NATROX® O_2
Key Evidence

SPARTAN® MEDICAL

STUDY	OUTCOMES	REFERENCE	LINKS
Systematic review and meta-analysis · n = 4,826 · 57 RCTs analyzed on diabetic foot ulcer (DFU), 5 specifically on Topical Oxygen Therapy (TOT)	· Observations compared to standard of care (SOC) showed higher ulcer healing rates with TOT	OuYang H, et al. (2024) Effects of different treatment measures on the efficacy of diabetic foot ulcers. *Front Endocrinol*, 15:1452192.	bit.ly/TOT_MA
Systematic review and meta-analysis · n = 692 · n = 7 RCTs analyzed, and 2 controlled observational studies (n=111)	· Rate of healed wounds was 25.8% in the control group and 43.25% in the adjuvant TOT group · Significant decrease in the percentage of wound area was found in the TOT group in RCT studies · Rate of healed wounds in the observational studies was 37.5% in the standard care group and 80.95% in the adjuvant TOT group	Putri IL, et al. (2024) Int Wound J, 21(7): e14960.	bit.ly/TOT_MA
Systematic review and meta-analysis · n = 1,823 · 31 RCTs analyzed (DFU, venous leg ulcer (VLU), pressure injury, trauma wound)	Pooled effects of 31 studies comparing patients treated with and without oxygen. Those treated with oxygen had: · better short-term wound healing · a higher percentage reduction in the ulcer area · lower amputation rates · a shorter wound healing time · higher post-study TcPO2	Du X, et al. (2024) Effects of Oxygen Therapy on Patients with a Chronic Wound. *Adv Skin Wound Care*, 37(5):1-9.	bit.ly/TOT_MA
Systematic review and meta-analysis · n = 4,998 · 22 articles reviewed (DFU, PI, VLU, surgical, & other wounds)	· 7 double-armed: Healing rates, n= 725. Significant difference in TOT group that healed (95% CI; p=<.001) · 9 single-armed: 1,195/4,273 completely healed (95% CI; p= <.001) · 2 double-armed: Wound recurrence in 101 patients included decreased recurrence rate in TOT group (95% CI; p=<.001)	Nagarsheth K, et al. (2024) Systematic review of the effects of topical oxygen therapy on wound healing. JVS-Vascular Insights, 2:100051.	bit.ly/TOT_MA
Systematic review and meta-analysis · n = 494 · 4 RCTs analyzed (DFU)	· TOT recognized as a potential adjunctive therapy for DFU treatment · A random-effects meta-analysis of four RCTs showed that TOT improved wound healing at 12 weeks over SOC alone · The overall GRADE level of evidence for TOT was moderate	Carter M, et al. (2022) Efficacy of Topical Wound Oxygen Therapy in Healing Chronic Diabetic Foot Ulcers. *Adv Wound Care,* 12(4):177-86.	bit.ly/TOT_MA
Systematic review and meta-analysis · n = 492 · 4 RCTs analyzed (DFU)	· TOT increased the likelihood of healing by 59% within 12 weeks · Use of adjunctive TOT significantly increased healing rate	Sethi A, et al. (2022) Topical oxygen therapy for healing diabetic foot ulcers. *Health Sci Rev,* 3:100028.	bit.ly/TOT_MA
Systematic review and meta-analysis · n = 614 · 7 RCTs analyzed (DFU)	· Existing evidence suggests that TOT is effective and safe for chronic DFUs · Compared with the control group, the TOT group had a higher healing rate	Sun XK, et al. (2022) Efficacy and safety of topical oxygen therapy for diabetic foot ulcers. *Int Wound J*, 19(8):2200-9.	bit.ly/TOT_MA
Systematic review and meta-analysis · n = 530 · 6 RCTs analyzed (DFU)	· Meta-analysis suggests TOT significantly increased likelihood of ulcer healing compared to controls	Thanigaimani S, et al. (2021) Topical oxygen therapy for diabetes-related foot ulcers. *Diabet Med,* 2021;00:e14585.	bit.ly/TOT_MA
Systematic review and meta-analysis · 4 RCTs analyzed (DFU)	· DFUs are >2x more likely to heal with TOT than SOC alone · Time to 50% DFU closure was significantly shorter for participants who received TOT	Connaghan F, et al. (2021) Impact of topical oxygen therapy on diabetic foot ulcer healing rates. *J Wound Care,* 30(10):823-9.	bit.ly/TOT_MA

Systematic Reviews and Meta-Analyses of RCTs | RCTs | Cohort Studies | Case Series | Case Reports / Case Studies | Editorials / Expert Opinion | Pre-clinical work

STUDY	OUTCOMES	REFERENCE	LINKS
Randomized control trial (RCT) · 12-week study period · n = 145 (DFU) · Mean wound duration: 24 weeks	· Intention-to-treat analysis, 18/64 (28.1%) patients healed in the SOC group at 12 weeks compared with 36/81 (44.4%) in the SOC plus NATROX® O_2 (p=0.044) · Per protocol analysis, 52% healed in the NATROX O_2 arm which had a 71% greater healing rate and a 73% greater reduction in wound size compared to the control group	Serena TE, et al. (2021) Topical oxygen therapy in the treatment of diabetic foot ulcers: a multicentre, open, randomised controlled trial. *J Wound Care,* 30(Sup5):s7-14.	bit.ly/RCT-PS22
Prospective RCT · 8-week study period · n = 20 (DFU) · Mean baseline wound duration (MBD): 76 weeks	· Decrease in wound size noted at 2 weeks with continuous topical oxygen therapy (cTOT) (p<0.016) · 90% of cTOT-treated wounds healed within 8 weeks, compared with 20% in the control group · 100% grade II and 50% grade III wounds healed with cTOT, compared to none with the control group	Yu J, et al. (2016) Topical oxygen therapy results in complete wound healing in diabetic foot ulcers. *Wound Repair Regen,* 24:1066-72.	bit.ly/RCT_Yu
Cohort study (Long-term follow-up study from the RCT) · n = 29 (DFU)	· 85% of NATROX® O_2 patients remained healed at 1 year vs. 60% of the control · Only one major amputation, which occurred on a control patient · Strong trend toward more durable closures in ulcers treated with cTOT	Al-Jalodi O, et al. (2022) A multicenter clinical trial evaluating the durability of diabetic foot ulcer healing in ulcers treated with topical oxygen and standard of care versus standard of care alone 1 year post healing. *Int Wound J,* 19(7):1-5.	bit.ly/DuraStdy
Retrospective case series · 6-week study period · n = 6 wounds, 5 patients (DFU, VLU)	· Mean wound area reduction in patient cohort undergoing therapy with cTOT and subsequent CAMPs was 74.7% and 76.1% at 4 and 6 weeks respectively · Mean healing time of 8 weeks with a mean number of 6 CAMP applications · Serial NIRS images showed an increase in tissue StO2 after 1 week	Wahab N, et al. (2024) Use of cTOT in Combination to Optimize the Chronic Wound Environment Prior to Cellular, Acellular, and Matrix-Like Product (CAMPs) Application: A Retrospective Case Series. *ePlasty*, 24:e64	bit.ly/NO2-CAMPs
Case series · n = 8 (DFU, leg ulcer)	· All patients showed improvement in wound progress within 2 weeks of initiating cTOT with 10-20% improvement	Elangovan P, et al. (2024) Topical Oxygen Therapy in Hard to Heal Wound - a Serial Case Study. [Poster] *IIWI Wound Conference.*	bit.ly/494G6Mz
Case series · n = 2 (DFU, amputation wound)	· Highlights synergies between hyperbaric oxygen therapy (HBOt) and continuous topical oxygen therapy (cTOT). · Case 1: NATROX® O_2 applied to a DFU after completion of HBOt. · Case 2: NATROX O_2 was initiated for a non-healing amputation wound while HBOt was authorized and used between dives once authorized.	Cole W, et al. (2024) Supplemental Oxygen Therapy in Wound Healing. *Podiatry M,* Nov/Dec:101-8.	bit.ly/SuppOT
Case series · n = 9 surgical wound dehiscence (SWD)	· Mean patient age = 52.6 years · (No. patients) w/ SWD grading: (3) w/ 3 , (3) w/ 3a, (3) w/ 4, all with various comorbidities · Avg. estimated wound surface area at start of cTOT = 19.5 cm_2 · Mean number of days from start of cTOT to healing = 52.6 · Authors believe that re-establishment of adequate blood and oxygen to the tissues, combined with the immunogenic properties of oxygen, supported rapid wound closure	Kormylo E, et al. (2024) Continuous topical oxygen therapy as part of the reconstructive ladder of limb salvage. [Poster] *SAWC Fall.*	bit.ly/NO2-SWD
Case series · 12-week study period · n = 12 (DFU, VLU, surgical, burn, arterial ulcer, mixed VLU, pressure injury)	· Six wounds healed in the study · Mean time to healing: 11.7 weeks · Reduction in wound area demonstrated in all 12 wounds with 78.6% mean reduction over the study. · Pain score reduction in 5/6 wounds by mean of 3.6 visual analog score (VAS)	Naude L, et al. (2024) The role of continuous Topical Oxygen Therapy (cTOT) as an adjunctive treatment in non-healing chronic wounds; A South African perspective. [Poster] *SAWC Spring.*	bit.ly/cTOT-S-Africa
Pilot case series · 6-week study period · n = 5 (DFU, VLU, trauma wound) · MBD = 32 weeks	· Mean patient age = 75.8 years · Near-infrared spectroscopy (NIRS) revealed increased tissue oxygenation as wound measurements showed a decrease in wound size · During the 6-week study period, 3 of 5 patients healed completely · Final 2 healed shortly after with continuation of NATROX O_2	Cole W, et al. (2024) Monitoring the Effect of Continuous Topical Oxygen Therapy with Near-Infrared Spectroscopy: A Pilot Case Series in Wound Healing. *Wounds,* 36(5):154-9.	bit.ly/DrColePost
Case series · 12-week study period · n = 8 (DFU)	· Mean percentage area reduction 92.0% · 54.0% increase in the number of clinical interactions*, whereas clinical time was reduced by 25.8%** · Health status scores improved across all eight patients **Clinical interactions consisted of self-assessment, video assessments with the clinician, and face-to-face interactions in clinic* ***Results were achieved using NATROX O_2 along with an Advanced Digital Wound Care Platform-telehealth system*	Lee A, et al. (2024) Remote assessments and monitoring with advanced wouth therapy to optimise clinical outcomes, access, and resources. *J Wound Care,* 33(2):90-101.	bit.ly/NO2-NIQ
Case series · 4-week study period · n = 3 (Leg ulcers, pressure injuries)	· Highlights beneficial impact of cTOT in various hard-to-heal wounds in patients following cardiac surgery · Wounds include a long-duration leg ulcer, a dehisced sternotomy wound, and a saphenous vein harvest site · All wounds achieved a reduction in pain full closure	Goncalves, V. (2024) Topical Oxygen Therapy in Hard-to-Heal Wounds in Cardiac Surgery. [Poster] *SAWC Spring.*	bit.ly/NO2-CVsurg

Systematic Reviews and Meta-Analyses of RCTs | RCTs | Cohort Studies | Case Series | Case Reports / Case Studies | Editorials / Expert Opinion | Pre-clinical work

STUDY	OUTCOMES	REFERENCE	LINKS
Case series · n = 3 (Radiation Tissue Necrosis)	· Patients commenced cTOT after failing multiple other advanced wound therapies · All 3 patients relayed a decrease in wound pain · Average time to complete epithelialization was 3.6 weeks	Cole W, et al. (2023) Management of late radiation tissue injury ulcers with continuous topical oxygen therapy supports wound healing in patients of advanced age following Mohs surgery: a case series. *Wounds,* 35(12):E420-4.	bit.ly/RadiationWounds
Case series · 12-week study period · n = 33 (DFU, VLU)	· 13 patients healed in the 12-week study, with a mean time to healing of 10.9 weeks · 3 wounds healed within 4 weeks of cTOT · 30 wounds demonstrated a reduction in area with a 78% mean reduction over the study	Nair HKR, et al. (2023) The Efficacy of Continuous Topical Oxygen Therapy in the Treatment of Challenging Diabetic Foot Ulcers: A Case Series. [Poster] *GWC.*	bit.ly/NO2_Efficacy-DFU
Case series · 12-week study period · n = 6 (Texas Grade 2/3DFU) · MBD: 2.3 months	· 3 patients healed within the study period, 2 healed in the subsequent 4 weeks · 6th patient with a very large wound (22 cm x 4.5 cm) achieved a 95% reduction in wound area · All patients reporting pain at the commencement of therapy reported scores of 0 prior to complete healing	Nair HKR. (2023) Case series examining the efficacy of continuous topical oxygen therapy in the treatment of diabetic foot ulcers. [e-Poster] *EWMA*.	bit.ly/nwc-cs-drhariMay23
Case series · 12-week study period · n = 8 (DFU, trauma) · MBD: >4 months	· 50% of patients had moderate-to-severe MAC disease and/or previous amputations · 50% of patients had TcPO2 levels <40mm/Hg · Average of 96% reduction in wound size at conclusion of study	Lee A. (2023) Barriers Eliminated: An Advanced Digital Wound Platform Combined with a Continuous Topical Oxygen Therapy System Improves Access, Saves Time, and Decreases Wound Size in Complex Diabetic Patients. [Poster] *SAWC Spring.*	bit.ly/DrLeeSAWCSpring23
Case series · MBD: >15.5 months · n = 20 (VLU, arterial ulcer, mixed leg ulcer, other)	· 40% healed completely · 76% experienced substantial rapid pain relief · 69% stopped taking opioid medication · 53% became pain free · Average pain scores reduced from 8.2 to 1.9	Jebril W, et al. (2022) Topical oxygen treatment relieves pain from hard-to-heal leg ulcers and improves healing: a case series. *J Wound Care,* 31(1):4-11.	bit.ly/JWCJebril22_NWCweb
Case series (Observational study) · n = 200 (Arterial ulcer, DFU, VLU, pressure injury, other wounds)	· Study demonstrated that topically administered oxygen can increase healing in chronic wounds of all etiologies · Longer treatment times were associated with more effective wound healing, as evidenced by an average wound closure of 67.9% in VLUs treated for >25 days	Kaufman H, et al. (2021) Topical oxygen therapy used to improve wound healing in a large retrospective study of wounds of mixed aetiology. *Wounds Int,* 12(2):62-8.	bit.ly/3BCQrzB
Case series (Observational study) · n = 20 (DFU, amputation)	· 70% of all patients achieved >75% reduction in wound size · 91.3%, ±14.9% wound area reduction (p = 0.001) and mean time for 100% closure was 77.6, ± 32.5 days · Mean pain scores reduced from 2.4, ±1.8 to 0.5, ±1.0 (p = .008) · All patients were very satisfied using the ambulatory device	Tang TY, Mak MYQ, Yap CJQ, et al. (2021) An Observational Clinical Trial Examining the Effect of Topical Oxygen Therapy (Natrox™) on the Rates of Healing of Chronic DiAbetic Foot Ulcers (OTONAL Trial). Int J Low Extrem Wounds. 23(2):326-337.	bit.ly/3SKKk3N
Case series (Prospective pilot study) · 12-week study period · n = 5 (DFU: 3 slow/non-healing, 2 complex)	· During the study period, 3 of the 5 patients healed completely · All patients displayed an increase in oxygenated hemoglobin (mean improvement 31% over 3 weeks) · The other 2 healed shortly thereafter with the continuation of NATROX® O_2	Lee A. (2021) Continuous topical oxygen therapy- improving healing in the diabetic foot. [Poster] *DFCon.*	bit.ly/DrLeePoster
Case series · n = 6 (DFU) · Wound duration: ≥4 weeks	· Five DFUs healed in the 8-week follow-up period · Based on swab results, the microbiome of the 5 healed wounds shifted towards a diverse flora dominated by aerobes and facultative anaerobes, the one in the non-healed remained anaerobic	Hunter P, et al. (2020) Topical oxygen therapy shifts microbiome dynamics in chronic diabetic foot ulcers. *Wounds,* 32(3):81–5.	bit.ly/TOT_shifts
Case series · n = 3 (phlebostatic ulcer, cutaneous injury, DFU) · MBD: >2 years	· Case 1: Wound present for 910 days, healed in 65 days · Case 2: Wound present for 720 days, tendon covered completely with granulation tissue in 27 days · Case 3: Wound present for 720 days, healed in 23 days · Median visual analog score (VAS) was 10 on commencement of therapy, all patients reported a drastic reduction of their VAS during course of therapy	Silvestrini S, et al. (2019) Oxygen Wound Therapy Device: Continuous flow of pure humidified oxygen for the treatment of infected and inveterate wound in the time of antibiotic-resistance - case report. [Poster] *EWMA*.	bit.ly/Poster_EWMA2019
Case series · n = 8 (complex DFU) · MBD: 47 weeks	· Following an average of 11.7 weeks of therapy, 7 patients healed completely · The remaining patient demonstrated a 95% reduction in wound size	Nair HKR. (2019) Evaluating the outcomes of eight patients with diabetic foot ulcers using a new topical oxygen delivery device. *Wounds Asia*, 2(1):38-43.	bit.ly/CRDrHari

Systematic Reviews and Meta-Analyses of RCTs | RCTs | Cohort Studies | Case Series | Case Reports / Case Studies | Editorials / Expert Opinion | Pre-clinical work

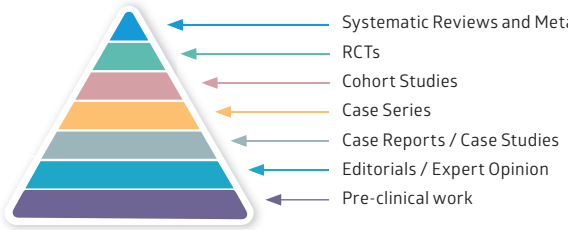
STUDY	OUTCOMES	REFERENCE	LINKS
Case series · n = 3 (DFU, non-healing with skin graft)	· (2) DFUs that had failed previous treatments, cTOT was commenced to reduce wound size and improve its condition to facilitate a skin graft · (1) non-healing wound with failed skin graft, wound continued to deteriorate, cTOT commenced with significant improvement realized after 21 days	Yip TT, et al. (2019) NATROX® Oxygen Wound Therapy: a vital element in wound healing. *Wounds Asia,* 10(1):44-7.	bit.ly/NO2_Vital-Element
Case series · n = 100 (DFU, VLU, arterial ulcer, pressure injury) · MBD: 15.2 months	· In patients treated for at least 3.5 weeks, 46% achieved complete closure; the mean percentage reduction in wound size for this subgroup was 76%, increasing to 83% for VLUs · In this subgroup, 47% of VLUs and 57% of DFUs and arterial ulcers closed	Kaufman H, et al. (2018) Topical oxygen therapy stimulates healing in difficult, chronic wounds: a tertiary centre experience. *J Wound Care,* 27(7):426–33.	bit.ly/NATKauf
Case series · n = 8 (DFU) · MBD: 14 months	· 5 of 8 patients had previous amputations · Average time to wound closure: 14.5 weeks · Wound with 48-month duration healed in 14 weeks	Wilson D, et al. (2018) Case series: Using NATROX® Oxygen Wound Therapy in the management of diabetic foot ulcers. *Wounds UK*: 4-11.	bit.ly/DFUSeries
Case series · n = 2 (DFU)	· Case 1: Forefoot amputation with necrosis and slough, at risk of foot amputation. Within 3 months of cTOT, granulation tissue, decreased size and pain, plan for skin graft closure · Case 2: Extended ray amputation with no progress for 4 weeks. After 31 days of cTOT, wound was over 95% re-epithelialized	Choke EC, et al. (2018) NATROX® - Let the topical oxygen flow for healing complex wounds. *Wounds Asia,* 1(2):30-3.	bit.ly/NO2_Tang2018
Case series (Registry study) · n = 42 (DFU) · MBD: 17 months	· At 24 weeks, 33% of wounds healed · All but two of the remaining wounds had reduced in size by 50%	Jones N, et al. (2017) The role of topical oxygen therapy in the treatment of diabetic foot ulceration. [Poster] 2017 *Wounds UK*.	bit.ly/Post_Jones
Case series (Non-randomized pilot study) · n = 10 (DFU) · MBD: 43 weeks	· At 8 weeks, one DFU had healed · The rest were improving; the mean ulcer size had reduced by 51%	Hayes P, et al. (2017) Topical oxygen therapy promotes the healing of chronic diabetic foot ulcers: a pilot study. *J Wound Care,* 26(11):652–60.	bit.ly/pilot_hayes
Case series · n = 5 (post-mastectomy wounds)	· 3 healed completely · 2 showed significant improvement	Leak K, et al. (2011) The use of topical oxygen therapy in complex surgical wounds. Data on file.	bit.ly/TOT-Leak
Case series · 6-week study period · n = 14 (VLU)	· No adverse events reported · Mean wound area reduced by 59% over 6 weeks	Mani R. (2010) Topical oxygen therapy for chronic wounds: a report on the potential of NATROX™ a new device for delivering enriched oxygen to chronic wounds. *J Wound Technol,* 9(3):28-30.	bit.ly/TOT-Mani
· Case study · n = 1 (pressure injury) · Wound duration of 7 months	· Patient was a Persons Living with Dementia (PLWD), a population who are vulnerable to developing wounds that are hard to heal because of their multifactorial aetiology · Full closure reached in under 11 weeks after the addition of cTOT	Hampton J, et al. (2025) Continuous Topical Oxygen Therapy used in a nursing home setting to promote closure of a non-healing pressure ulcer: A case study. [Poster] *SoTV.*	bit.ly/42UpsN0
· Case study · n = 1 (surgical wound dehiscence, SWD) · Wound duration of 4 months	· SWD following segmental mandibulectomy and closure of an oro-cutaneous fistula · Achieved full closure in 5 weeks with NATROX O_2	Camilleri A, et al. (2025) A Complex Surgical Wound Dehiscence Case Managed with Continuous Topical Oxygen Therapy. [Poster] *Wound Care Today.*	bit.ly/WCT_SWD
Case Study · n = 1 (DFU, amputation)	· One patient at risk for lower limb amputation with multiple painful, non-healing wounds · Medial malleolar wounds: healed in 6 weeks with 3/10 baseline VAS pain reduction to 0/10 by week 4 · Lateral & forefoot wound size reduction: 90% and 98% (respectively) by week 10 · Lateral & forefoot wound VAS pain reduction: 7/10 to 0/10 by week 4	Bailey-Davies S, et al. (2024) Promoting Healing of Chronic Wounds Using Continuous Topical Oxygen Therapy with Chronic Limb Threatening Ischaemia Having No Revascularisation Option: a Case Study. [Poster] *Wounds UK:* Harrogate.	bit.ly/3YS7Wqp
Case study · n = 1 (VLU) · Wound duration: 3 years	· Patient received 2 amniotic tissue graph applications, followed by 10 weeks of combination therapy with cTOT · At week 11, patient received cTOT without additional amniotic tissue graph applications · Total wound closure achieved at 19 weeks · Pain score reduced from 8/10 at initial evaluation to 0/10	Lorincy P. (2024) Combination therapy for a non-healing VLU [Case study] USA.	bit.ly/cTOT_CAMPs

Systematic Reviews and Meta-Analyses of RCTs | RCTs | Cohort Studies | Case Series | Case Reports / Case Studies | Editorials / Expert Opinion | Pre-clinical work

STUDY	OUTCOMES	REFERENCE	LINKS
Case report · n = 1 (VLU) · Wound duration: 2 months	· Wound measured 3.06 cm^2 at commencement · Pain reported at 10 out of 10 on the visual analog scale · Week 3: Patient was completely pain-free · Week 5: Wound reached complete closure with no pain	Cole W, et al. (2023) Supporting the Patient Journey: The Use of Topical Oxygen Therapy in Chronic Wound Management. [Poster] *GWC*.	bit.ly/NO2_Pt-Journey
Case report · n = 1 (DFU)	· Rapid growth and re-epithelization on the left leg wound after the introduction of NATROX® O_2 · Although advanced dressings may come at a higher cost, their ability to expedite wound healing can yield long-term economic benefits	Praveenan DR, et al. (2023) Holistic Approach to a Wound Care Patient. [Poster] *GWC*.	bit.ly/NO2_Holistic
Case study · n = 1 (painful leg ulcer) · Wound duration: 3 years	· 92-year-old male with mixed leg ulcer · On presentation, patient reported a high level of pain · Pain resolved completely upon commencement of cTOT	Wilson M. (2021) Painful non-healing leg ulcer. [Case study] Sweden.	bit.lyWilsonStudy
Case report · n = 1 (calciphylaxis wound)	· Biopsy confirmed non-healing calciphylaxis wound · Shelter-in-place orders issued due to the global COVID-19 pandemic · Leveraged telemedicine and NATROX® O_2 cTOT therapy to treat wound · Complete wound resolution occurred in 9 weeks	Cole W, et al. (2020) The Use of Topical Oxygen Therapy to Treat a Calciphylaxis Wound During a Global Pandemic: A Case Report. *Wounds*, 32(11):294-8.	bit.ly/CR_Calciphylaxis
Case study · n = 1 (pressure injury) · Wound duration: 12 months	· Wound area reduction of 76% in first 6 weeks, NATROX® O_2 was discontinued, patient returned to standard wound dressings · 4 weeks later, wound significantly deteriorated, NATROX O_2 recommenced · Completely healed after 12 weeks of NATROX® O_2 therapy	Non-healing pressure injury. [Case study]	bit.ly/CS1_NO2
Case study · n = 1 (trauma wound) · Wound duration: 24 weeks	· 76-year-old male · Complete wound closure in 5 weeks	Cheng LY. Non-healing traumatic wound. [Case study]	bit.ly/nwc-cs-nhtw_cheng
Case study · n = 1 (amputation wound) · Wound duration: 6 months	· 76-year-old male · Complete wound closure in 8 weeks	Cheng LY. Non-healing amputation wound. [Case study]	bit.ly/CS7_NO2
Expert opinion (American Diabetes Association)	· TOT awarded A-grade adjunctive treatment recommendation for DFUs · High participation [in TOT] with very few reported adverse events combined with improved healing rates makes this therapy another attractive option for advanced wound care	American Diabetes Association Professional Practice Committee (2025) Standards of Care in Diabetes. *Diabetes Care*, 48(Supplement_1):S259.	bit.ly/TOT-ADA
Expert opinion (Wound Healing Society-WHS DFU Guidelines Update)	· TOT is specifically recognized in new guidance and is supported by the highest level of evidence (Level 1) · "Guideline #7.9: Topical oxygen has been shown to increase the incidence of healing and decrease the time to heal. (Level 1)"	Lavery LA, et al. (2024) WHS (Wound Healing Society) guidelines update: Diabetic foot ulcer treatment guidelines. *Wound Repair Regen*, 32(1):34-46.	bit.ly/whs22023guidelines
Expert opinion (International Review Panel Consensus- US, UK, Europe)	· Evidence-based TOT recommendations from panel of 9 KOLs · Comprehensive guide as to role of oxygen in wounds and how TOT can help with non-healing wounds · Practical guidance on how to incorporate TOT into routine practice for challenging wounds	Frykberg R, et al. (2023) Use of topical oxygen therapy in wound healing. *J Wound Care*, 32(S8B)S3-30.	bit.ly/jwc-tot-2023
Expert opinion LATAM Consensus Review Panel	· Continuous transdermal oxygen therapy is effective and safe for treating chronic and hard-to-heal ulcers · Significant benefits observed: acceleration of healing, wound size reduction, enhancement in patient QoL · Efficacy found across various ulcer etiologies underscoring its therapeutic versatility	Pacheco YJ, et al. (2023) Expert consensus on clinical efficacy and guidelines on continuous topical oxygen therapy for the healing of complex or difficult- to-heal wounds. *JWC LATAM*, Oct. 2023:1-37.	bit.ly/nwc-JwcLatamOct23

Systematic Reviews and Meta-Analyses of RCTs | RCTs | Cohort Studies | Case Series | Case Reports / Case Studies | Editorials / Expert Opinion | Pre-clinical work

STUDY	OUTCOMES	REFERENCE	LINKS
Expert opinion (IWGDF Guidelines)	· Consider the use of topical oxygen as an adjunct therapy to standard of care for wound healing in people with diabetes-related foot ulcers where standard of care alone has failed and resources exist to support this intervention	International Working Group on the Diabetic Foot- IWGDF. (2023) Guidelines on interventions to enhance healing of foot ulcers in people with diabetes. *IWGDF Guidelines*, May 2023.	bit.ly/nwc-iwdgf-guidelines2023
Expert opinion (Central and Eastern Europe)	· Clear consensus that adjunctive treatments with a solid evidence base, including NPWT and TOT, must be included in the [pending] algorithm · All hard-to-heal wounds are likely to benefit from TOT	Bem R, et al. (2023) A new algorithm for the management of diabetic foot ulcer: recommendations from Central and Eastern Europe. *J Wound Care*, 32(5):264-72.	bit.ly/nwc-tot-algorithm-JWCMay23
Expert opinion (HTW Guidance)	· Routine adoption of cTOT, in addition to standard of care, increases complete wound healing and reduces wound area and time to healing compared to standard of care alone – and all with cost savings	Health Technology Wales (2022) Continuous topical oxygen therapy to treat people with chronic non-healing and complex diabetic foot ulcers. *Health Technology Wales (HTW) Guidance* 043, Sep 2022.	bit.ly/htw-no2-guidance
Pre-clinical work	· No significant difference between negative control and cTOT in the moisture content of the tissue or absorption of the dressings	Isaev D, et al. (2024) Impact of Continuous Topical Oxygen Therapy on Wound Moisture Levels. [Poster] *SAWC Fall*.	bit.ly/NO2-Moisture
Pre-clinical work	· Data from this test confirms that the ODS component of cTOT system does not impair fluid transfer from the wound bed to the absorbent dressing in a dynamic wound model	Sharp M, et al. (2024) Impact of Continuous Topical Oxygen Therapy on Fluid Handling. [Poster] *SAWC Fall*.	bit.ly/NO2-Fluid
Pre-clinical work	· Suggests increased metabolic activity within bacterial cells and less requirement to form biofilm following cTOT treatment · Enhanced metabolism may increase the susceptibility of biofilm bacteria to antimicrobials thus improving antimicrobial treatment of chronic wounds	Ball C, et al. (2024) Impact of continuous Topical Oxygen Therapy on biofilm gene expression in a porcine tissue model. *J Wound Care*, 33(9):702-7.	bit.ly/poster-biofilm



NO2-Evidence_05/25 (V3)

LEARN MORE:

Contact Spartan Medical Inc.

(888) 240-8091

CS@SPARTANMEDICAL.COM

SPARTAN MEDICAL INC.®

1445 Research Blvd, Suite 520,
Rockville, MD 20850
spartanmedical.com
UEI: LCJBD88KQ8G3
DUNS: 807438341 I CAGE:65VT5