Case studies

3M | Veraflo™ Therapy

3M™ Veraflo™ Therapy with 3M™ V.A.C. Veraflo Cleanse Choice™ Dressing

The following case studies are the results of physicians' clinical experience. As with any case study, the results and outcomes should not be interpreted as a guarantee or warranty of similar results. Individual results may vary depending on the patient's circumstances and condition.

Note: Specific indications, contraindications, warnings, precautions and safety information exist for these products and therapies. Please consult a physician and product instructions for use prior to application. This information is intended for healthcare professionals only.

Case study 1 – Perianal surgical wound

A 74-year-old male with insulin-dependent diabetes mellitus and hypertension presented to the hospital for abdominoperineal resection. Previous medical history included radiation therapy for rectal cancer. On postoperative day 4, a purulent discharge was exudating from the perianal wound. On day 10, a CT scan confirmed urine retention due to haematoma. The next day (day 11), the haematoma was drained, and the wound was opened, debrided, and measured 8cm x 4cm x 5cm. The wound was packed with povidone-iodine gauze with daily changes for 3 days. After additional drainage and debridement, the wound bed was covered with 75% slough and 25% devitalized tissue. Treatment with 3M™ V.A.C.® Therapy began on postoperative day 18 using a 3M™ V.A.C. Granufoam™ Dressing. After 3 days, treatment was changed to 3M™ Veraflo™ Therapy with 3M™ V.A.C. Veraflo™ Dressing, 50mL of a polyhexanide solution was instilled with a dwell time of 15 minutes, followed by 4 hours of -125mmHg negative pressure. Three days later, devitalized tissue was debrided, but the wound bed was covered with 85% thick slough (**Figure 1**). The dressing was changed to the 3M™ V.A.C. Veraflo Cleanse Choice™ Dressing (**Figure 2, 3**) to help with wound cleansing by facilitating the removal of thick exudate such as slough. A polyhexanide solution was instilled with a dwell time of 15 minutes, followed by 1 hour of -125mmHg negative pressure. Dressings were changed every 3 days (**Figure 4, 5**). After 11 days of Veraflo therapy with V.A.C. Veraflo Cleanse Choice dressing, the thick, dry slough was easier to remove. The wound bed was assessed as being covered with 65% slough and 35% granulation tissue. The patient requested to go home and was discharged with V.A.C.® Therapy.

Figure 1. Wound after 3 days of V.A.C.® Therapy, followed by 3 days of Veraflo Therapy with V.A.C. Veraflo Dressing.

Figure 2. Application of contact layer dressing.

Figure 3. Application of V.A.C. Veraflo Cleanse Choice Dressing.

Figure 4. Wound at 1st change of V.A.C. Veraflo Cleanse Choice Dressing.

Figure 5. Wound at 2nd change of V.A.C. Veraflo Cleanse Choice Dressing.

Patient data and photos courtesy of Terence Chua, MBBS, PhD, Lismore Base Hospital, Lismore, NSW, Australia.

Case study 2 – Chronic foot wound

A male patient presented to the hospital with a chronic, non-healing foot wound resulting from a motor vehicle accident over 4 years prior. The wound measured 5cm x 3.5cm x 0.5cm and was located on the top medial aspect of the foot with 95% slough covering the wound bed (**Figure 1**). The patient was a current smoker and had a medical history of Type 2 diabetes mellitus and hypercholesterolemia. He was also ineligible for surgical debridement due to his medication. 3M™ Veraflo™ Therapy with 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing was initiated for wound cleansing. Normal saline (12mL) was instilled with a dwell time of 10 minutes, followed by 3.5 hours of negative pressure at -125mmHg. Dressings were changed every 3 days. At the first dressing change, the wound measured 4.5cm x 3cm x 0.5cm (**Figure 2**), with a visible reduction in slough. At the third dressing change (**Figure 3**), treatment was switched to V.A.C.® Therapy using 3M™ V.A.C.® Granufoam™ Dressing with continuous negative pressure at -125mmHg for 30 days. At the 4-week follow-up, the patient had received a split-thickness skin graft at a different hospital and appeared to be healing without signs of complications (**Figure 4**).

Figure 1. Wound at presentation.

Figure 2. Wound at the first dressing change.

Figure 3. Wound at the third dressing change.

Figure 4. Wound at 4-week follow-up. Patient had received a split thickness skin graft at a different hospital.

Patient data and photos courtesy of John Stuchbury, Albury Base Hospital, Albury, NSW, Australia.

Case study 3 – Left elbow wound

A 73-year-old female presented to the hospital with a chronic wound on the left elbow of 6 weeks duration. Previously, the patient received antibiotics after the wound showed signs of inflammation and oozing. An emergency surgery was performed to remove the infected bursa, and the patient reacted negatively to anesthetics. The wound was sutured, and the patient was discharged with advanced wound dressings and antibiotics. Upon returning 1 week later for suture removal, the wound exhibited symptoms of inflammation and dehiscence. The wound was surrounded by fragile skin and tested positive for *P. aeruginosa* infection. Surgical debridement was not possible for the patient due to a previous adverse reaction to anesthesia.

Upon presentation to the hospital, the wound measured 4cm x 3cm with 75% slough covering the wound bed (**Figure 1**). 3M™ Veraflo™ Therapy using 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing was initiated. A 0.9% saline solution was instilled with a 10-minute dwell time, followed by 3.5 hours of -125mmHg negative pressure. At each dressing change, which was performed every 2–3 days, a decrease of slough and increase in granulation tissue were noted (**Figure 2 and 3**). After 8 days, the wound area had reduced to 3cm x 1.5cm, slough was eliminated, and the wound bed was 100% covered with healthy granulation tissue (**Figure 4**). The wound was closed, and the 3M™ Prevena™ Incision Management System was applied over the incision. The patient was then discharged home. After 7 days, the 3M™ Prevena™ Incision Dressing was removed, and advanced wound dressings were used to assist with final healing. The clinician was pleased with the outcome.

Figure 1. Wound at presentation.

Figure 2. Wound after 2 days of treatment with 3M™ V.A.C. Veraflo™ Therapy with 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing.

Figure 3. Wound after 5 days of treatment with Veraflo Therapy with 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing.

Figure 4. Wound after 8 days of treatment with 3M™ V.A.C. Veraflo™ Therapy with 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing.

Patient data and photos courtesy of Angela Hatfield, Orthopaedic Surgeon, Wagga Wagga Hospital, NSW, Australia.

Case study 4 – Sacral pressure injury

A 60-year-old male with a history of temporal lobe epilepsy, cerebral vascular accident (CVA), atrial fibrillation, depression, and B cell lymphoma was admitted to the hospital with an unstageable sacral pressure injury (**Figure 1**). Previously, the patient had suffered a CVA and collapsed; the patient was discovered and hospitalized 9 days later with suspected deep tissue pressure injuries to the occiput, right shoulder, and sacrum. Upon admission, the patient had multi-organ failure from severe dehydration and rhabdomyolysis. He was treated for middle cerebral aneurysm with coil embolization, and the occipital and shoulder pressure injuries healed with minimal intervention. At 18 days after admission, the unstageable sacral injury was 30mm in diameter (**Figure 2**) and surgical debridement was not an option due to patient complexity. Following conservative sharp debridement at bedside, the injury was identified as a Stage IV pressure injury measuring 70mm x 65mm x 50mm with bone palpable at the base of the wound (**Figure 3**). 3M™ Veraflo™ Therapy using 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing was initiated by instilling 0.7% polyhexanide/0.1% betaine solution with a 15-minutes dwell time, followed by 3 hours of -125mmHg negative pressure. Dressing changes were performed every 2-3 days. After 9 days (**Figure 4**), therapy was switched to 3M™ V.A.C.® Therapy using 3M™ V.A.C.® Granufoam™ dressing. Treatment continued for 32 days, at which point the wound had significantly decreased in depth and the wound bed was covered with red granulation tissue (**Figure 5**). Treatment was stepped down to 3M™ Nanova™ Therapy at a continuous -125mmHg negative pressure for 2 weeks. Dressings were changed every 3 days. Upon follow-up (51 days after 3M™ Nanova™ Therapy application), the wound had progressed to complete closure (**Figure 6**).

Figure 1. Initial presentation of sacral pressure injury upon admission.

Figure 2. Pressure injury 18 days after admission, before sharp debridement at bedside.

Figure 3. Pressure injury 18 days after admission, after sharp debridement at bedside.

Figure 4. Wound after 9 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 5. Wound after 32 days of V.A.C.® Therapy with V.A.C.® Granufoam dressing.

Figure 6. Wound closure upon follow-up 51 days after 3M™ Nanova™ Therapy application.

Patient data and photos courtesy of Mark Keating, Wound CNC, Camden & Campbelltown Hospital, Campbelltown, NSW, Australia.

Case study 5 – Heel pressure injury

A 55-year-old male was transferred to a rehabilitation ward following a long hospital stay after fracturing his right distal tibia and fibula, requiring an open reduction and internal fixation. The patient's medical history included chronic schizophrenia, type II diabetes, hypertension, dyslipidemia, peripheral vascular disease, and chronic bilateral pitting oedema. Upon removal of the controlled ankle movement boot, an unstageable pressure injury was noticed on the right heel. A wound swab returned positive for methicillin-resistant Staphylococcus aureus, Streptococcus agalactiae, and pseudomonas. Treatment consisted of antibiotics, medicinal honey, silver-embedded dressing, and application of enzymatic and sharp debridement. Following the removal of devitalized tissue, the injury was assessed as a stage IV pressure injury. Further examination revealed no osteomyelitis, and an ultrasound doppler confirmed adequate peripheral perfusion. However, the wound remained unresponsive to treatment, and the vascular team determined that surgical intervention would not be appropriate. The heel was off-loaded with a heel suspension boot, but this left the patient unable to resume rehabilitation. Due to multiple comorbidities, the patient was unsuited for surgical debridement. The decision was made to transition treatment to 3M™ Veraflo™ Therapy for wound cleansing.

The wound measured 4.5cm x 3.5cm x 0.7cm, with a slight malodour and 90% of the wound covered by devitalized tissue and slough (**Figure 1**). The goal of therapy was to cleanse the wound to help remove slough and infectious materials. A 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing was placed over the wound bed (**Figure 2**), and Veraflo Therapy was initiated by instilling 20mL of a 0.1% polyhexanide/0.1% betaine solution with a 15-minute dwell time, followed by 4 hours of -125mmHg negative pressure (**Figure 3**). Dressing changes occurred every 2 days. At the first dressing change, the slough had reduced in density and healthy granulation tissue was noted. Wound measurements were 4cm x 3.3cm x 0.6cm (**Figure 4**). After a total of 4 days, V.A.C. Veraflo Cleanse Choice Dressing was discontinued and a V.A.C. Veraflo Dressing was used with Veraflo Therapy. The solution volume was decreased to 12mL. The dwell time and negative pressure settings remained the same. On day 6, there was no visible slough on the wound bed, which was 100% covered with healthy granulation tissue (**Figure 5**). There was also no malodour or signs of infection. Wound measurements were 4cm x 3cm x 0.3cm. Treatment was transitioned to 3M™ V.A.C.® Therapy with a 3M™ V.A.C.® Granufoam™ Dressing. The wound continued to show improvement with no return of slough after 3 days (**Figure 6**).

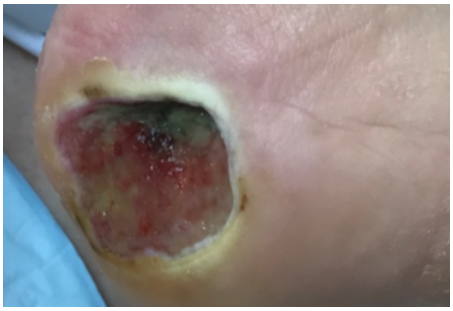

Figure 1. Wound at initial presentation.

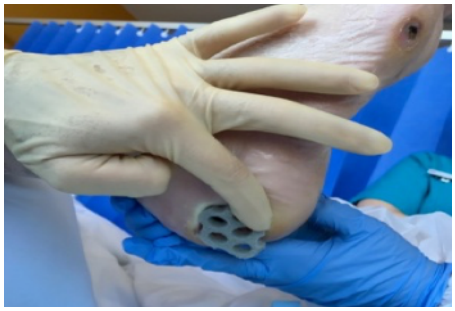

Figure 2. Placement of V.A.C. Veraflo Cleanse Choice Dressing contact layer on the wound bed.

Figure 3. Initiation of Veraflo Therapy.

Figure 4. Wound after 2 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

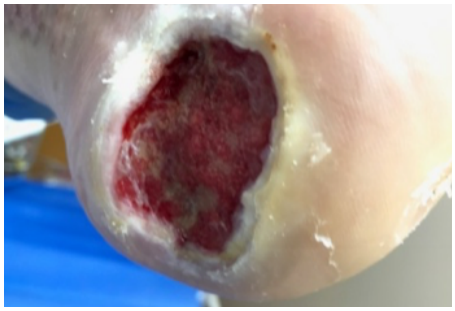

Figure 5. Wound after 2 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 6. Wound after 3 days of V.A.C.® Therapy with V.A.C.® Granufoam Dressing.

Patient data and photos courtesy of Mark Keating, Wound CNC, Camden & Campbelltown Hospital, Campbelltown, NSW, Australia.

Case study 6 – Diabetic foot abscess

A 48-year-old male patient presented to the hospital with a left diabetic foot abscess (**Figure 1**). The patient was a former smoker with Type II diabetes mellitus, peripheral vascular disease, bilateral neuropathy, and hypertension. His medical history included osteomyelitis of the right calcaneus and left big toe and an osteotomy of the first metatarsal bone in the left foot. Treatment with intravenous cephazolin commenced upon initial evaluation. The abscess was drained with pus discharge and dressed with non-adherent povidone-iodine and polyurethane foam dressings. On the following day, a sharp debridement and a washout were performed in the operating room (OR), followed by application of 3M™ V.A.C.® Therapy using 3M™ V.A.C.® Granufoam™ Dressing at -125mmHg continuous negative pressure. After two days of treatment, the wound measured 10cm x 3cm x 1cm (**Figure 2**). Therapy was switched to 3M™ Veraflo™ Therapy using 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing (**Figure 3 and 4**). A nonadherent dressing was placed over the exposed bone at the base of the 4th metatarsal. The wound was instilled with 6mL of a polyhexanide solution with 15-minute dwell time, followed by 3.5 hours of negative pressure at -125mmHg. After 3 days of treatment, the swelling and redness had decreased, though slough was still present (**Figure 5**). On Day 5 (**Figure 6**), treatment settings were changed to instill 8mL of a polyhexanide solution with a 15-minute dwell time, followed by 2 hours of negative pressure at -125mmHg. Continuous improvement was noted at each dressing change, which occurred every 2-3 days. After a total of 10 days (**Figure 7**), the dressing was switched to V.A.C. Veraflo Dressing, resuming previous instillation settings, and dressings were changed every 2-3 days (**Figure 8**). After 7 days (**Figure 9**), treatment switched to V.A.C.® Therapy with V.A.C.® Granufoam™ Dressing and the patient was discharged to a community health clinic. At this time, the wound measured 9cm x 2.5cm x 0.5cm. Seventeen days after discharge, granulation tissue had significantly increased and the medial crease closed (**Figure 10**). V.A.C.® Therapy was discontinued to avoid hyper-granulation, and treatment was changed to a daily 15-minute dressing soak with a polyhexanide solution, followed by application of medicinal honey and advanced wound dressings. This regimen was continued for 17 days. The patient reported total wound closure 12 weeks later, with follow-up showing complete healing (**Figure 11**). The total treatment period using the negative pressure devices was 34 days.

Figure 1. Diabetic foot abscess upon admission.

Figure 2. Wound after drainage, washout, sharp debridement and 2 days of V.A.C.® Therapy.

Figure 3. Application of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing. Planter view.

Patient data and photos courtesy of David Hardman, MBBS, FRACS, Canberra Hospital, Deakin, ACT, Australia.

(continued – Diabetic foot abscess)

Figure 4. Application of 3M™ Veraflo™ Therapy with 3M™ V.A.C. Veraflo Cleanse Choice™ Dressing. Dorsal view.

Figure 5. Wound after 3 days of treatment with Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 6. Wound after 5 days of treatment with Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 7. Wound after 10 days of treatment with Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

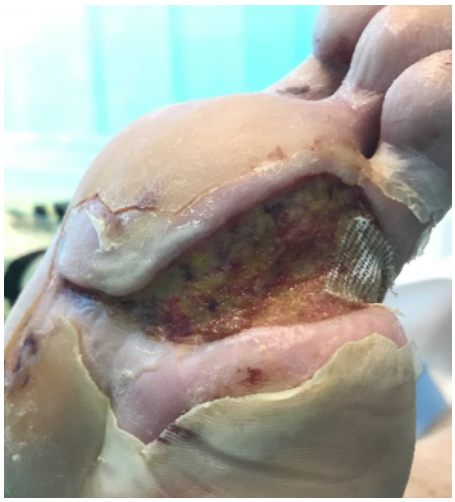

Figure 8. Wound 4 days (2 dressing changes) after switching treatment to Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 9. Wound 7 days after switching treatment to Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 10. Wound 17 days after switching treatment to 3M™ V.A.C.® Therapy with 3M™ V.A.C.® Granufoam™ Dressing over an interface dressing to prevent hypergranulation.

Figure 11. Closed wound 14 weeks after discontinuation of V.A.C.® Therapy.

Case study 7 – Chronic leg ulcers

A 72-year-old female presented to the hospital with bilateral, chronic, non-healing leg ulcers with a duration of 6 years. The patient's medical history included controlled type II diabetes, vascular dementia, a chronic pilonidal sinus, and multiple pulmonary embolisms. The patient had previously undergone treatment for breast cancer, removal of basal cell carcinomas and squamous cell carcinomas of the face, neck, and lower limbs, and bilateral total knee replacements.

Both leg wounds were covered with 3M™ V.A.C.® Granufoam™ Dressing and treated with 3M™ V.A.C.® Therapy for 1 week, after which 3M™ Veraflo™ Therapy using 3M™ V.A.C.® Veraflo Cleanse Choice™ Dressing was first initiated on the 2 wounds on the left leg. A polyhexanide biguanide solution was instilled into the wound with a dwell time of 10 minutes, followed by 3.5 hours of -125mmHg continuous negative pressure. Dressing changes were performed every 2–3 days. At the first dressing change, decreased slough and improved granulation coverage were observed in the left leg (**Figure 1 and 2**), Treatment continued on the left leg wounds for 41 days (**Figures 3-8**) until split thickness skin grafts (STSG) were applied to close the wounds. No complications were observed at 1-week post STSG application (**Figures 9 and 10**).

Successful healing progression of the left leg prompted the decision to apply identical treatment to the right leg (**Figures 11 and 12**), using same V.A.C. Veraflo Therapy settings and with dressing changes every 2-3 days. A reduction of devitalized tissue and increased granulation were observed at each dressing change over 39 days (**Figures 13-17**). The wounds were closed using STSGs, with no signs of complications at 1-week post STSG application (**Figure 18**).

Wound progress left leg

Figure 1. Anterior left leg wound after 2 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

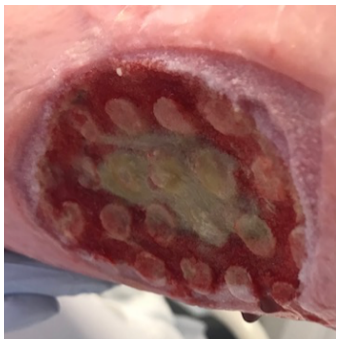

Figure 2. Posterior left leg wound after 2 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 3. Anterior left leg wound after 6 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 4. Posterior left leg wound after 6 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 5. Anterior left leg wound after 9 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

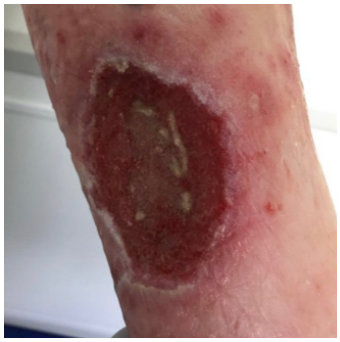

Figure 6. Posterior left leg wound after 9 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 7. Anterior left leg wound after 16 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

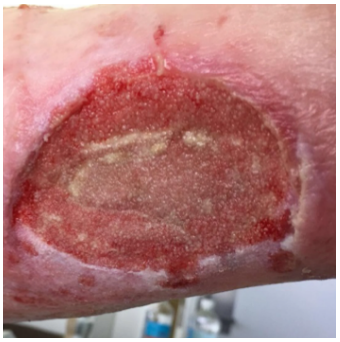

Figure 8. Posterior left leg wound after 16 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Patient data and photos courtesy of Cara Bowen, Wound CNC, Liverpool Hospital, Australia.

(continued – Chronic leg ulcers)

Figure 9. Anterior left leg wound 1 week after closure with STSG.

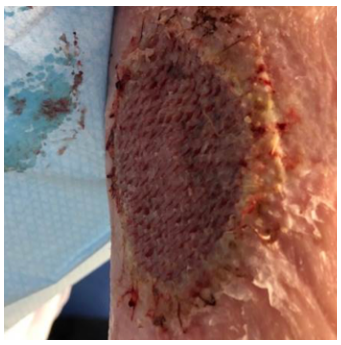

Figure 10. Posterior left leg wound 1 week after closure with STSG.

Wound progress right leg

Figure 11. Anterior right leg wound after 1 week of 3M™ V.A.C.® Therapy with 3M™ V.A.C.® Granufoam™ Dressing.

Figure 12. Lateral view of right leg after 1 week of V.A.C.® Therapy with V.A.C.® Granufoam Dressing.

Figure 13. Anterior right leg wound after 4 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 14. Lateral view of right leg wounds after 4 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 15. Anterior right leg wound after 7 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 16. Lateral view of right leg wounds after 7 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 17. Lateral view of right leg wounds after 10 days of Veraflo Therapy with V.A.C. Veraflo Cleanse Choice Dressing.

Figure 18. Anterior view of right leg wounds 1 week after closure with STSG.

For more information about 3M™ Veraflo™ Therapy with 3M™ V.A.C. Veraflo Cleanse Choice™ Dressing, please contact your local representative.

These case studies are the results of physicians' clinical experience. As with any case study, the results and outcomes should not be interpreted as a guarantee or warranty of similar results. Individual results may vary depending on the patient's circumstances and condition.

Note: Specific indications, contraindications, warnings, precautions and safety information exist for these products and therapies. Please consult a physician and product instructions for use prior to application. This material is intended for healthcare professionals.

3M

KCI
part of 3M