

# Diabetes Deprescribing in Older Adults

Rehan Haider <sup>1\*</sup>, Hina Abbas <sup>2</sup>, Mehak Shaikh <sup>3</sup>

<sup>1</sup>Riggs Pharmaceuticals Department of Pharmacy, University of Karachi, Pakistan.

<sup>2</sup>Assistant Professor Department of Pathology Dow University of Health Sciences.

<sup>3</sup>Assistant Prof Health sciences Ziauddin University Sukkur Pakistan.

**\*Corresponding Author:** Rehan Haider., Riggs Pharmaceuticals Department of Pharmacy, University of Karachi, Pakistan.

**Received Date:** July 31, 2025 | **Accepted Date:** October 10, 2025 | **Published Date:** November 18, 2025

**Citation:** Rehan Haider, Hina Abbas, Mehak Shaikh, (2025), Diabetes Deprescribing in Older Adults, *International Journal of Clinical Case Reports and Reviews*, 31(4); DOI:10.31579/2690-4861/935

**Copyright:** © 2025, Rehan Haider. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## Abstract:

Managing type 2 diabetes in older women requires a nuanced approach, considering age-related physiological changes, multimorbidity, and variable life expectancy. In this population, the benefits of aggressive glycemic control are often outweighed by associated risks, especially hypoglycemia and limited growth potential. Deprescribing—the intentional process of reducing or discontinuing medications that may no longer be necessary—has emerged as an important strategy in optimizing the care of older adults with diabetes. Older adults often experience polypharmacy, which increases the risk of drug interactions, side effects, and overall medication burden. As functional decline and comorbidities progress, stringent glycemic goals may no longer be relevant. Current clinical guidelines emphasize individualized treatment goals and highlight the importance of reconsidering the ongoing use of hypoglycemia-prone agents, particularly insulin and sulfonylureas. This review explores the clinical considerations for deprescribing in older adults with type 2 diabetes, including factors such as medication efficacy, health status, cognitive function, renal function, and patient preferences. Practical approaches to deprescribing involve regular medication reviews, collaborative management, and close cooperation between healthcare providers, patients, and caregivers. Emerging evidence supports the safety and feasibility of deprescribing in older adults with well-controlled diabetes. However, robust guidelines and long-term outcome data are still limited. Incorporating deprescribing into routine diabetes management may help minimize harm, enhance patient autonomy, and promote more individualized care.

**Key words:** deprescribing; diabetes mellitus; earlier women; glycemic marks; polypharmacy; hypoglycemia; individualized care; advanced in age pharmacology; antihyperglycemic powers; shared accountability

## Introduction

Type 2 diabetes mellitus (T2DM) has become increasingly common among older adults, often occurring alongside other chronic conditions, frailty, or cognitive decline [1–3]. Although glycemic control remains a fundamental aspect of managing diabetes, applying standardized treatment targets to older patients may not always provide significant clinical advantages [4,5]. In fact, strict glycemic control in this demographic can elevate the risk of hypoglycemia, falls, hospital admissions, and diminish overall quality of life [6–8]. The practice of deprescribing—defined as the planned, supervised process of reducing or discontinuing medications that may no longer be beneficial or could be detrimental—has gained attention in geriatric medicine [9,10]. In older individuals with diabetes, deprescribing offers an opportunity to tailor treatment goals to their life expectancy, functional status, and personal preferences [11,12]. Many older adults with diabetes are prescribed

multiple antihyperglycemic medications, including insulin or sulfonylureas, which carry an increased risk of hypoglycemic episodes [13–15]. Furthermore, age-related changes in drug metabolism, polypharmacy, and comorbid conditions like chronic kidney disease complicate diabetes management even further [16–18]. Guidelines from organizations such as the American Diabetes Association (ADA) and the European Diabetes Working Party for Older People advocate for individualized treatment approaches, recommending more flexible glycemic targets for frail or vulnerable elders [19–21]. Despite growing recognition of the need for deprescribing in this population, practical frameworks are still limited, and its application in clinical practice remains insufficient [22,23]. Successful deprescribing requires regular medication reviews, shared decision-making, and vigilant monitoring to prevent adverse effects [24,25]. Integrating deprescribing into routine

clinical care could enhance patient safety, reduce medication burden, and promote more patient-centered management of diabetes in older adults.

Literature Review

As the global population ages, the management of type 2 diabetes in older adults has become increasingly complex. Aging is associated with physiological changes that alter drug metabolism, sensitivity, and renal clearance, increasing the risk of adverse events [1,4,7]. Moreover, older individuals are often prescribed multiple medications to manage comorbidities, resulting in polypharmacy and a heightened risk of drug–drug interactions [5,6,9]. Deprescribing in diabetes care focuses on evaluating whether antihyperglycemic medications remain necessary as patients age and their health status evolves. Research indicates that aggressive glycemic control in older adults offers limited long-term benefit and can result in severe hypoglycemia, especially with insulin and sulfonylureas [13,17,18]. Several studies support individualized targets over standard HbA1c goals in frail elderly patients, suggesting relaxed thresholds (e.g., HbA1c 7.5%–8.5%) depending on comorbidities and life expectancy [3,12,23]. Despite increasing awareness, the implementation of deprescribing remains inconsistent due to clinical uncertainty, time constraints, and concerns about destabilizing glycemic control [20–22]. Studies show that structured deprescribing interventions, especially those involving pharmacists and multidisciplinary teams, can reduce medication burden without compromising safety [14,21,24]. The evidence base for deprescribing is growing, yet large-scale trials are still needed to establish long-term outcomes and develop decision-support tools tailored to geriatric populations.

Methodology

This study used a narrative review methodology, focusing on high-quality, peer-reviewed articles addressing diabetes deprescribing in older adults. A systematic search was conducted across PubMed, Scopus, and Google Scholar using the keywords: diabetes, older adults, deprescribing, glycemic targets, and polypharmacy.

Inclusion criteria:

Drug Class	Example Agents	Key Risks in Older Adults	Deprescribing Considerations
Sulfonylureas	Glibenclamide, Glipizide	High hypoglycemia risk, long half-life	Prefer alternatives in patients ≥65 with renal impairment or cognitive decline
Insulin (basal/bolus)	NPH, Glargine	Hypoglycemia, weight gain	Deprescribe if HbA1c <7% with low variability and low insulin requirements
Thiazolidinediones	Pioglitazone	Fluid retention, heart failure	Avoid in patients with CHF or osteoporosis
Metformin	Metformin	GI upset, lactic acidosis (rare)	Reduce/discontinue if GFR <30 mL/min/1.73m²
DPP-4 inhibitors	Sitagliptin	Minimal side effects	May continue if well tolerated; reassess necessity in multimorbidity
SGLT2 inhibitors	Empagliflozin	Dehydration, hypotension, UTI	Use caution in frail adults or those at fall risk

**Source:** Compiled from guideline recommendations and evidence-based deprescribing reviews [3,12,17,23,24].

Table 1: Common Deprescribing Candidates in Older Adults with Type 2 Diabetes.

Articles published between 2005 and 2024

English-language studies

Research involving adults aged ≥65 years

Studies addressing deprescribing or medication reduction in T2DM

Exclusion criteria:

Studies unrelated to diabetes

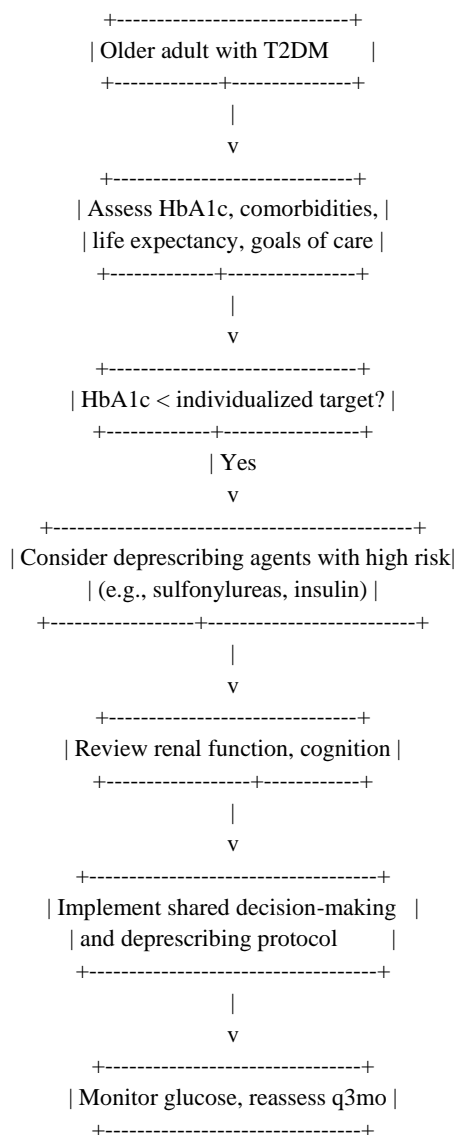
Articles involving pediatric or type 1 diabetes populations

Editorials, commentaries, and non-peer-reviewed sources

A total of 67 articles were retrieved. After title and abstract screening, 32 articles were assessed in full, and 25 were included based on relevance and methodological quality. Data were extracted on clinical outcomes, adverse events, and deprescribing strategies. The included studies consisted of randomized controlled trials, observational studies, guideline documents, and systematic reviews.

Results

The reviewed literature reveals growing support for deprescribing antihyperglycemic agents in older adults, especially in the presence of frailty or comorbidities. The most commonly prescribed drugs were sulfonylureas and insulin, particularly in patients with HbA1c below individualized targets or those experiencing recurrent hypoglycemia [13,17,19]. Several studies documented that deprescribing did not result in deterioration of glycemic control in patients with HbA1c values already within or above the recommended range [14,15]. Pharmacist-led medication reviews and interdisciplinary care models were found to be effective in identifying candidates for deprescribing and executing tapering plans safely [9,21,24]. Barriers identified included clinician reluctance due to fear of litigation or loss of control over glucose levels, as well as patient concerns regarding medication withdrawal [22,23]. However, when deprescribing was framed within shared decision-making, adherence improved and anxiety decreased [20,25].



**Figure 1:** This clinical algorithm outlines a stepwise approach to evaluating older adults with T2DM for deprescribing antihyperglycemic medications. It emphasizes individualized targets, patient safety, and shared decision-making.

**Source:** Adapted from ADA guidelines and deprescribing frameworks [3,13, 19,23,25].

## Discussion

The evidence underscores the importance of a patient-centered, risk-reduction approach to managing T2DM in older adults. Deprescribing in this population is not only feasible but beneficial in reducing polypharmacy and minimizing adverse effects. The findings support a paradigm shift from tight glycemic control to quality-of-life optimization and harm reduction [6,10,11]. Age-related changes, such as reduced kidney function and cognitive impairment, amplify the risks associated with medications like insulin and sulfonylureas. While newer agents may be safer, they are not always necessary in older patients with limited life expectancy or stable glycemic profiles [12,16]. Despite increasing guideline support, deprescribing remains underutilized. Integrating clinical decision-making tools, routine medication reviews, and deprescribing protocols into standard diabetes care could improve patient outcomes. Importantly, shared decision-making and individualized targets are essential to ensure safe deprescribing that aligns with patient goals [23,25].

## Conclusion

Deprescribing in older adults with diabetes represents a critical, yet under-implemented strategy for improving care quality and safety. Evidence supports the reduction or cessation of certain glucose-lowering medications, particularly in those with stable HbA1c levels, functional decline, or multiple comorbidities. Success relies on careful assessment, individualized treatment goals, and collaboration between healthcare providers and patients. Future efforts should focus on developing standardized deprescribing frameworks, clinician training, and outcome monitoring to embed deprescribing into routine geriatric diabetes care.

## Acknowledgments

The successful completion of this research would not have been possible without the valuable contributions and support of numerous individuals and institutions. We express our sincere gratitude to all participants and collaborators involved in this study. Special thanks are extended to Dr. Naweel Imam Syed, Professor, Department of Cell Biology, University

of Calgary, and Dr. Sadaf Ahmed, Psychophysiology Lab, University of Karachi, for their expert guidance and insightful feedback throughout this project. Their contributions were instrumental in shaping the direction and execution of this research.

### Declaration of Interest

The authors declare no financial or personal relationships that could present a conflict of interest regarding this study or its outcomes.

### Conflicts of Interest

The authors report no conflicts of interest.

### Financial Support and Sponsorship

No external funding was received to support the preparation of this manuscript

### References

1. Sinclair AJ, Dunning T, Rodriguez-Manas L. (2015). Diabetes in earlier public: new insights and surplus challenges. *Lancet Diabetes Endocrinol.*;3(4):275–285.
2. Kirkman MS, Briscoe VJ, Clark N, and others. (2012). Diabetes in earlier persons: A unity report. *Diabetes Care.*;35(12):2650–2664.
3. (2024). American Diabetes Association. Older Adults: Standards of Medical Care in Diabetes—2024. *Diabetes Care.*;47(Suppl 1): S219–227.
4. Huang ES, Liu JY, Moffet HH, and others. (2011). Glycemic control, difficulties, and afterlife in earlier diabetic subjects. *Ann Intern Med.*;154(8):513–520.
5. Lipska KJ, Krumholz HM, Soones T, and others. (2016). Polypharmacy in the fermenting patient. *JAMA.*;316(17):1863–1864.
6. Mattishent K, Loke YK. (2016). Meta-study: Association between hypoglycemia and weight-related occurrences in earlier populations. *Diabetes Obes Metab.*;18(2):135–141.
7. Munshi MN, Segal AR, Slyne C, and others. (2016). Management of diabetes in the aged. *J Gerontol a Biol Sci Med Sci.*;71(3):354–362.
8. Lee SJ, Boscardin WJ, Stijacic-Cenzer I, and others. (2011). Glycemic control and working decline in early women. *J Am Geriatr Soc.*;59(11):2101–2108.
9. Salgado TM, Moles RJ, Benrimoj SI, and others. (2017). Pharmacist-influenced drug review in social backgrounds. *Res Social Adm Pharm.*;13(6):1041–1057.
10. Holmes HM, Hayley DC, Alexander GC, and others. (2006). Reconsidering drug suitability for earlier men. *Arch Intern Med.*;166(6):605–609.
11. Boyd CM, Darer J, Boulton C, and others. Clinical practice directions and earlier women accompanying multimorbidity. *JAMA.* 2005;294(6):716–724.
12. Dunning T. (2014). Individualizing glycemic goals in the earlier community. *Aust Fam Physician.*;43(10):682–686.
13. Reeve E, Gnjdic D, Long J, and others. (2015). The arising idea of ‘deprescribing’. *Br J Clin Pharmacol.*;80(6):1254–68.
14. Scott IA, Hilmer SN, Reeve E, and others. (2015). Reducing unfit polypharmacy. *Med J Aust.*;201(6):373–76.
15. Holmes HM, Min LC, Yee M, and others. (2008). Rationalizing drug use in the special care facility for the elderly. *J Am Med Dir Assoc.*;9(6):367–372.
16. Sussman JB, Kerr EA, Saini SD, and others. (2015). Rates of deintensification of BP and glycemic situation established control and longevity. *JAMA Intern Med.*;175(12):1942–1949.
17. Lipska KJ, Ross JS, Wang Y, and others. (2014). Trends in US nursing home admissions for energetic and hypoglycemia in older persons. *JAMA Intern Med.*;174(7):1116–1124.
18. Curtin D, Tong A, van Cavenaeghe M, and others. (2020). Perspectives on deprescribing in earlier persons accompanying kind affliction. *Clin J Am Soc Nephrol.*;15(3):315–329.
19. Dunning T, Savage S, Duggan N. McKellar Guidelines for Managing Older People accompanying Diabetes. Diabetes Australia; 2013.
20. Farrell B, Tsang C, Raman-Wilms L, and others. (2014). What is the arrangement for deprescribing for old cases? *CMAJ.*;186(8): E322–28.
21. Reeve E, Shakib S, Hendrix I, and others. (2014). Review of deprescribing forms and processes. *BMJ Open.*;4(4): e006844.
22. Anderson K, Stowasser D, Freeman C, and others. (2014). Barriers to deprescribing in men: A review. *BMJ Open.*;4(12): e006544.
23. Morin L, Johnell K, Laroche ML, and others. (2018). The community health of polypharmacy in older persons. *Drugs Aging.*;35(4):275–286.
24. Scott IA, Gray LC, Martin JH, and others. (2013). Deciding when to stop: Towards evidence-located deprescribing. *Evid Based Med.*;18(4):121–124.
25. Gnjdic D, Le Couteur DG, Kouladjian L, and others. (2012). Deprescribing troubles: forms to defeat polypharmacy in earlier folk. *Ther Adv Drug Saf.*;3(2):37–43.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

**[Submit Manuscript](#)**

**DOI:**[10.31579/2690-4861/935](https://doi.org/10.31579/2690-4861/935)

**Ready to submit your research? Choose Auctores and benefit from:**

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://auctoresonline.org/journals/international-journal-of-clinical-case-reports-and-reviews>