

Ginger (*Zingiber officinale*) for Nausea and Vomiting of Pregnancy: A Narrative Review

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ABSTRACT

Nausea and vomiting of pregnancy (NVP) affect approximately 70–80% of pregnant women, particularly during the first trimester, and can substantially reduce maternal quality of life. Concerns regarding the potential adverse effects of pharmacological antiemetics have increased interest in complementary therapies, including ginger (*Zingiber officinale*), as a non-pharmacological alternative. This narrative review aimed to synthesize recent evidence regarding the effectiveness, safety, dosage, and mechanism of action of ginger in managing NVP. A literature search was conducted using PubMed and ScienceDirect to identify articles published between 2020 and 2025. Five eligible studies, comprising cross-sectional studies, literature reviews, an umbrella review, and a comprehensive evidence-based review, were included and narratively synthesized. The findings consistently demonstrated that ginger effectively reduces nausea during pregnancy, although its effect on vomiting is less consistent. Recommended doses ranged from 0.5 to 3 g/day, administered mainly as oral capsules or ginger tea. Ginger exerts its antiemetic effects by inhibiting serotonin (5-HT₃) receptors, enhancing gastric emptying, and providing anti-inflammatory and antioxidant activities. Overall, ginger has a favorable safety profile when consumed within the recommended dosage, although caution is advised in pregnant women with bleeding disorders or those receiving anticoagulant therapy. Ginger may therefore be considered an effective and generally safe complementary therapy for managing mild to moderate NVP; however, further high-quality clinical studies are needed to establish standardized dosage recommendations and strengthen the evidence supporting its routine clinical use.

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1. INTRODUCTION

Nausea and vomiting during pregnancy (NVP) is one of the most common pregnancy-related conditions, affecting approximately 70–80% of women during the first trimester (Jahan et al., 2022). Although NVP is generally considered a self-limiting condition and rarely poses direct harm to the fetus, it can substantially impair maternal quality of life by disrupting daily activities, reducing nutritional intake, and causing psychological distress (Martinez de Tejada et al., 2025). In more severe cases, NVP may progress to hyperemesis gravidarum, a serious condition characterized by persistent nausea and vomiting that can lead to dehydration, electrolyte imbalance, weight loss, and nutritional deficiencies requiring medical intervention (Saber et al., 2013).

Pharmacological management of NVP commonly includes vitamin B6, antihistamines, metoclopramide, and ondansetron. However, concerns regarding the safety of antiemetic medications during early pregnancy, particularly during the critical period of fetal organogenesis, have led many pregnant women and healthcare providers to consider complementary and non-pharmacological approaches as safer alternatives (Coffey et al., 2023). Consequently, the use of herbal medicines has increased worldwide, reflecting a growing preference for therapies perceived as natural, accessible, and associated with fewer adverse effects (Das et al., 2023).

Among the various herbal interventions, ginger (*Zingiber officinale*) is one of the most extensively studied and widely recommended remedies for pregnancy-related nausea and vomiting. Ginger contains bioactive compounds, primarily gingerol and shogaol, which exert antiemetic effects through inhibition of serotonin receptors in the gastrointestinal tract and enhancement of gastric emptying (Crichton et al., 2022). Previous studies have consistently demonstrated that ginger consumption at doses ranging from 0.5 to 3 g/day may effectively reduce the severity of nausea during pregnancy while maintaining a favorable safety profile. Nevertheless, variations in study design, ginger formulations, dosage regimens, treatment duration, and outcome measurements have resulted in inconsistent conclusions regarding the optimal dosage and long-term safety of ginger supplementation during pregnancy (Kahsay et al., 2022; Kesehatan et al., 2023). Furthermore, recent systematic reviews have reported that ginger is significantly more effective than placebo in reducing nausea without increasing serious adverse events; however, the certainty of the available evidence remains low to moderate due to methodological heterogeneity among the included studies (Fifin Oktaviani et al., 2025; Tiani et al., 2024).

Despite the increasing body of evidence supporting ginger as a non-pharmacological intervention for NVP, the available findings remain dispersed across different study designs and review articles, making it difficult for clinicians and pregnant women to obtain a comprehensive and up-to-date synthesis of the current evidence. A narrative review is therefore warranted to integrate recent findings, critically summarize the available evidence, and identify areas requiring further investigation.

Accordingly, this narrative review aims to synthesize recent evidence regarding the effectiveness, safety, recommended dosage, and mechanisms of action of ginger (*Zingiber officinale*) in the management of nausea and vomiting during pregnancy. The review summarizes studies retrieved from ScienceDirect and PubMed to provide an evidence-based overview that may support clinical decision-making and guide future research.

2. METHOD

2.1 Study Design

This study employed a narrative review design to synthesize recent scientific evidence regarding the effectiveness, safety, dosage, and mechanism of action of ginger (*Zingiber officinale*) in managing nausea and vomiting during pregnancy (NVP). A narrative review approach was selected to provide a comprehensive overview of current evidence from various study designs and to summarize findings relevant to clinical practice.

2.2 Literature Search Strategy

A literature search was conducted using two international electronic databases, namely PubMed and ScienceDirect. The search included articles published between 2020 and 2025. The search was performed using combinations of the following keywords: "Ginger," "*Zingiber officinale*," "Pregnancy," "Nausea," and "Vomiting." These keywords were combined using Boolean operators (AND/OR) to identify studies relevant to the use of ginger as a non-pharmacological intervention for nausea and vomiting during pregnancy.

2.3 Eligibility Criteria

Studies were considered eligible if they met the following inclusion criteria: (1) published between 2020 and 2025; (2) written in English; (3) investigated the use of ginger for nausea and vomiting during pregnancy; and (4) included quantitative studies, clinical trials, observational studies, systematic reviews, or other relevant review articles. Studies were excluded if they were unrelated to pregnancy, investigated ginger for conditions other than nausea and vomiting, involved animal or laboratory experiments, or lacked sufficient information relevant to the objectives of this review.

2.4 Study Selection and Data Extraction

The initial search identified 34 articles, comprising 1 article from PubMed and 33 articles from ScienceDirect. Titles and abstracts were screened according to the predefined eligibility criteria. Following the screening process, 29 articles were excluded because they did not specifically address ginger use during pregnancy, involved non-pregnant populations, focused on unrelated outcomes, or used animal subjects. Consequently, five articles were included in the final review.

Relevant information extracted from the selected studies included the author and year of publication, study design, study population, form of ginger administration, dosage and duration of use, principal findings, and reported advantages and limitations. The findings from these studies were then synthesized narratively to provide an evidence-based overview of the effectiveness and safety of ginger for managing nausea and vomiting during pregnancy.

3. RESULTS AND DISCUSSION

3.1 Characteristics of the Included Studies

Table 1. Characteristics of the Included Studies

Author (Year)	Study Design	Population	Ginger Form	Dose and Duration	Main Findings
Kahssay et al., (2022)	Cross-sectional	264 pregnant women, Ethiopia	Fresh ginger prepared as tea	No standardized dose; consumed as needed	17.69% of participants used ginger to relieve nausea and vomiting.
Coffey et al., (2023)	Literature review	Pregnant women in the first trimester	Ginger tea or capsules	According to symptom severity during the first trimester	Ginger reduced nausea but showed limited effectiveness for vomiting.
Jahan et al., (2022)	Cross-sectional	383 pregnant women, Bangladesh	Ginger tea and culinary preparations	No standardized dosage	73.10% of participants reported using ginger for nausea, vomiting, and influenza symptoms.
Crichton et al., (2022)	Umbrella review	Humans, including pregnant women	Oral capsules	0.5–3 g/day for up to 3 months	High-certainty evidence demonstrated ginger effectively reduced nausea

					with a favorable safety profile.
Martinez de Tejada et al., (2025)	Comprehensive review.	Pregnant women with NVP/HG	Oral capsules	0.5–1 g/day during the first trimester	Ginger reduced nausea and vomiting, improved quality of life, and helped prevent more severe complications.

A total of five eligible studies published between 2020 and 2025 were included in this narrative review. The selected studies comprised two cross-sectional studies, one literature review, one umbrella review, and one comprehensive evidence-based review. Most studies evaluated ginger administered as tea or oral capsules, although the reported dosage and duration of use varied considerably. Recommended doses generally ranged from 0.5 to 3 g/day, with capsule formulations being the most frequently investigated in clinical evidence. Overall, the included studies consistently supported the effectiveness of ginger in reducing pregnancy-related nausea while demonstrating an acceptable safety profile when consumed within the recommended dosage range.

3.2 Effectiveness of Ginger in Reducing the Frequency and Intensity of Nausea and Vomiting

The findings of the included studies consistently indicate that ginger is effective in reducing nausea during early pregnancy, although its effect on vomiting appears less consistent. The strongest evidence was reported by Crichton et al., whose umbrella review of 24 systematic reviews demonstrated that ginger significantly reduced nausea, particularly when administered in capsule form at doses ranging from **0.5–2 g/day**. The evidence was rated as high certainty using the GRADE approach, and women receiving ginger were reported to have a substantially lower likelihood of experiencing nausea than those receiving placebo (Crichton et al., 2022). Nevertheless, improvements in vomiting were less consistent across studies, suggesting that ginger exerts a greater therapeutic effect on nausea than on vomiting (Martinez de Tejada et al., 2025).

The effectiveness of ginger was also supported by clinical recommendations and observational evidence. Coffey et al. recommended ginger as a first-line non-pharmacological intervention for mild pregnancy-related nausea, particularly in settings where access to pharmacological treatment is limited (Coffey et al., 2023). Similarly, Jahan et al. reported that 73.1% of pregnant women in Bangladesh used ginger to manage nausea and vomiting, although only a small proportion informed healthcare providers about its use (Jahan et al., 2022). In Ethiopia, Kahssay et al. found that many pregnant women independently consumed ginger without professional guidance, reflecting its widespread acceptance as a self-care intervention during pregnancy (Kahssay et al., 2022).

Although the evidence consistently supports the antiemetic effect of ginger, differences in study design, ginger formulation, dosage, treatment duration, and outcome assessment contribute to variability in reported effectiveness. Consequently, standardized recommendations regarding the optimal dosage and formulation remain limited and warrant further investigation.

3.3 Safety of Ginger Consumption During Pregnancy

The reviewed evidence suggests that ginger has a favorable safety profile when consumed within the recommended dosage range of 0.5–3 g/day for up to three months (Crichton et al., 2022; Martinez de Tejada et al., 2025). No convincing evidence indicates an increased risk of miscarriage, congenital anomalies, preterm birth, or adverse fetal outcomes associated with appropriate ginger consumption. These findings support the use of ginger as a safe complementary therapy for managing mild nausea during the first trimester, a critical period of fetal organ development. Accordingly, several clinical guidelines recommend ginger before considering pharmacological antiemetic therapy such as metoclopramide or ondansetron (Coffey et al., 2023).

Despite its overall safety, ginger should not be regarded as entirely risk-free. Excessive or inappropriate consumption may increase the likelihood of adverse effects, particularly among women with underlying medical conditions. Kahssay et al. reported concerns regarding unsupervised self-medication among pregnant

women (Kahssay et al., 2022). Furthermore, isolated reports have suggested that inappropriate high-dose consumption may be associated with adverse pregnancy outcomes, although current evidence remains insufficient to establish a causal relationship. Because ginger may influence platelet aggregation, pregnant women receiving anticoagulant therapy or those with bleeding disorders should use ginger cautiously under professional supervision (Martinez de Tejada et al., 2025).

These findings emphasize that ginger should be recommended as an evidence-based complementary therapy rather than a substitute for antenatal care. Appropriate counselling regarding dosage, duration of use, and contraindications is essential to maximize therapeutic benefits while minimizing potential risks.

3.4 Mechanism of Action of Ginger as a Natural Antiemetic

The antiemetic activity of ginger is primarily attributed to its major bioactive compounds, gingerol and shogaol, which inhibit serotonin type-3 (5-HT₃) receptors in the gastrointestinal tract (Crichton et al., 2022). Inhibition of these receptors reduces the transmission of nausea signals from the digestive system to the vomiting center in the brain, thereby alleviating nausea associated with hormonal and gastrointestinal changes during early pregnancy. In addition, ginger promotes gastric emptying and improves gastrointestinal motility, reducing gastric distension and the sensation of fullness that frequently exacerbates nausea (Martinez de Tejada et al., 2025).

Beyond its antiemetic properties, ginger possesses anti-inflammatory and antioxidant activities that may protect the gastrointestinal mucosa and reduce local inflammatory responses. These combined mechanisms contribute to the overall reduction of nausea severity and support the widespread recommendation of ginger as a complementary intervention for women experiencing mild to moderate NVP (Crichton et al., 2022; Martinez de Tejada et al., 2025). The biological plausibility of these mechanisms, together with consistent clinical findings, further strengthens the evidence supporting ginger as an effective non-pharmacological option for managing nausea during pregnancy.

4. CONCLUSION

This narrative review demonstrates that ginger (*Zingiber officinale*) is an effective and generally safe non-pharmacological intervention for managing nausea and vomiting during pregnancy, particularly during the first trimester. The reviewed evidence indicates that ginger, administered as tea or oral capsules at doses ranging from 0.5 to 3 g/day, effectively reduces the severity of nausea while exhibiting a favorable safety profile when consumed within the recommended dosage and duration. Its antiemetic effects are primarily attributed to the actions of gingerol and shogaol, which inhibit 5-HT₃ receptors, promote gastric emptying, and provide anti-inflammatory and antioxidant effects.

Although the available evidence supports the clinical use of ginger, differences in study design, ginger formulations, dosage regimens, and treatment duration indicate that further well-designed clinical studies are needed to establish standardized recommendations regarding the optimal dosage and long-term safety of ginger use during pregnancy. Healthcare providers should educate pregnant women regarding the appropriate use of ginger, particularly among those with bleeding disorders or those receiving anticoagulant therapy, to ensure its safe and evidence-based application.

Overall, ginger may be considered a practical and evidence-based complementary therapy for mild to moderate nausea and vomiting of pregnancy. Future research should focus on high-quality randomized controlled trials with standardized intervention protocols to strengthen the evidence and support the development of clinical guidelines for the use of ginger during pregnancy.

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