



Research Article

# Homoeopathic Pharmacy in Type 2 Diabetes Mellitus: A Systematic Literature Review of Drug Preparation, Mechanisms, And Clinical Evidence

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## Abstract

Type 2 Diabetes Mellitus (T2DM) represents a major global health burden characterised by insulin resistance and progressive  $\beta$ -cell dysfunction. While conventional pharmacotherapy remains the mainstay of treatment, limitations such as adverse effects, cost, and incomplete glycaemic control have led to growing interest in complementary systems of medicine, including homoeopathy. Homoeopathic pharmacy, particularly the process of potentization, offers a distinctive approach to drug preparation involving serial dilution and succussion. This systematic literature review aims to evaluate the role of homoeopathic pharmacy in T2DM with emphasis on drug preparation methods, physicochemical mechanisms, and available clinical evidence. Literature was retrieved from PubMed, Scopus, Web of Science, and homoeopathic sources following PRISMA guidelines. Findings suggest that potentized medicines may exert biological effects through nanoparticle-mediated mechanisms, modulation of gene expression, and hormetic responses. Clinical studies indicate potential benefits in glycaemic control, though methodological limitations persist. Standardisation challenges and scientific controversies remain significant. This review highlights the need for rigorous interdisciplinary research to validate homoeopathic interventions in T2DM and integrate them into evidence-based practice.

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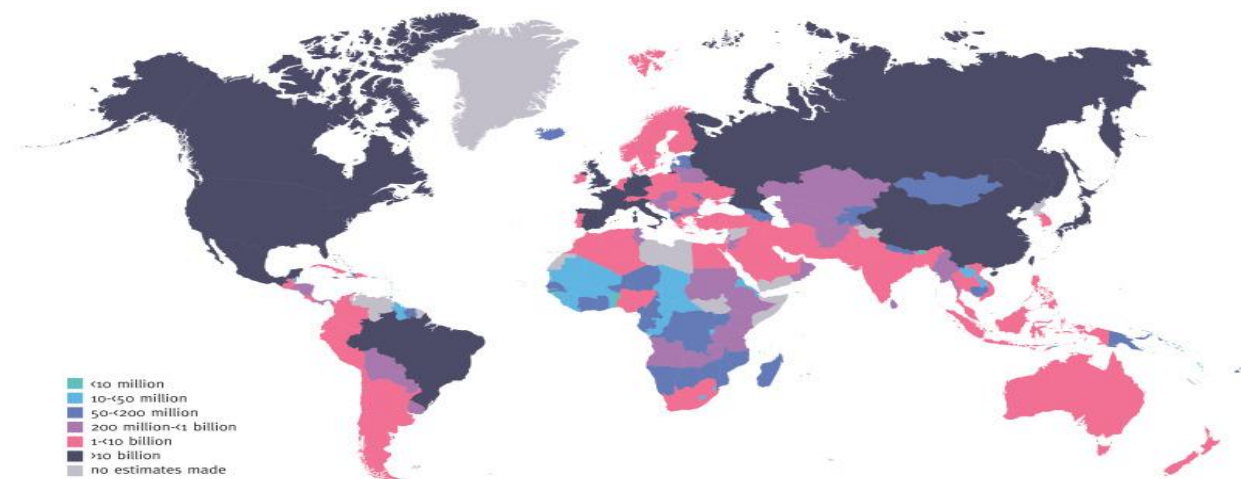
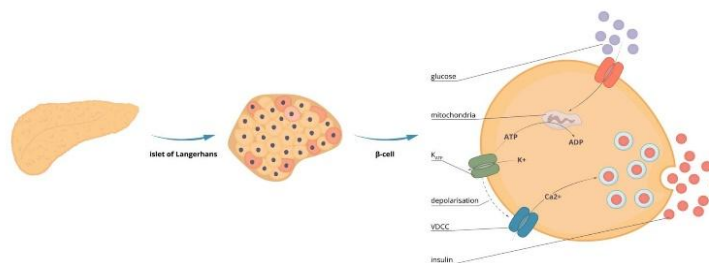
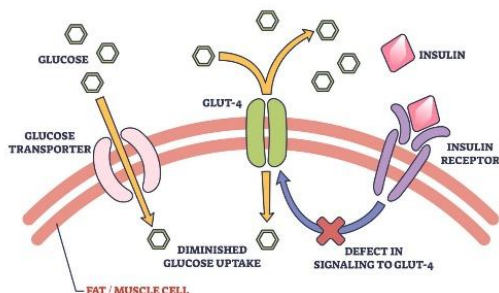


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**KEYWORDS:** Homoeopathy, Type 2 Diabetes Mellitus, Potentization, Nanomedicine, Glycaemic Control, Systematic Review

## 1. INTRODUCTION

### TYPE 2 DIABETES - INSULIN RESISTANCE



- “Type 2 Diabetes Mellitus is a long-term metabolic condition characterized by persistent hyperglycemia due to impaired insulin action and secretion.” characterized by hyperglycemia resulting from insulin resistance and impaired insulin secretion. The global prevalence of T2DM has risen dramatically, posing a significant challenge to healthcare systems worldwide. Conventional treatments, including oral hypoglycemic agents and insulin therapy, are often associated with adverse effects and limitations in long-term management.
- Homoeopathy offers a holistic and individualised therapeutic approach, wherein medicines are prepared through specific pharmaceutical processes such as potentization. Homoeopathic pharmacy focuses not only on the source substance but also on the method of preparation, which is believed to enhance therapeutic efficacy.
- This review explores the intersection of homoeopathic pharmacy and T2DM, emphasising drug preparation techniques, mechanistic insights, and clinical outcomes.

## 2. METHODOLOGY

### 2.1 Search Strategy

- A systematic literature search was conducted using:
- PubMed
- Scopus
- Web of Science
- Google Scholar

**Keywords included:** “Homoeopathy,” “Type 2 Diabetes Mellitus,” “potentization,” “nanoparticles,” “glycaemic control”

- A comprehensive literature search was undertaken to gather relevant information on homoeopathic pharmacy and its role in the management of Type 2 Diabetes Mellitus. Multiple electronic databases were explored, including PubMed, Scopus, Web of Science, and Google Scholar, to ensure wide coverage of both biomedical and complementary medicine literature.
- The search strategy incorporated a combination of keywords and phrases such as “Homoeopathy,” “Type 2 Diabetes Mellitus,” “potentization,” “nanoparticles,” and “glycaemic control.” These terms were used individually and in combination to retrieve the most relevant studies. In addition, classical homoeopathic texts and standard pharmacopoeias were also consulted to provide foundational and theoretical insights.

- Only peer-reviewed articles, experimental studies, clinical trials, and review papers published in English were considered. The selected literature was critically analysed and synthesised to provide a comprehensive understanding of homoeopathic drug preparation, mechanisms of action, and clinical relevance in Type 2 Diabetes Mellitus.

## 2.2 Inclusion Criteria

- Peer-reviewed articles
- Clinical trials and experimental studies



- Reviews on homoeopathy and diabetes

## 2.3 Exclusion Criteria

- Non-scientific reports
- Duplicate studies
- Incomplete data

## 3. Homoeopathic Pharmacy and Drug Preparation

### Homoeopathic medicines are prepared through:

#### 3.1 Trituration

Used for insoluble substances such as minerals, ensuring uniform distribution.

#### 3.2 Serial Dilution

Stepwise dilution (centesimal, decimal, LM scales) reduces toxicity while enhancing therapeutic potential.

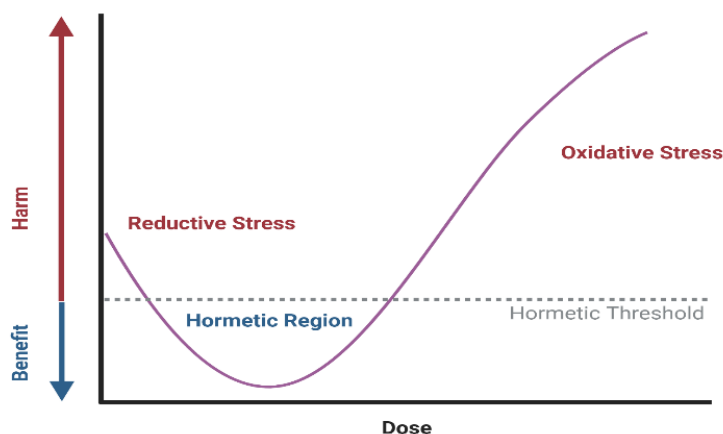
#### 3.3 Succussion

Mechanical agitation believed to activate medicinal properties.

## 4. Mechanisms of Action in Type 2 Diabetes Mellitus

Understanding the mechanisms underlying the effects of homoeopathic medicines in Type 2 Diabetes Mellitus (T2DM) remains a complex and evolving area of research. Unlike conventional pharmacological agents that act through well-defined biochemical pathways, homoeopathic remedies are proposed to exert their effects through multi-level regulatory mechanisms. Emerging interdisciplinary evidence from nanoscience, molecular biology, and systems medicine has provided several plausible explanatory models.

### Hormesis Dose-Response Curve in Relation to ROS



#### 4.1 Nanoparticle Hypothesis

One of the most widely discussed modern explanations for the action of potentized homeopathic medicines is the nanoparticle hypothesis. Advanced analytical techniques, including transmission electron microscopy (TEM) and dynamic light scattering (DLS), have demonstrated the presence of nanoparticles derived from the original source material, even in high dilutions.

##### These nanoparticles may:

- Serve as carriers of physicochemical information
- Interact with cellular membranes and receptors
- Influence intracellular signalling pathways involved in glucose metabolism

Additionally, silica nanoparticles leached from glass containers during the process of succussion may contribute to the formation of stable nanostructures. These findings suggest that homeopathic preparations could function as nanopharmacological agents, capable of exerting biological effects at ultra-low concentrations.

#### 4.2 Gene Regulation and Molecular Signalling

Recent experimental studies indicate that homeopathic medicines may influence **gene expression and molecular signalling pathways** relevant to T2DM. Observed effects include:

- Modulation of genes associated with **insulin signalling and glucose transport (e.g., GLUT pathways)**
- Regulation of **oxidative stress and inflammatory markers**
- Influence on **cellular metabolic pathways**

Such findings support the hypothesis that homeopathic remedies may act at the genomic and proteomic levels, contributing to improved metabolic regulation. These effects are often subtle and systemic, aligning with the holistic philosophy of homeopathy.

#### 4.3 Hormesis and Adaptive Response

The concept of **hormesis** provides another important framework for understanding the action of homeopathic medicines. Hormesis describes a biphasic dose-response relationship in which low doses of a substance stimulate beneficial adaptive responses, while higher doses may be inhibitory or toxic.

##### In the context of T2DM:

- Ultra-low doses may trigger adaptive metabolic responses
- Cellular resilience and homeostatic balance may be enhanced
- Endogenous regulatory mechanisms may be activated

This concept aligns closely with homeopathic principles, where minimal doses are believed to stimulate the body's self-healing capacity.

#### 4.4 Systems Biology and Holistic Regulation

Homeopathy inherently adopts a **systems biology approach**, focusing on the organism as an integrated whole rather than isolated biochemical targets. In T2DM, this perspective is particularly relevant due to the multifactorial nature of the disease, involving metabolic, hormonal, inflammatory, and psychosocial components.

##### Homeopathic medicines may:

- Modulate multiple metabolic pathways simultaneously
- Influence the neuroendocrine-immune network
- Restore dynamic equilibrium (homeostasis) within the organism

This holistic mode of action contrasts with reductionist approaches and may offer advantages in managing complex chronic conditions such as T2DM.

#### 4.5 Integrated Perspective

Collectively, these mechanisms—nanoparticle-mediated effects, gene regulation, hormetic responses, and systems-level modulation—suggest that homeopathic medicines may operate through **multi-layered biological interactions**. While none of these mechanisms alone fully explains the observed clinical effects, their integration provides a more comprehensive understanding.

#### 5. Clinical Evidence

The clinical evidence evaluating the role of homeopathic pharmacy in the management of Type 2 Diabetes Mellitus (T2DM) is evolving, with contributions from observational studies, randomized controlled trials (RCTs), and individual case reports. While the overall body of evidence remains limited in scale and methodological rigor, several studies suggest potential benefits in glycemic control and patient-centered outcomes.

##### 5.1 Observational Studies

Observational studies constitute a significant portion of the available clinical data on homeopathy in T2DM. These studies, often conducted in real-world clinical settings, provide valuable insights into long-term outcomes and individualized treatment approaches.

Several observational reports have documented:

- **Reduction in fasting blood glucose (FBG):** Patients receiving individualised homeopathic treatment have shown gradual improvements in baseline glucose levels over time.
- **Improvement in glycated haemoglobin (HbA1c):** Sustained reductions in HbA1c values suggest better long-term glycemic control, particularly in patients adhering to lifestyle modifications alongside homeopathic therapy.
- **Symptomatic relief:** Patients frequently report improvement in classic diabetic symptoms such as polyuria, polydipsia, fatigue, and general well-being.

Additionally, some cohort studies indicate improvements in associated metabolic parameters, including body weight, lipid profile, and insulin sensitivity markers. However, the absence

of control groups and potential confounding factors limit the strength of causal inferences.

### 5.2 Randomised Controlled Trials

Randomised controlled trials (RCTs) represent the gold standard for evaluating therapeutic efficacy. In the context of homoeopathy and T2DM, the number of well-designed RCTs remains limited, but available studies provide encouraging findings.

#### Key observations include:

- **Adjunctive benefit with conventional therapy:** Homoeopathic medicines used alongside standard antidiabetic drugs have demonstrated additive effects in improving glycemic parameters, suggesting a complementary role rather than a replacement therapy.
  - **Improvement in quality of life (QoL):** Several trials have reported enhanced patient-reported outcomes, including reduced fatigue, improved energy levels, and better psychological well-being.
  - **Safety profile:** Homoeopathic interventions are generally well tolerated, with minimal or no reported adverse effects.
- Despite these promising results, many trials are constrained by small sample sizes, short follow-up durations, and variability in remedy selection, which affects reproducibility and generalizability.

### 5.3 Case Studies and Case Series

Case studies and case series provide detailed documentation of individualized homoeopathic treatment in T2DM, reflecting the core principle of patient-specific remedy selection.

Reported outcomes include:

- **Significant reductions in blood glucose levels** following individualized remedy prescription
- **Decreased dependence on conventional medications** in selected cases under medical supervision
- **Improvement in associated comorbidities**, such as hypertension, obesity, and neuropathic symptoms

These reports highlight the potential of homoeopathy in personalized care; however, they are inherently limited by the absence of control groups and susceptibility to bias.

### 5.4 Critical Appraisal of Evidence

While the existing clinical evidence suggests potential benefits of homoeopathic interventions in T2DM, several limitations must be acknowledged:

- Heterogeneity in study design and treatment protocols
- Limited sample sizes and statistical power
- Lack of standardised outcome measures
- Potential placebo and contextual effects

Therefore, although preliminary findings are encouraging, there is a clear need for large-scale, well-designed, multicentric randomized controlled trials with standardised methodologies to establish definitive evidence.

## 6. Standardisation in Homoeopathic Pharmacy



#### Efforts toward standardisation include:

- Adoption of Good Manufacturing Practices (GMP)
- Use of automated potentization systems
- Development of pharmacopoeial standards
- Application of advanced analytical techniques

### 7. Challenges and Limitations

- Lack of large-scale clinical trials
- Variability in preparation methods
- Limited mechanistic clarity
- Scepticism in mainstream medicine

### 8. Future Perspectives

- Integration with **nanotechnology**
- Use of **omics technologies (genomics, proteomics)**

- Multicentric clinical trials
- Evidence-based integration into healthcare

## 9. DISCUSSION

Homeopathic pharmacy presents a distinctive and holistic paradigm in the management of Type 2 Diabetes Mellitus (T2DM), differing fundamentally from conventional pharmacotherapy that primarily targets specific biochemical pathways such as insulin signaling and glucose metabolism. In contrast, homeopathy emphasizes an individualized, patient-centered approach, aiming to restore systemic balance and enhance the body's intrinsic regulatory mechanisms.

The pharmaceutical process of potentization, central to homeopathy, challenges conventional dose-response relationships by employing ultra-high dilutions. While traditionally viewed as scientifically implausible, emerging evidence from nanoscience and physicochemical research has begun to provide potential explanatory models. The detection of nanoparticles in highly diluted preparations, along with observed changes in solvent structure, suggests that potentized remedies may retain biologically relevant information capable of interacting with living systems.

Furthermore, the concept of hormesis—where low doses of a substance stimulate adaptive biological responses—offers an additional framework for understanding the therapeutic effects of homeopathic medicines. These perspectives are increasingly supported by studies demonstrating gene regulatory effects, modulation of cellular signaling pathways, and systemic responses in experimental models.

Despite these promising developments, the field continues to face significant challenges. Variability in study design, limited sample sizes, and difficulties in reproducibility have hindered widespread scientific acceptance. Moreover, the lack of universally accepted mechanistic explanations necessitates cautious interpretation of existing evidence.

Nevertheless, the convergence of homeopathy with modern scientific disciplines such as nanomedicine, systems biology, and bioinformatics provides a fertile ground for future research. By adopting rigorous methodologies and interdisciplinary collaboration, homeopathic pharmacy may evolve into a scientifically validated complementary approach in the management of T2DM, contributing to more integrative and patient-centred healthcare strategies.

## 10. CONCLUSION

Homeopathic pharmacy offers a distinctive and potentially valuable complementary approach in the management of Type 2 Diabetes Mellitus, grounded in its unique principles of drug preparation, particularly potentization. By employing ultra-low-dose formulations, homeopathic medicines are proposed to exert therapeutic effects through mechanisms that extend beyond conventional pharmacological paradigms, including nanoscale interactions, regulatory biological responses, and systemic modulation.

Emerging clinical and experimental evidence suggests a possible role for homeopathic interventions in improving

glycemic control, metabolic balance, and overall patient well-being. However, the current body of evidence remains limited by methodological variability, small sample sizes, and insufficient standardization. These limitations underscore the need for more robust, well-designed studies to establish reproducibility, efficacy, and mechanistic clarity.

Future progress in this field will depend on the integration of homeopathic principles with advances in nanotechnology, molecular biology, and systems medicine. Strengthening pharmacopoeial standards, adopting rigorous quality control measures, and fostering interdisciplinary collaboration will be essential for enhancing scientific credibility and clinical applicability.

In conclusion, while homeopathic pharmacy in Type 2 Diabetes Mellitus remains an evolving domain, it holds significant promise as part of an integrative therapeutic framework. Continued scientific exploration may not only validate its role but also contribute to the development of innovative, patient-centred strategies for managing metabolic disorders.

## REFERENCES

1. Bell IR, Koithan M, Brooks AJ. Testing the nanoparticle-allostatic cross-adaptation-sensitization model for homeopathic remedy effects. *Homeopathy*. 2013;102(1):66–81.
2. Bhattacharyya SS, Mandal SK, Biswas R, Paul S, Pathak S, Boujedaini N, et al. Nanoparticles and homeopathy: A possible link. *J Nanobiotechnol*. 2010;8(1):1–15.
3. Chikramane PS, Suresh AK, Bellare JR, Kane SG. Extreme homeopathic dilutions retain starting materials: A nanoparticulate perspective. *Homeopathy*. 2010;99(4):231–242.
4. Fisher P. Homeopathy and science. *Evid Based Complement Alternat Med*. 2012;2012:1–8.
5. Hahnemann S. *Organon of medicine*. 6th ed. New Delhi: B Jain Publishers; 2002.
6. Kayne S. *Homeopathic pharmacy: Theory and practice*. 2nd ed. Edinburgh: Churchill Livingstone Elsevier; 2006.
7. Khuda-Bukhsh AR. Towards understanding molecular mechanisms of action of homeopathic drugs. *Mol Cell Biochem*. 2003;253(1-2):339–345.
8. Lenger K, Bajpai RP, Spielmann M. Delayed luminescence of high homeopathic potencies on water. *Homeopathy*. 2008;97(3):134–139.
9. Milgrom LR. Patient-practitioner-remedy entanglement: A gyroscopic metaphor for the vital force. *Homeopathy*. 2009;98(3):139–148.
10. Montagnier L, Aïssa J, Ferris S, Montagnier JL, Lavallée C. Electromagnetic signals from DNA nanostructures. *Interdiscip Sci*. 2009;1(2):81–90.
11. Rao ML, Roy R, Bell IR, Hoover R. Role of structure in the plausibility of homeopathy. *Homeopathy*. 2007;96(3):175–182.

12. Sarkar S, Chakraborty I. Nanoparticles in homeopathy: A critical overview. *Int J High Dilution Res.* 2012;11(41):128–132.
13. Sharma B, Dey S, Saha S, Khuda-Bukhsh AR. Homeopathy and nanoscience: A new horizon. *J Integr Med.* 2015;13(5):1–6.
14. Tournier A, Roberts ER. Homeopathy as nanomedicine. *Eur J Integr Med.* 2015;7(3):179–183.
15. Upadhyay RP, Nayak C. Homeopathy emerging as nanomedicine. *Int J High Dilution Res.* 2011;10(37):299–310.
16. Witt CM, Lüdtkke R, Baur R, Willich SN. Homeopathic medical practice: Long-term cohort study. *BMC Public Health.* 2005;5(1):1–8.
17. World Health Organization. *Guidelines on good manufacturing practices for herbal medicines.* Geneva: WHO Press; 2010.
18. Government of India. *Homoeopathic pharmacopoeia of India.* Vol. IX. New Delhi: Ministry of AYUSH; 2016.
19. Jonas WB, Jacobs J. *Healing with homeopathy: The complete guide.* New York: Warner Books; 1996.
20. Mathie RT, Lloyd SM, Legg LA, Clausen J, Moss S, Davidson JRT, et al. Randomised placebo-controlled trials of individualized homeopathic treatment: Systematic review and meta-analysis. *Syst Rev.* 2014;3(142):1–13.
21. Chaplin M. The memory of water: An overview. *Homeopathy.* 2007;96(3):143–150.
22. Rey L. Thermoluminescence of ultra-high dilutions. *Physica A.* 2003;323:67–74.
23. Elia V, Niccoli M. Physicochemical properties of diluted aqueous solutions. *J Therm Anal Calorim.* 2004;75(3):815–836.
24. Anick DJ, Ives JA. The silica hypothesis for homeopathy. *Homeopathy.* 2007;96(3):189–195.
25. Bastide M, Doucet-Jabeuf M, Doucet-Jabeuf M. Immunological effects of homeopathic medicines. *Int J Immunother.* 1997;13(3):1–7.
26. Sukul NC, Bala SK, Bhattacharyya B. Prolonged cataleptogenic effect of homeopathic drugs. *Indian J Exp Biol.* 2001;39(4):339–345.
27. Ernst E. A systematic review of systematic reviews of homeopathy. *Br J Clin Pharmacol.* 2002;54(6):577–582.
28. Walach H. The entanglement model of homeopathy. *Homeopathy.* 2005;94(1):1–8.
29. de Oliveira RF, et al. Effects of high dilutions in plants: A review. *Int J High Dilution Res.* 2011;10(36):1–9.
30. Bellavite P, Signorini A. *The emerging science of homeopathy: Complexity, biodynamics, and nanopharmacology.* Berkeley: North Atlantic Books; 2002.

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