

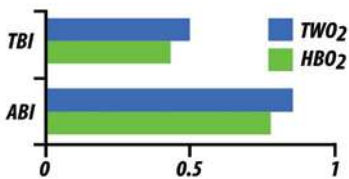
Hyperbaric and Topical Wound Oxygen: A Comparative Study

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Two similar cases of Partial First Ray Amputations secondary to Osteomyelitis and soft tissue infection were compared. Negative pressure was used in both cases set at 125 mm of HG for approximately 3 weeks, changed 3 times weekly, and started day 1 in conjunction with HBO₂ or TWO₂ modalities. Topical wound care and off loading consisted of wet to dry dressings and Cam boots respectively. The TWO₂ patient lived over 65 miles from the nearest HBO₂ facility and could not afford the costs of transportation.

Safety: Both wounds were debrided, titrated to antibiotics per the C&S, and normal WBCs were attained prior to initiation of therapies as listed below.

Patient Data	HBO ₂	TWO ₂
Age	52	64
DM	13 yrs	21 yrs
Hx of amputation	x2	x1
PMH	DM, HTN, Hep C, Cirrhosis	DM, HTN, Obesity, Kidney Dx
Smoking	20 pack yrs	Negative
ABI/TBI	.85 / .45	.90 / .52



Results:

- The TWO₂ wound took 17 days longer to heal
- TWO₂ costs were less expensive
- TWO₂ was utilized to full closure vs HBO₂ which was limited to 40 dives (day 56 and not fully healed)
- The HBO₂ wound apart from 40 dives required 32 additional days of conventional wound healing to closure
- No baro-trauma or complications were incurred

Hyperbaric Oxygen (HBO₂)



Topical Wound Oxygen (TWO₂)



MODALITY	Wound Size/ Depth	Negative pressure	O ₂ Therapy	Healing time	Cost
HBO ₂	11.2 x 4.8 cm depth 2.7 cm	17 days	40 dives (56 days)	88 days	\$23,160
TWO ₂	11.9 x 5.4 cm depth 3.1 cm	23 days	210 applications (105 days)	105 days	\$11,445

HBO₂ and TWO₂ are both viable options in healing large open wounds. TWO₂ has been shown to be cost effective, and a comparative healing modality. TWO₂ is an excellent, alternative choice to HBO₂ especially when considering financial resources, limitations with health, availability, and convenience (home usage).