

**Bibliographic References (Last 5 Years on Neem and Skin Lesions, Ulcers, and Diabetic Foot)**

1. **Plant Leaves Extract Irrigation on Wound Healing in Diabetic Foot Ulcers** – Muthu S. Jayalakshmi, P. Thenmozhi, R. Vijayaraghavan (2021). *Evid Based Complement Alternat Med.* 2021 (Article ID 9924725).
**Abstract**: A quasi-experimental study on 100 patients with diabetic foot ulcers (DFU) treated with Neem leaf extract irrigation vs saline solution. The Neem group showed a significantly greater reduction in the wound healing score (PUSH score, p<0.001) compared to the control group.

No systemic complications were observed in the Neem group. The authors conclude that Neem leaf extract solution is safe and can be used as an alternative to saline solution for DFU irrigation.
**Link**: PubMed PMC (open access). ( [Plant Leaves Extract Irrigation on Wound Healing in Diabetic Foot Ulcers - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC8131136/#:~:text=Results)

1. **Hypericum perforatum and Azadirachta indica (Neem) Oil in the Management of Chronic Leg Ulcers: An Uncontrolled Retrospective Observational Case Review** – Lisa Turk, Tobias Thuile, Valentina De Marzi, Giovanni Antonacci, Mario Puviani, Klaus Eisendle (2021). *Italian Journal of Wound Care*, 5(2), 2021.
**Abstract**: A retrospective uncontrolled study on 16 patients (median age 71 years) with chronic lower limb ulcers treated with a Neem and St. John’s Wort oil-based dressing. All 16 ulcers (7 on the leg, 9 on the foot) healed completely within a median of 82 days (mean 85, range 14–180 days). No side effects were observed; the treatment was painless and even reduced local pain perception. The authors highlight that Neem and St. John’s Wort-based dressings are well tolerated and could be an additional treatment option for chronic ulcers, while stressing the need for prospective controlled studies to confirm these findings.
**Link**: Open access article (PDF).

 [Hypericum perforatum and Azadirachta indica (Neem) oil in the management of chronic leg ulcers: An uncontrolled retrospective observational case review | Italian Journal of Wound Care](https://www.ijwc.it/site/article/view/79#:~:text=feed,needed%20to%20confirm%20these%20observations) ). *Link:* Articolo open access (PDF) ( [Hypericum perforatum and Azadirachta indica (Neem) oil in the management of chronic leg ulcers: An uncontrolled retrospective observational case review | Italian Journal of Wound Care](https://www.ijwc.it/site/article/view/79#:~:text=Chronic%20nonhealing%20leg%20ulcers%20are,on%20Hypericum%20perforatum%20and%20Azadirachta) ) ( [Hypericum perforatum and Azadirachta indica (Neem) oil in the management of chronic leg ulcers: An uncontrolled retrospective observational case review | Italian Journal of Wound Care](https://www.ijwc.it/site/article/view/79#:~:text=indica%20%28Neem%29%20oil,needed%20to%20confirm%20these%20observations)

1. **Hypericum and Neem Oil for Dehisced Post-Surgical Wounds: A Randomised, Controlled, Single-Blinded Phase III Study** – Raimondo Arena, Maria G. Strazzeri, Tommaso Bianchi, Angela Peghetti, Yuri Merli, Diego Abbenante, Diletta Olivari (2022). *Journal of Wound Care*, 31(6): 492–500, 2022.
**Abstract**: A randomized controlled clinical trial (phase III, single-blinded) on 99 patients with infected or colonized dehisced surgical wounds, comparing a Neem and St. John’s Wort oil-based dressing (1PWD) with silver dressings. After 28 days, both groups showed comparable improvements in wound healing scores (BWAT, inflammation/infection signs resolved similarly in both groups, p=0.35). However, the Neem/St. John’s Wort group experienced a significantly greater reduction in pain compared to the silver group (statistically significant difference, p<0.0001). The study concludes that the Neem/St. John’s Wort dressing was as effective as silver in managing complicated surgical wounds, with the added benefit of better pain control.
**Link**: PubMed abstract (full text available for purchase).



1. **Combination of St. John’s Wort Oil and Neem Oil in Pharmaceuticals: An Effective Treatment Option for Pressure Ulcers in Intensive Care Units** – Samet Özdemir, Saber Y. Bostanabad, Ayhan Parmaksız, Halil C. Canatan (2023). *Pharmaceuticals (Basel)* 16(3): 377, 2023.
**Abstract**: An open-access pilot study on the application of an ointment containing Neem and St. John’s Wort oil in three intensive care patients with pressure ulcers. The ointment was applied daily for 42 days. At the end of the study, macroscopic and histopathological evaluations showed marked tissue regeneration in all treated patients. Post-treatment biopsies revealed hyperplastic epithelium with neovascularization, indicative of advanced healing. The authors conclude that the combination of Neem and St. John’s Wort provided significant benefits in supporting pressure ulcer healing in critical patients and propose herbal-based ointments as a promising alternative to conventional treatments for pressure ulcers in intensive care settings.
**Link**: PMC open access article.

( [Combination of St. John’s Wort Oil and Neem Oil in Pharmaceuticals: An Effective Treatment Option for Pressure Ulcers in Intensive Care Units - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10054705/#:~:text=taken%20on%20the%20first%20and,have%20PUs%20in%20the%20ICUs) ). *Link:* Articolo PMC (open access) ( [Combination of St. John’s Wort Oil and Neem Oil in Pharmaceuticals: An Effective Treatment Option for Pressure Ulcers in Intensive Care Units - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10054705/#:~:text=pressure%20ulcers%20,suggested%20as%20an%20efficient%20active) ) ( [Combination of St. John’s Wort Oil and Neem Oil in Pharmaceuticals: An Effective Treatment Option for Pressure Ulcers in Intensive Care Units - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10054705/#:~:text=taken%20on%20the%20first%20and,have%20PUs%20in%20the%20ICUs)

1. **Current Scenario of Traditional Medicines in Management of Diabetic Foot Ulcers: A Review** – Abhijit S. Rayate, Basavraj S. Nagoba, Sachin S. Mumbre, Hardik B. Mavani, Ajay M. Gavkare, Advait S. Deshpande (2023). *World Journal of Diabetes* 14(1): 1–16, 2023.
**Abstract**: This review discusses the use of traditional medicine in the treatment of diabetic foot ulcers, including various herbal remedies used in different cultures. Ayurvedic medicine preparations such as *Jatyadi Tailam*—a medicated oil containing Neem (*Azadirachta indica*) and other herbs—are traditionally used to promote wound healing. The authors highlight that natural products like honey, Aloe vera, Neem oil, Calendula, etc., are commonly used to control local infections and promote healing in diabetic ulcers. However, they emphasize that many of these remedies still lack strong clinical trial support. While some recent *in vitro* and *in vivo* studies confirm the antimicrobial and pro-healing properties of these substances, the review concludes that further controlled clinical trials are needed to scientifically validate the efficacy of Neem-based and other phytotherapeutic treatments for diabetic foot ulcers.
**Link**: Open access article (WJD).

([Current scenario of traditional medicines in management of diabetic foot ulcers: A review](https://www.wjgnet.com/1948-9358/full/v14/i1/1.htm#:~:text=Rayate%20AS%2C%20Nagoba%20BS%2C%20Mumbre,16%20%5BPMID%3A%20PMC9850800%20DOI%3A%2010.4239%2Fwjd.v14.i1.1)) ([Current scenario of traditional medicines in management of diabetic foot ulcers: A review](https://www.wjgnet.com/1948-9358/full/v14/i1/1.htm#:~:text=Jatyadi%20tailam,Kumari%20oil%2C%20and%20Sesame%20oil)

1. **Acknowledging the Use of Botanicals to Treat Diabetic Foot Ulcers During the 21st Century: A Systematic Review** – Illora Narzary, Amit Swarnakar, Mrinal Kalita, Sushil K. Middha, et al. (2023). *World Journal of Clinical Cases* 11(17): 4035–4059, 2023.
**Abstract**: A systematic review (2000–2022) of clinical studies and case reports on the use of medicinal plants for treating diabetic foot ulcers, with particular attention to Neem (*Azadirachta indica***). The review highlights promising results obtained with *Hyperoil™*, a topical preparation containing Neem and St. John’s Wort oil: an Italian study on 16 patients with severe diabetic ulcers (including bone-exposing wounds) treated at home with *Hyperoil™* reported complete healing** within 2–10 months. During this period, patients experienced reduced ulcer pain, improved glycemic control (decreasing HbA1c), and better blood pressure regulation. Another case report discussed in the review describes a patient with an infected diabetic foot ulcer who achieved an exceptionally positive outcome using Neem/St. John’s Wort oil, avoiding surgical interventions. The review concludes that Neem-based preparations (often in combination with other phytocomponents) could be a cost-effective and potentially efficient home-management option for diabetic ulcers, provided that strict glycemic control is maintained. However, further controlled clinical trials are necessary to confirm these preliminary findings.
**Link**: PMC open access article.

 [Acknowledging the use of botanicals to treat diabetic foot ulcer during the 21st century: A systematic review - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10303622/#:~:text=%28Hyperoil,was%20due%20to%20improved%20glycemic) ) ( [Acknowledging the use of botanicals to treat diabetic foot ulcer during the 21st century: A systematic review - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10303622/#:~:text=extract%20,cost) ). Si ribadisce comunque la necessità di ulteriori studi clinici controllati per confermare questi risultati preliminari. *Link:* Articolo PMC (open access) ( [Acknowledging the use of botanicals to treat diabetic foot ulcer during the 21st century: A systematic review - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10303622/#:~:text=promoted%20wound%20healing%20by%20boosting,use%20of%20a%20Hypericum%20flower) ) ( [Acknowledging the use of botanicals to treat diabetic foot ulcer during the 21st century: A systematic review - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10303622/#:~:text=extract%20,cost)

1. **Healing of Diabetic Foot Ulcer with Topical and Oral Administrations of Herbal Products: A Systematic Review and Meta‐Analysis of Randomized Controlled Trials** – Mina Zamanifard, Morteza Nasiri, Fatemeh Yarahmadi, Sahar Zonoori (2024). *International Wound Journal* 21(2): e14760, 2024.
**Abstract**: This meta-analysis examined 28 recent randomized controlled trials (RCTs) on the use of herbal products (both topical and oral) as adjuvants in diabetic foot ulcer healing. Among the remedies evaluated, one included RCT specifically investigated Neem leaf extract: in that trial, daily irrigation of ulcers with Neem solution resulted in a significantly better overall healing score compared to irrigation with saline alone. The meta-analysis found evidence supporting the efficacy of some herbal-based treatments—such as olive oil dressings, which significantly increased the complete healing rate compared to controls. The additional use of plant extracts (such as Neem, *Momordica charantia* / bitter melon, curcumin, etc.) appears to be a promising approach for managing DFUs. However, the authors caution that the methodological quality of many studies is limited, and the heterogeneity among evaluated remedies is high. Therefore, further rigorous RCTs are needed to draw definitive conclusions on the effectiveness of Neem and other phytotherapies for diabetic ulcers.
**Link**: Available on PMC (open access).

( [Healing of diabetic foot ulcer with topical and oral administrations of herbal products: A systematic review and meta‐analysis of randomized controlled trials - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10867296/#:~:text=%282%20RCTs%3B%20risk%20ratio%20,regarding%20the%20use%20of%20herbal) ). *Link:* Articolo disponibile su PMC ( [Healing of diabetic foot ulcer with topical and oral administrations of herbal products: A systematic review and meta‐analysis of randomized controlled trials - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10867296/#:~:text=This%20systematic%20review%20aimed%20to,Out%20of%201166) ) ( [Healing of diabetic foot ulcer with topical and oral administrations of herbal products: A systematic review and meta‐analysis of randomized controlled trials - PMC](https://pmc.ncbi.nlm.nih.gov/articles/PMC10867296/#:~:text=retrieved%20records%2C%2028%20RCTs%20were,based%20on%20qualitative%20synthesis%2C%20the)