

Severe Anaemia from Exceptional Blood Loss

START IMMEDIATELY — a bridge, given while the cause is corrected

A temporising bridge that sustains tissue oxygenation on dissolved plasma oxygen when transfusion is unavailable, refused or impossible.

TREATMENT PROTOCOL

Pressure	2.0–3.0 ATA (200–300 kPa), reached rapidly
Duration	3–4 hours per session, with intra-treatment air breaks
Frequency	Three to four times daily while the anaemia is life-threatening
Sessions	Open-ended. Taper both length and frequency as the patient stabilises
Review	Qualitative — the manual sets no session-count trigger

PATIENT SELECTION

Who to treat	Life-threatening anaemia where transfusion is unavailable, refused on religious grounds, or impossible through alloimmunisation. Trigger on clinical signs of systemic or end-organ failure, not on a calculated oxygen-debt figure.
Who not to treat, or when to stop	This is bridging only — it does not correct the anaemia. The underlying blood loss must still be managed. Continue until red-cell mass is restored by regeneration or transfusion becomes possible.
Mechanism	Henry's law — at raised pressure enough oxygen dissolves in plasma to support metabolism largely independently of haemoglobin. Pulsed hyperoxia may also stimulate erythropoiesis.
Outcome measure	Survival and recovery; end-organ function (mental status, ECG, urine output); haemoglobin recovery.

WHAT THE NUMBERS SHOW

- Van Meter 2005** (systematic review of 35 publications — **26 animal experiments, only 9 human case reports and series**): all 35 reported a positive result. No randomised trial exists, because the situation precludes randomisation.
- Graffeo 2013** (case): full recovery at a haemoglobin of **1.9 g/dL** after 30 treatments in a patient refusing transfusion, alongside ventilation, vasopressors and dialysis.
- McLoughlin 1999** (case): pulsed treatment at 2 ATA for 90 min, 22 treatments over 16 days, at a haemoglobin nadir of **2.0 g/dL**.
- Van Meter 2012**: one hyperbaric session costs approximately the wholesale price of one unit of packed red cells.

EVIDENCE BASE

Shape and certainty	About 14 records, human data are case reports and series plus one small controlled prospective trial. No randomised trial exists or can ethically exist. UHMS rates this AHA Class IIb ; normobaric oxygen is Class I.	
Study	Design	Result and risk of bias
Van Meter 2005 — PMID 15796315	SR: 26 animal + 9 human reports	All positive; AMSTAR-2 critically low
Graffeo 2013 — PMID 23380087	Case report	Survival at haemoglobin 1.9 g/dL
McLoughlin 1999 — PMID 10460565	Case report	Positive
Bell 2000 — PMID 10744564	Published correspondence	Contests mechanism, attribution, cost and declared interests

WHAT THE EVIDENCE DOES NOT SUPPORT

Cautions	No randomised trial exists or can exist — the rating stays Class IIb however many cases accumulate. Two frequently cited bloodless-medicine reviews (Posluszny 2014, Shander 2018) do not mention hyperbaric oxygen at all and must never be cited as evidence for it; they describe the standard of care this treatment sits on top of.
----------	---

STATUS IN SOUTH AFRICA

Status	Accepted indication in South Africa (NRPL-recognised); no dedicated SAUHMA protocol. Maps to the life-threatening anaemia diagnosis-treatment pair.
--------	---

Compiled from the **UHMS Hyperbaric Oxygen Therapy Indications Manual, 15th edition (2023)** and the appraised trial evidence held in an HBOT evidence library. All treatments are 100% oxygen. US Navy Treatment Table profiles are named, not reproduced — the US Navy Diving Manual is the operative document at the chamber. Session counts are largely guideline convention rather than dose-finding evidence. This card summarises published parameters and does not replace those source documents or clinical judgement for the individual patient. Generated 03 October 2026. Not a SAUHMA publication and carries no society endorsement.