



Infrared Therapy Versus Sitz Bath for Episiotomy Wound Healing and Maternal Comfort

A Narrative Review

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Abstract

Episiotomy pain and delayed perineal healing can interfere with sitting, walking, urination, sleep, breastfeeding, infant care, and emotional recovery after childbirth. Infrared therapy and sitz baths are non-pharmacological interventions used to reduce discomfort and support healing. Infrared therapy supplies controlled dry radiant heat, whereas a sitz bath exposes the perineum to shallow warm water. This narrative review compares their proposed mechanisms, clinical outcomes, safety, feasibility, and acceptability. Recent evidence suggests that dry heat may produce larger improvements in pain and Redness, Edema, Ecchymosis, Discharge, and Approximation scores than moist heat, but individual studies are heterogeneous and not uniformly conclusive. A 2024 randomized study of 208 primiparous women reported very similar wound and pain outcomes between far-infrared therapy and sitz baths, with several group differences not reaching statistical significance. Intervention choice should therefore consider equipment, hygiene, privacy, mobility, cultural preferences, treatment burden, and the woman's informed preference. Neither method replaces wound assessment, analgesia when indicated, perineal hygiene, or prompt evaluation of infection, dehiscence, hematoma, or persistent pain. Better trials should standardize treatment protocols, measure clinically important outcomes, and incorporate women's experiences alongside clinical healing.

Keywords: episiotomy, infrared therapy, sitz bath, perineal wound healing, postpartum pain, maternal comfort

Introduction

An episiotomy is a surgical incision of the perineum performed during vaginal birth when widening the vaginal opening is clinically indicated. It is no longer recommended as a routine procedure, but it may be used when birth must be expedited, assisted vaginal delivery is required, or severe perineal trauma is considered likely (National Health Service [NHS], 2023). The incision is normally repaired with absorbable sutures. During early healing, women may experience pain, edema, bruising, difficulty sitting, discomfort during urination or defecation, restricted mobility, and anxiety about infection or wound separation.

Perineal discomfort is not a minor outcome. It can affect rest, breastfeeding position, infant care, mobility, continence, sexual health, and confidence during the transition to motherhood. World Health Organization (WHO, 2022) guidance defines a positive postnatal experience as one in which women receive consistent information, reassurance, support, and care responsive to their needs. Effective episiotomy care should therefore address clinical healing and the woman's experience of dignity, comfort, control, and practicality. Infrared therapy and sitz baths are widely discussed non-drug options, but their comparative value requires cautious interpretation.



Episiotomy Healing and Clinical Assessment

Normal wound repair progresses through hemostasis, inflammation, tissue proliferation, and remodeling. Local perfusion, oxygenation, nutrition, hygiene, suture technique, diabetes, anemia, infection, smoking, tissue trauma, and repeated pressure can influence this process. Early pain and swelling may be expected, but increasing pain, spreading redness, purulent or malodorous discharge, fever, wound separation, heavy bleeding, or a tense swelling may indicate infection, dehiscence, or hematoma and require prompt clinical review.

The Redness, Edema, Ecchymosis, Discharge, and Approximation (REEDA) scale provides a structured method for observing perineal healing (Davidson, 1974). Lower scores generally represent better healing. Pain is often measured with a Visual Analog Scale (VAS) or numerical rating scale. These instruments are useful, but they capture different constructs: REEDA emphasizes visible wound features, whereas pain reflects tissue injury, inflammation, expectations, fatigue, anxiety, and individual sensitivity. Studies should also assess analgesic use, functional mobility, sleep, breastfeeding comfort, adverse events, and satisfaction.

Infrared Therapy

Infrared therapy delivers radiant dry heat from a lamp or far-infrared device positioned at a specified distance from the perineum. The proposed effects include local vasodilation, increased blood flow, muscle relaxation, and reduced pain perception. Dry exposure avoids soaking the wound and requires little contact with the perineal surface. Sessions can be brief and supervised in a postnatal unit, although the woman must assume a position that permits safe exposure while maintaining privacy.

Treatment parameters matter. Distance, duration, device output, skin pigmentation, sensation, circulation, and environmental temperature influence the dose received. Excessive heat or poor positioning can cause burns, dryness, dizziness, or discomfort. Therapy should be delivered with calibrated equipment, a safe distance and exposure time, ongoing skin checks, and the ability to stop immediately. It is unsuitable when sensation is impaired or when staff cannot protect privacy and monitor temperature reliably.

Sitz Bath Therapy

A sitz bath involves sitting in a shallow basin of warm water so that the perineum is immersed. Warmth may increase local circulation and relax pelvic and perineal muscles, while water can provide a soothing sensation and gentle cleansing. The equipment is inexpensive and may be used in hospital or at home. Some women value the familiar bathing ritual and the opportunity for private self-care.

Sitz baths also create practical demands. The woman must be able to sit, transfer safely, prepare water at an appropriate temperature, clean the basin, and dry the perineum gently afterward. Poorly cleaned equipment or contaminated water can undermine hygiene. Very hot water can burn, and additives such as antiseptics, salts, or herbal products should not be assumed beneficial. Plain water and local clinical instructions are safer defaults unless a specific product has been recommended.

Comparative Evidence

A 2024 systematic review and meta-analysis compared dry- and moist-heat modalities for episiotomy pain and healing. Across 556 postnatal women, dry heat was associated with lower pain intensity and better REEDA scores than moist heat, although the included studies varied in intervention type, protocol,



quality, and timing (Alirezai et al., 2024). The review supports dry heat as a promising option, but pooled estimates do not remove the limitations of small trials, nonuniform comparators, incomplete blinding, and differences in routine care.

Ramesh et al. (2024) conducted a randomized prospective parallel-arm study of 208 primiparous women assigned to far-infrared radiation (FIR) or sitz bath (SB) therapy. Pain, wound integrity, and pelvic-floor muscle tone were assessed using the VAS, REEDA, and Modified Oxford Scale (MOS). By six weeks, 90.4% of the FIR group and 88.5% of the SB group reported mild or no pain. On postpartum day two, favorable wound integrity was reported for 90.4% and 89.4%, respectively. Muscle-tone outcomes were also slightly better with FIR, but the reported group differences were not statistically significant. The numerical similarity suggests that both approaches may be acceptable rather than demonstrating clear superiority.

Earlier studies and narrative reviews have reported benefits for both interventions, with some favoring infrared therapy and others favoring sitz baths (Choudhari et al., 2022). Conflicting findings may arise from different temperatures, exposure times, frequencies, baseline wound severity, analgesic use, outcome scales, and levels of supervision. Blinding participants is rarely feasible, so expectations may influence reported pain and satisfaction. Publication bias and limited reporting of adverse events further reduce certainty. Consequently, clinicians should avoid presenting either method as a guaranteed accelerator of healing.

The timing of assessment also changes interpretation. An intervention can reduce pain immediately after application without altering wound repair, whereas a lower REEDA score several days later may not translate into faster return to daily activity. Absolute differences, confidence intervals, adverse events, and analgesic consumption are therefore more informative than p values alone. Generalizability is another concern because many trials enrolled primiparous women with uncomplicated episiotomies in single institutions. Results may not apply to women with complex lacerations, wound infection, significant medical conditions, or limited post-discharge support.

Maternal Comfort and Perceptions

Women's perceptions can determine whether an apparently effective intervention is used correctly and consistently. Relevant experiences include immediate soothing, heat tolerance, embarrassment, privacy, fatigue, fear of harming stitches, ease of positioning, time away from the infant, and confidence in performing care at home. A sitz bath may feel gentle and familiar to one woman but unhygienic, painful, or logistically difficult to another. Infrared therapy may feel convenient and dry, yet expose the perineum in a way that causes discomfort or requires staff assistance.

Choice is also shaped by cultural practices, household facilities, family support, previous birth experiences, and access to equipment. Women recovering from instrumental birth, severe edema, anemia, urinary problems, or mobility limitations may have different needs from those with uncomplicated recovery. Clinicians should explain anticipated benefits, uncertainties, practical requirements, and warning signs in plain language. Respectful shared decision-making strengthens autonomy and may improve adherence without overstating efficacy.

Qualitative interviews can add information that pain scores miss. Open questions might explore which sensations changed, whether relief lasted, how treatment affected feeding or sleep, what caused inconvenience, and whether the woman would choose the intervention again. Reports should include



negative and neutral experiences, not only favorable testimonials. Perceived comfort is a legitimate outcome, but it should not be used as a substitute for clinical wound assessment.

Maternal satisfaction should also be interpreted within the care environment. A woman may rate infrared therapy highly because staff provided reassurance and protected her privacy, while dissatisfaction with a sitz bath may reflect an inaccessible bathroom rather than the moist-heat mechanism. Conversely, self-administered bathing may promote independence after discharge. Studies should record who delivered treatment, the degree of assistance, waiting time, interruptions, cleanliness, and whether infant-care responsibilities affected completion. These contextual variables help translate trial findings into realistic postnatal services.

Safety and Supportive Postnatal Care

Neither infrared therapy nor a sitz bath should stand alone. Core care includes regular assessment, hand and perineal hygiene, clean absorbent pads, adequate nutrition and hydration, prevention of constipation, appropriate analgesia, and advice on activity. Paracetamol or a nonsteroidal anti-inflammatory drug (NSAID) may be used when clinically appropriate and compatible with the woman's health and breastfeeding plan. Cold applications can offer short-term pain relief during the early inflammatory period, although the certainty of evidence is limited (East et al., 2020).

Women should be told when and how to seek help. Increasing pain, fever, foul-smelling or purulent discharge, spreading redness, wound separation, urinary retention, heavy bleeding, or worsening swelling requires professional assessment (NHS, 2023). Persistent dyspareunia, pelvic-floor symptoms, continence problems, or pain beyond expected healing should also be reviewed. Complementary heat therapy must never delay antibiotics, drainage, resuturing, analgesic adjustment, or specialist referral when these are indicated.

Implications for Nursing and Midwifery Practice

Nurses and midwives are central to assessment, education, safe administration, and follow-up. A standardized protocol should define eligibility, device or water temperature, duration, frequency, positioning, privacy measures, cleaning, documentation, and stopping criteria. Baseline pain and REEDA findings should be recorded before treatment and reassessed at consistent intervals. Staff should distinguish statistical significance from a change that women can feel or that alters clinical management.

Where both methods are available, the decision can be individualized. Infrared therapy may suit a woman who prefers a dry, supervised, time-limited treatment. A sitz bath may suit someone who finds immersion soothing and can manage the equipment safely. Cost analyses should include staff time, cleaning, device maintenance, space, and home feasibility rather than the purchase price alone. Local protocols should be updated as higher-quality evidence becomes available.

Research Priorities

Future randomized controlled trials (RCTs) should use adequate allocation concealment, masked wound assessors, standardized protocols, intention-to-treat analysis, and predefined clinically important outcomes. Follow-up should extend beyond hospital discharge to detect infection, wound separation, persistent pain, pelvic-floor symptoms, and delayed return to usual activity. Trials should report co-interventions, including analgesics, antibiotics, cold therapy, and hygiene education.



Mixed-methods studies would be especially useful. Quantitative comparisons of pain, REEDA scores, healing time, adverse events, and analgesic use can be integrated with interviews about privacy, comfort, burden, cultural acceptability, and perceived control. Such integration can explain why an intervention with modest average benefit may be highly valued by some women and rejected by others.

Conclusion

Infrared therapy and sitz baths are plausible non-pharmacological options for postpartum episiotomy discomfort and wound care. Current pooled evidence favors dry heat, but comparative trials remain heterogeneous, and a large 2024 randomized study found only small differences between FIR and SB outcomes. Clinical choice should therefore combine available evidence with wound status, safety, resources, feasibility, and the woman's informed preference. Both interventions must remain adjuncts to comprehensive postnatal assessment, hygiene, analgesia, education, and timely management of complications. Research that values maternal experience alongside objective healing will provide the most useful basis for respectful, effective care.



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