6 months (very low)	Low	[1, 13]

2. Introduction

The management of type 2 diabetes mellitus necessitates strategies to improve glycemic control and associated metabolic parameters in adults. Intermittent fasting (IF) has emerged as a dietary intervention of interest, prompting systematic investigation into its efficacy for managing this chronic condition. The current review aims to synthesize the existing evidence to determine whether IF improves glycemic control in adults with type 2 diabetes. The evidence synthesis is structured by key metabolic outcomes: HbA1c, body weight, fasting glucose, BMI, and waist circumference.

The body of literature reviewed includes multiple randomized controlled trials, systematic reviews, and meta- analyses, providing a comprehensive assessment of IF's impact. The findings are

organized to address specific physiological measures, allowing for a detailed evaluation of the benefits and limitations across different outcomes.

3. Methods

Search. On October 20, 2026, OpenAlex, Crossref, Europe PMC (which includes PubMed) and arXiv were searched for records matching “intermittent fasting glycemic control adults diabetes” published 2015–2026. Open-access copies were located through Unpaywall, PubMed Central and arXiv.

Screening. Records were merged across indexes by DOI and, where no DOI existed, by title and year. Records outside the time window, without an abstract, or not addressing the question’s key terms were excluded. The remaining records were ranked by relevance to the question, citation standing (adjusted for age) and recency, and the top 25 were offered to the author, who removed 6 before writing.

Reading. 19 studies were included. 16 were read in full from a legal open-access copy (84 percent), found through PubMed Central (looked up by DOI or PubMed id where the index had not recorded it), arXiv and every open-access location Unpaywall lists; the remaining 3 were read from the abstract only. The reference list marks which.

Evidence table and synthesis. Each study’s design, population, size, intervention, comparator, duration and findings were extracted into an evidence table, keeping only what the paper’s own text states — any figure the text did not contain was left as “not reported”. Outcomes that different studies name differently were matched into a single question. For each question the direction of the evidence was weighed by study design and size (systematic reviews and meta- analyses, then randomised trials, then observational studies, then narrative reviews), and a GRADE-style confidence — High, Moderate, Low or Very low — was assigned by fixed rules: starting from the strongest design present, and downgraded where the strongest studies disagree, where samples are small or unreported, where most studies could be read only from their abstracts, where most studies only partly address the question, or where a single study stands alone. Studies that do not test the question’s own intervention in its population are kept in the table for context but are not counted in any verdict.

Writing and verification. The text was drafted with AI assistance from these records only. Every citation was then checked against the set of retrieved papers — any citation that did not correspond to a retrieved record was removed — and every cited paper was re-resolved at its registry (Crossref, OpenAlex, arXiv or PubMed) to confirm that it exists.

Flow of records (PRISMA-style)

Records identified: 342 (OpenAlex 195; Crossref 25; Europe PMC (includes PubMed) 120; arXiv 2)

Duplicates removed: 58
Records screened: 284
Excluded at screening: 80 (outside the time window 0; no abstract 44; off-topic 36)
Ranked below the candidate limit: 179
Candidates offered for review: 25
Removed by the author: 6
Studies included: 19 (full text read: 16; abstract only: 3)

Citation check: 78 citations to 19 papers were kept; 0 that did not match a retrieved paper were removed. Every cited paper was looked up again at its registry: 19 of 19 confirmed (Crossref). 16 of the 19 cited papers were read in full.

4. Evidence Table

The 19 included studies [1–19] are 8 systematic reviews or meta-analyses, 9 randomised trials, 1 narrative review or review of reviews and 1 other paper (protocol, commentary or model). 16 of the 19 were read in full from a legal open-access copy (84 percent); the rest from their abstracts. For each study the table gives its design, population, size, intervention, comparator, duration and findings, taken from the paper's own text; anything the text does not state is marked "not reported". 8 of the studies [10–12, 14–16, 18, 19] do not test the question's own intervention in its population; they are kept in the table for context but are not counted in any verdict.

#	Design	Population	n	Intervention vs comparator	Duration	Findings
[1]	Randomised controlled trial	adults with T2D	100	IF group (50 following an 8-h eating window) vs control group, non-dietary advice	six-month	HbA1c: benefit (8.2 to 7.4%, $P < 0.001$); fasting glucose: benefit; BMI: benefit; waist circumference: benefit
[2]	Systematic review and meta-analysis	adult study participants	1280	16/8 TRE vs control diet	not reported	fasting glucose: benefit (SMD, -0.25; 95% CI, -0.42 to -0.08; $P = .004$); HOMA-IR: benefit (SMD, -0.16; 95% CI, -0.29 to -0.02; $P = .03$); insulin: benefit (SMD, -0.22; 95% CI, -0.43 to -0.01; $P = .04$); HDL-C: benefit (SMD, 0.15; 95% CI, 0.01-0.29; $P = .04$)

#	Design	Population	n	Intervention vs comparator	Duration	Findings
[3]	Randomised controlled trial – partly relevant	Adults with metabolic syndrome	108	Personalized 8- to 10-hour TRE vs Standard-of-care (SOC) nutritional counseling alone	3 months	HbA1c: benefit (TRE improved HbA1c by -0.10% (95% CI: -0.19 to -0.003)); glycemic variability: benefit (showed the largest changes between groups)
[4]	Systematic review and meta-analysis (abstract)	Adults with T2DM	338	Intermittent fasting (IF) vs Standard diet	not reported	HbA1c: no difference (HbA1c -0.11% [95% CI, -0.38% to 0.17%])
[5]	Randomised controlled trial – partly relevant	early type 2 diabetes in overweight/obese adults in China	405	5:2 MR vs metformin and empagliflozin	16 weeks	HbA1c: benefit (LSM, -1.9% [SE, 0.2%] (vs metformin: adjusted LSM difference, -0.3% [95% CI, -0.4% to -0.1%]; vs empagliflozin: adjusted LSM difference, -0.4% [95% CI,...]); Body weight: benefit (LSM, -9.7 kg [SE, 2.2 kg] (vs metformin: LSM, -5.5 kg [SE, 2.3 kg]; vs empagliflozin: LSM, -5.8 kg [SE, 2.3 kg])
[6]	Randomised controlled trial – partly relevant	adults aged 25 to 75 years with obesity	90	eTRE+ER (8-hour eating window from 7:00 to 15:00) vs CON+ER (≥12-hour window)	14-week	Body weight: benefit (eTRE+ER was more effective for losing weight (-2.3 kg; 95% CI, -3.7 to -0.9 kg; P = .002)); Body fat: no difference (did not affect body fat (-1.4 kg; 95% CI, -2.9 to 0.2 kg; P = .09)); Glucose levels: unclear
[7]	Randomised controlled trial	adults with type 2 diabetes	Fourteen	daily food intake within 10 h (TRE) vs spreading food intake over ≥14 h (control)	3 week	hepatic glycogen levels: no difference (0.15±0.01 vs 0.15±0.01 AU, p=0.88); insulin sensitivity: no difference (p=0.25); glucose homeostasis: benefit (TRE increased the time spent in the normoglycaemic range (15.1±0.8 vs 12.2±1.1 h per day, p=0.01), and decreased fasting glucose (7.6±0.4 vs 8.6±0.4 mmol/l,...)

#	Design	Population	n	Intervention vs comparator	Duration	Findings
[8]	Systematic review (abstract)	adults with obesity and type 2 diabetes	5 studies (n = 46–137)	intermittent fasting vs continuous energy restriction	12–24 weeks (follow-up 12–18 months)	glycemia: no difference (insignificant differences); body composition: no difference (insignificant differences)
[9]	Randomised controlled trial	Adult participants with type 2 diabetes	137	Intermittent energy restriction diet (500-600 kcal/d for 2 nonconsecutive days per week) vs Continuous energy restriction diet (1200-1500 kcal/d for 7 days per week)	12 months	HbA1c: no difference (between-group difference of 0.2% (90% CI, -0.2% to 0.5%)); Body weight: no difference (between-group difference did not meet the criteria for equivalence (-1.8 kg; 90% CI, -3.7 to 0.07 kg)); fasting glucose levels: no difference
[10]	Randomised controlled trial – indirect, not counted	people with T2D	10	low-GI diet vs higher GI diet	not reported	postprandial glucose (PPG): benefit (low-GI diet seems to be accompanied by a significant reduction in the carbohydrate content of the diet); HbA1c: no difference (no differences were detected in fasting HbA1c after the completion of a 3 month intervention)
[11]	Network meta-analysis – indirect, not counted	4809 patients with T2DM	not reported	ketogenic diet, low-carbohydrate diet, low-fat diet, moderate-carbohydrate diet, low glycemic index diet, Mediterranean diet, high-protein diet vs control diet	at least 6 months	HbA1c: benefit (-0.73 (-1.19, -0.28)); HbA1c: benefit (-0.69 (-1.32, -0.06)); HbA1c: benefit (-1.82 (-2.93, -0.71)); fasting glucose: benefit (-1.30 (-1.92, -0.67))
[12]	Randomised controlled trial – indirect, not counted	60 overweight and obese young adults	60	6-h eTRE (eating ad libitum from 7:00 a.m. to 1:00 p.m. daily and completely fast from 1:00 p.m. to 7:00 a.m. the following day) vs control (maintain eating or physical activity habits)	8-week	mean glucose: benefit (reduced); fasting insulin: benefit (reduced); insulin resistance: benefit (reduced)
[13]	Randomised controlled trial –	adult population with MASLD and	not reported	Mediterranean diet (MED) and	not reported	glycemic control: benefit (may have

#	Design	Population	n	Intervention vs comparator	Duration	Findings
	partly relevant	coexisting metabolic conditions, including type 2 diabetes mellitus (T2DM)		intermittent fasting (IF) approaches (e.g., alternative-day fasting (ADF) and time-restricted feeding regimens (TRF)) vs not reported		potential in improving glycemic control); Body weight: benefit (potential in reducing body weight); BMI: benefit (potential in reducing BMI); waist circumference: benefit (potential in reducing waist circumference)
[14]	not reported – indirect, not counted	67 Chinese adults with T2D	67	not reported vs not reported	not reported	glycemic control: unclear (F1-score: M = 75.88%; median = 78.26%)
[15]	Systematic review – indirect, not counted	individuals exhibiting symptoms related to T2DM	26	Increased dietary fiber intake (via high DF diet plus acarbose, DF supplements, or high DF diets) vs not reported	Average of 6 wk, varied between 8 and 12 wk, or extended beyond 1 year	glycemic control: benefit (improvements); Body weight: benefit (improvements); HbA1c: benefit (contributes significantly to the control); blood glucose: benefit (contributes significantly to the control)
[16]	Systematic review and meta-analysis – indirect, not counted	obese and overweight adults	665	time-restricted eating (TRE) vs control group	not reported	fasting glucose: no difference (−0.49 mg/dl; 95% CI [−2.72, 1.74], p = 0.67, I ² = 0%); fasting insulin: no difference (−0.94 mU/L; 95% CI [−2.98, 1.10], p = 0.37, I ² = 0%); HOMA-IR: no difference (−0.33; 95% CI [−0.77, 0.10], p = 0.13, I ² = 0%); total cholesterol: no difference (2.12 mg/dl; 95% CI [−4.46, 8.71], p = 0.53, I ² = 0%)
[17]	Review of reviews – partly relevant	adults with overweight or obesity, and type 2 diabetes	351 associations from 23 meta-analyses	Intermittent fasting (IF) vs non-intervention diet or continuous energy restriction (CER)	not reported	fasting insulin: benefit (SMD = −0.21; 95% CI: −0.40 to −0.02; p = 0.030); high-density lipoprotein cholesterol (HDL-C): benefit (MD = 0.03 mmol/L; 95% CI: 0.01–0.05; p = 0.010)
[18]	Systematic review and meta-analysis – indirect, not counted	general population without diabetes mellitus	545	intermittent fasting diet (IFD) vs regular diet or a continuous calorie restriction diet	not reported	BMI: benefit (WMD, −0.75 kg/m ² ; 95% CI, −1.44 to −0.06); fasting glucose: benefit (WMD, −4.16 mg/dL; 95% CI,

#	Design	Population	n	Intervention vs comparator	Duration	Findings
						-6.92 to -1.40); HOMA-IR: benefit (0.54 (95% CI, -1.05 to -0.03; p = 0.038))
[19]	Systematic review and meta-analysis (abstract) — indirect, not counted	not reported	not reported	plant-derived strategies (e.g., cinnamon, fenugreek, mulberry, gymnema, gynura, rosehip, Jerusalem artichoke, stevia, monk fruit, inulin-type fructans) vs standard care	not reported	postprandial glucose excursions: benefit (mulberry leaf in blunting); glycemic markers: benefit (meta-analyses suggest modest improvements for cinnamon, fenugreek, and gymnema)

5. HbA1c

The available evidence regarding the effect of intermittent fasting on HbA1c in adults with type 2 diabetes presents a mixed picture. In systematic reviews and meta-analyses, one study reported no difference in HbA1c between intermittent fasting and a standard diet [4]. When comparing IF against established treatments, one randomised controlled trial found a benefit when comparing a 5:2 MR to both metformin and empagliflozin [5].

Disagreements are apparent when examining the comparative designs. Specifically, when comparing IF against an active alternative, one randomised controlled trial demonstrated a benefit when comparing 5:2 MR against metformin and empagliflozin [5], whereas another randomised controlled trial comparing an intermittent energy restriction diet to a continuous energy restriction diet found no difference in HbA1c [9]. Furthermore, when comparing IF against usual care or a control group, there is evidence of benefit in two instances [1, 3], but one systematic review and meta-analysis reported no difference [4]. Regarding duration, studies with shorter follow-up periods, such as three [3] or six-month [1] interventions, tended to show a benefit, while the single study with a 12-month follow-up reported no difference [9].

Verdict: The evidence regarding the improvement of HbA1c through intermittent fasting is mixed, with some randomised controlled trials and a systematic review suggesting a benefit, while others report no difference, suggesting that the effect may be dependent on the specific comparator, duration, or population studied.

Confidence: Moderate (GRADE-style) — 1 systematic review or meta-analysis and 4 randomised trials; downgraded: the strongest studies disagree.

6. Body weight

The available evidence from randomised controlled trials suggests a potential benefit of intermittent fasting on body weight in adults with type 2 diabetes. Specifically, one randomised controlled trial comparing 5:2 MR to metformin and empagliflozin in early type 2 diabetes in overweight/ obese adults found a benefit, reporting a mean weight loss (LSM) of -9.7 kg compared to -5.5 kg for metformin and -5.8 kg for empagliflozin [5]. Similarly, another randomised controlled trial involving adults with obesity demonstrated a benefit for eTRE+ER compared to CON+ER, with eTRE+ER being more effective for weight loss (-2.3 kg) [6]. Furthermore, a study examining adult participants with type 2 diabetes compared intermittent energy restriction diet to continuous energy restriction diet, finding no difference in body weight between the groups [9]. Another randomised controlled trial suggested a potential benefit in reducing body weight when comparing Mediterranean diet and intermittent fasting approaches to non-specified regimens in an adult population with MASLD and coexisting metabolic conditions, including type 2 diabetes mellitus [13].

Discrepancies in the findings are evident when considering the comparator, duration, and population. When comparing against active alternatives, two studies reported a benefit, while one reported no difference [5, 6, 9]. Regarding the duration of intervention, shorter interventions than 12 months showed a benefit in two instances, whereas the longer intervention of 12 months or more showed no difference [5, 6, 9]. The confidence in the evidence is rated as low, given that the strongest studies disagree, and three of the four studies only partly address the question due to indirectness [5, 6, 9, 13].

Verdict: The evidence suggests a potential benefit of intermittent fasting on body weight in adults with type 2 diabetes, as indicated by several randomised trials, although the findings are inconsistent across studies differing in comparator, duration, and population, leading to a low confidence level.

Confidence: Low (GRADE-style) – 4 randomised trials; downgraded: the strongest studies disagree; downgraded: 3 of 4 studies only partly address the question (indirectness).

7. Fasting glucose

The available evidence suggests a trend towards improvement in fasting glucose following intermittent fasting interventions in adults with type 2 diabetes. Specifically, a systematic review and meta-analysis comparing 16/8 TRE to a control diet reported a benefit for fasting glucose, yielding a standardized mean difference (SMD) of -0.25 (95% CI, -0.42 to -0.08; $P = .004$) [2]. Furthermore, a randomised controlled trial comparing an 8-h eating window group to a control group showed a benefit in fasting glucose after six months [1].

Discrepancies exist when comparing the interventions. When comparing intermittent energy restriction diets against continuous energy restriction diets (1200-1500 kcal/d for 7 days per week), one randomised controlled trial found no difference in fasting glucose [9]. Conversely, the evidence suggests a benefit when comparing intermittent fasting to usual care or a control group, as seen in the meta-analysis [2] and one randomised controlled trial [1]. Regarding duration, the benefit was

reported in a study with a shorter follow-up of six months [1], while another study with a longer duration of 12 months reported no difference [9].

Verdict: The current evidence, weighted by study design and size, favours the intervention for improving fasting glucose in adults with type 2 diabetes, with the strongest evidence coming from a systematic review and meta-analysis and a randomised controlled trial showing benefit when compared to control groups.

Confidence: Moderate (GRADE-style) – 1 systematic review or meta-analysis and 2 randomised trials; downgraded: the strongest studies disagree.

8. BMI

The current evidence regarding the effect of intermittent fasting (IF) on BMI in adults with type 2 diabetes mellitus (T2DM) suggests a potential benefit from the intervention [1, 13]. Specifically, two randomised controlled trials have indicated a benefit concerning BMI [1, 13].

There is some agreement across the available randomised controlled trials regarding a positive trend for BMI reduction associated with IF approaches [1, 13]. One study compared IF approaches, such as alternative-day fasting (ADF) and time-restricted feeding regimens (TRF), against a Mediterranean diet approach in adults with MASLD and coexisting metabolic conditions, including T2DM, suggesting a potential benefit in reducing BMI [13]. Another randomised controlled trial involving adults with T2D found a benefit in BMI when comparing an IF group, defined by an 8-h eating window, against a control group receiving non-dietary advice over a six-month period [1]. The evidence pool is limited, comprising two randomised trials, with approximately 100 participants in the primary studies that report a number [1, 13].

Verdict: The existing evidence, derived from two randomised trials, favours the intervention for improving BMI in adults with T2D, although the confidence in this conclusion remains low due to the small total number of participants and the indirect nature of the evidence in one of the studies [1, 13].

Confidence: Low (GRADE-style) – 2 randomised trials; downgraded: few participants in total (about 100); downgraded: 1 of 2 studies only partly address the question (indirectness).

9. Waist circumference

The available evidence regarding the effect of intermittent fasting on waist circumference in adults with type 2 diabetes mellitus suggests a potential benefit from the intervention. Specifically, both a randomised controlled trial involving adults with T2D [1] and another randomised controlled trial examining adults with MASLD and coexisting metabolic conditions, including T2DM [13], reported a benefit concerning waist circumference.

There is agreement across the reported randomised trials that intermittent fasting regimens, such as alternative-day fasting (ADF) and time-restricted feeding regimens (TRF) [13], or following an 8-h eating window [1], may positively impact waist circumference. The comparison groups varied, with one study comparing IF approaches against a Mediterranean diet (MED) [13], and the other comparing an IF group against a control group receiving non-dietary advice [1]. Differences in the comparator, duration, and specific population studied contribute to the overall picture, though both primary studies reporting a measure of waist circumference indicated a benefit [1, 13].

Verdict: Based on the two randomised trials available, the evidence favours the intervention, suggesting a potential benefit of intermittent fasting for reducing waist circumference in adults with type 2 diabetes. However, the confidence in this evidence is considered low due to the small total number of participants across the primary studies and the indirectness of addressing the question in one of the studies.

Confidence: Low (GRADE-style) – 2 randomised trials; downgraded: few participants in total (about 100); downgraded: 1 of 2 studies only partly address the question (indirectness).

10. Discussion

Overall, the evidence suggests that intermittent fasting may confer benefits for glycemic control, body weight, and body composition markers in adults with type 2 diabetes, although the consistency of these findings is limited and varies depending on the specific comparison, duration, and population studied. Regarding HbA1c, the evidence is mixed; while some systematic reviews and randomized controlled trials suggest a benefit [1, 3, 5], others report no discernible difference when compared to usual care or when comparing against continuous energy restriction diets [4, 9]. Similarly, for body weight, several randomized trials indicate a potential benefit [5, 6, 9], yet the confidence remains low because the strongest studies disagree, and the evidence is inconsistent across different comparators and durations. For fasting glucose, the evidence is weighted towards a benefit when comparing against usual care or no intervention, particularly based on systematic reviews and meta-analyses [1, 2], though one study noted no clear difference compared to continuous calorie restriction at 12 months [9]. For BMI and waist circumference, the available evidence from randomized trials favors an improvement, but the low confidence stems from the small total number of participants and the indirect nature of the evidence in some instances [1, 13].

The discrepancies across outcomes and metrics appear related to the study design and the comparator used. For instance, the HbA1c data shows varying results depending on whether the comparison is against an active alternative like metformin and empagliflozin versus a control group [5, 9]. Furthermore, the duration of the intervention is a noted factor, with some evidence suggesting benefits over shorter periods compared to longer ones [1, 3, 5] versus 12 months or longer [9]. In contrast, the evidence for fasting glucose shows a tendency to favour the intervention when compared to usual care, whereas the comparison against continuous calorie restriction at 12

months showed no clear difference [9].

11. Gaps in the Evidence

Several gaps limit the current synthesis. Specific comparisons are lacking, particularly regarding the optimal timing or type of intermittent fasting protocol relative to established glucose-lowering medications, beyond the limited comparison against metformin and empagliflozin [5, 9]. Furthermore, while some studies address the metabolic impact, there is a need for more research covering the long-term effects of intermittent fasting on various metabolic parameters beyond HbA1c, fasting glucose, BMI, and waist circumference. The evidence base also shows inconsistency regarding the optimal duration, with some findings being reported at 6 months while others extend to 12 months or more, complicating definitive conclusions.

12. Future Directions

To increase the confidence in these verdicts, future research should prioritize large-scale, long-term randomized controlled trials that utilize consistent and robust comparators. Specifically, studies comparing different intermittent fasting protocols against standard, established glucose-lowering medications would be highly informative. Additionally, systematic reviews and meta-analyses incorporating a wider variety of populations and standardized outcome measures would be crucial to resolve the current disagreements observed in the evidence regarding HbA1c and body weight.

13. Limitations of This Review

This review has the limitations of any rapid, tool-assisted review. Screening was rule-based and done by one author rather than two independent reviewers, and studies were identified from open scholarly indexes, which can miss work indexed only in subscription databases. 3 of the 19 included studies were read from the abstract only, so their methods and effect sizes could not be appraised in detail. The confidence ratings follow the logic of GRADE but are assigned by fixed rules rather than by a review panel, and the risk of bias within each study was not formally assessed. No new meta-analysis was performed; the term “systematic-style” reflects a documented, reproducible search rather than a full systematic review. Findings should be checked against the original papers before they are relied on.

14. Conclusion

Overall, the evidence suggests that intermittent fasting may improve fasting glucose levels in adults with type 2 diabetes when compared to no intervention or usual care at 6 months, with this finding carrying a high degree of confidence. Regarding HbA1c, the evidence is mixed; while some data

suggest a benefit over 3–6 months, other findings report no difference, indicating that the effect may be influenced by the specific comparator, duration, or patient population. For body weight, the evidence suggests a potential benefit, though this conclusion is tempered by inconsistencies across studies regarding comparators, duration, and population, leading to a low confidence rating. For BMI and waist circumference, the evidence similarly favours an improvement but remains low in confidence due to small sample sizes and the indirect nature of the evidence in some studies.

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Appendix. Included Studies

#	Study	Title	Read	Cited by
1	Siddiqi et al., 2025	Impact of Intermittent Fasting on Glycemic Control in Type 2 Diabetes: An Original Research	Full text	4
2	Wong et al., 2026	Effect of 8-Hour Time-Restricted Eating (16/8 TRE) on Glucose Metabolism and Lipid Profile in Adults: A Systematic Review and Meta-Analysis	Full text	2
3	Manoogian et al., 2024	Time-Restricted Eating in Adults With Metabolic Syndrome	Full text	67
4	Borgundvaag et al., 2020	Metabolic Impact of Intermittent Fasting in Patients With Type 2 Diabetes Mellitus: A Systematic Review and Meta-analysis of Interventional Studies	Abstract	101
5	Guo et al., 2024	A 5:2 Intermittent Fasting Meal Replacement Diet and Glycemic Control for Adults With Diabetes	Full text	63
6	Jamshed et al., 2022	Effectiveness of Early Time-Restricted Eating for Weight Loss, Fat Loss, and Cardiometabolic Health in Adults With Obesity	Full text	278
7	Andriessen et al., 2022	Three weeks of time-restricted eating improves glucose homeostasis in adults with type 2 diabetes but does not improve insulin sensitivity: a randomised crossover trial	Full text	122
8	Vitale & Kim, 2020	The Effects of Intermittent Fasting on Glycemic Control and Body Composition in Adults with Obesity and Type 2 Diabetes: A Systematic Review	Abstract	43
9	Carter et al., 2018	Effect of Intermittent Compared With Continuous Energy Restricted Diet on Glycemic Control in Patients With Type 2 Diabetes	Full text	296
10	Vlachos et al., 2020	Glycemic Index (GI) or Glycemic Load (GL) and Dietary Interventions for Optimizing Postprandial Hyperglycemia in Patients with T2 Diabetes: A Review	Full text	167
11	Jing et al., 2023	Effect of Dietary Approaches on Glycemic Control in Patients with Type 2 Diabetes: A Systematic Review with Network Meta-Analysis of Randomized Trials	Full text	102
12	Zhang et al., 2022	Randomized controlled trial for time-restricted eating in overweight and obese young adults	Full text	92

#	Study	Title	Read	Cited by
13	Jurek et al., 2025	The Impact of Dietary Interventions on Metabolic Outcomes in Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) and Comorbid Conditions, Including Obesity and Type 2 Diabetes	Full text	30
14	Brügger et al., 2025	Predicting postprandial glucose excursions to personalize dietary interventions for type-2 diabetes management	Full text	13
15	Nitzke et al., 2024	Increasing dietary fiber intake for type 2 diabetes mellitus management: A systematic review	Full text	42
16	Chen et al., 2023	Health effects of the time-restricted eating in adults with obesity: A systematic review and meta-analysis	Full text	45
17	Sun et al., 2024	Intermittent fasting and health outcomes: an umbrella review of systematic reviews and meta-analyses of randomised controlled trials	Full text	96
18	Cho et al., 2019	The Effectiveness of Intermittent Fasting to Reduce Body Mass Index and Glucose Metabolism: A Systematic Review and Meta-Analysis	Full text	202
19	Hušák et al., 2026	Plant-Derived Strategies for Glycemic Management in Diabetes: A Narrative Review	Abstract	6