

# Evidence summary: Wound management in low resource communities: Green tea for managing malodorous wounds

Emily Haesler<sup>1, 2,3</sup>

Robin Watts<sup>4</sup>



1. Adjunct Professor, Curtin Health Innovation Research Institute, Wound Healing and Management (WHAM) Collaborative, Curtin University, Perth, Australia
2. Adjunct Associate Professor, Australian Centre for Evidence Based Aged Care, La Trobe University, Melbourne, Australia
3. Honorary Senior Lecturer, Australian National University Medical School, Australian National University, Canberra, Australia
4. Emeritus Professor, Western Australian Group for Evidence Informed Healthcare Practice, Curtin University, Perth, Australia

## CLINICAL QUESTION

What is the best available evidence regarding green tea for managing wound odour?

## KEYWORDS

Chronic wounds, wound odour, green tea

## SUMMARY

Malignant fungating wounds (MFWs) are known to be particularly malodorous as a result of metabolic processes that occur as bacteria breaks down necrotic tissue.<sup>1</sup> Wound odour has a negative psychosocial impact on patients as it is related to anxiety and stress; feelings of disgust and poor body image; and social isolation and loneliness.<sup>2</sup> A systematic review concluded that the wound care products that were most effective in reducing wound odour (reported as providing a 'moderate' level of evidence) were metronidazole gel, an absorbent dressing impregnated with sodium chloride, activated-charcoal dressings and cucumin.<sup>3</sup> However, most of these products are difficult to access and cost prohibitive in low resource countries. Although there is a paucity of published evidence, green tea has been used effectively to reduce

the unpleasant odour of MFWs, and improve quality of life for patients.<sup>1, 2</sup> Level 1 evidence<sup>1</sup> and Level 2 evidence<sup>2</sup> for papaya pulp dressings demonstrated an improvement in wound tissue type. Level 3 evidence<sup>3-5</sup> suggested papaya pulp dressings were associated with improvement in wound tissue type, reasonable healing rates and reduction in requirement for further surgical interventions. Level 1 evidence<sup>6-9</sup> for commercial papain products showed improvements in wound tissue type<sup>6, 7</sup> and reduction in wound surface area<sup>8, 9</sup>. Other Level 1 evidence<sup>10</sup> failed to demonstrate effectiveness, and Level 4 evidence was mixed.<sup>10-12</sup>

## CLINICAL PRACTICE RECOMMENDATIONS

All recommendations should be applied with consideration to the wound, the person, the health professional and the clinical context.

**When manufactured odour absorbing or controlling dressings or pharmaceutical agents are not available, the use of unused green tea bags in the dressing of a malignant fungating wound provides a culturally acceptable, cost-effective option for containment of wound odour (Grade B).**

**Reduction in wound odour is related to positive patient outcomes including a reduction in social isolation, an uplift in mood and increase in appetite.**

## SOURCES OF EVIDENCE

This evidence summary is based on a structured search of the literature and selected evidence-

**Table 1: Levels of evidence for clinical studies**

Level 1 Evidence	Level 2 Evidence	Level 3 Evidence	Level 4 Evidence	Level 5 Evidence
None	None	None	4.c case series <sup>1</sup> 4.d case study <sup>2</sup>	None

based health care databases (including developing countries health care journals) combining search terms that describe wound management and both green and black tea. Keywords: wound care, low cost, traditional, green tea, odour, alternate (complementary) therapies; malignant fungating wounds (MFWs). Retrieved studies were appraised for relevance and rigour using Joanna Briggs Institute appraisal tools.<sup>4</sup>

## CLINICAL EVIDENCE

### Reduction in wound odour

In series of case studies (n = 4) women with MFW of the breast all reported reduction in wound odour during and after dressing changes when green tea bags were applied. Although odour was measured using a 5-point visual analogue scale, the specific level of odour reduction was not reported<sup>1</sup> (*Level 4*).

### Reduction in exudate

In one case study, use of green tea bags as a component of the dressing for a MFW of the breast reduced the level of exudate. Green tea bags were reported to absorb up to five times their weight (i.e. 35 to 40g)<sup>1</sup> (*Level 4*).

### Acceptability

Culturally. Case studies indicate that use of green tea bags on a MFW of the breast is culturally acceptable to Indonesian<sup>2</sup> and Malay women<sup>1</sup> (*Level 4*).

Body image. One woman ceased using a green tea bag dressing due to its unacceptable bulkiness<sup>1</sup> (*Level 4*).

### Other benefits

In one case study, use of tea bags was associated with an increase in patient appetite due to a reduction in the odour associated with a MFW of the breast.<sup>1</sup> Patients reported satisfaction with the treatment and a positive impact on mood<sup>1</sup> (*Level 4*).

### Contraindications and side effects

- No contraindications or physical side effects have been reported in the published literature.
- Tea should not be applied directly to the wound<sup>2</sup> (*Level 4*).

## RECOMMENDED DRESSING PRACTICE

### Patient Preparation

Consider need for appropriate comfort measures and pain control. If analgesia is required, administer at least 20 minutes prior to procedure.

### Procedure

1. Perform hand hygiene.
2. Decontaminate work surface.
3. Prepare a clean surface with sterile sheets or dressing pack and prepare equipment.
4. Perform hand hygiene.
5. Using disposable glove or forceps remove the old dressing and discard.

### Swabbing technique

1. Working from the inside to the outside of the area and dealing with the cleaner parts first, swab the wound with wound swabbing solution until it is clean. Consider irrigating cavities or complex wounds (see below).
2. Dry area with a dry gauze swab. Do not use cotton wool as this can deposit strands that will stick to the cleaned area.

### Assess the wound

Inspect the wound for signs of deterioration, infection and/or pain/discomfort.

### Apply the dressing

1. Apply an appropriate contact dressing.
2. Apply unused dry leaf green tea bags<sup>1, 2</sup> (these may be enclosed in a piece of gauze)<sup>1</sup>.
3. Cover with absorbent padding<sup>1</sup>.
4. Apply stretchable tube bandage or adhesive tape to hold dressing and tea bags in place<sup>1, 2</sup>.
5. Tea bags should be changed before wound exudates strikes through the absorbent padding<sup>1</sup>.

### Documentation

Document the findings in the patient progress notes. Report any concerns to the treating clinician's team promptly.

## Irrigation technique

1. Fill a syringe with a large bore needle (18g or 19g) with wound irrigation solution. (N.B. hydrogen peroxide should not be used to irrigate wounds under pressure)
2. Holding the syringe just above the wound's top edge, instill irrigation fluid into the wound slowly and continuously. Use enough force (4-15psi) to flush out debris.
3. Irrigate all portions of the wound. Do not force solution into the wound's pockets.
4. Continue irrigating until the solution draining from the wound bed is clear.

## CONFLICTS OF INTEREST

The author declares no conflicts of interest in accordance with International Committee of Medical Journal Editors (ICMJE) standards.

## REFERENCES

1. Yian, L., Case study on the effectiveness of green tea bags as a secondary dressing to control malodour of fungating breast cancer wounds. *Singapore Nursing Journal*, 2005. **32**(2): p. 42-8.
2. Leng, N. and L. Yian, A case report of an innovative strategy using tea leaves in the management of malodourous wound. *Singapore Nursing Journal*, 2002. **29**(3): p. 16-8.
3. da Costa Santos CM, de Mattos Pimenat CA, Nobre MR. A systematic review of topical treatments to control the odour of malignant fungating wounds. *J Pain Symptom Manage*. 2010; **39**(6): 1065-107.
4. The Joanna Briggs Collaboration. *Handbook for Evidence Transfer Centers – Version 4*. The Joanna Briggs Institute, Adelaide. 2013.