

internal medicine

surgery

emergency & critical care

dermatology

radiology, ultrasound & CT scan

# Vacuum Assisted Wound Closure (VAC)

**VACUUM ASSISTED WOUND CLOSURE OR V.A.C. THERAPY** is a non-invasive localized therapy using sub-atmospheric negative pressure to promote wound healing. Though originally developed to treat chronic non healing wounds in humans, it's uses have expanded to promote healing of many wounds across species. VAC is patented technology of KCI, San Antonio TX.

**VAC BANDAGE COMPONENTS AND PROTOCOLS** A VAC bandage consists of sterile open celled polyurethane foam placed within or on a wound. A suction tube is placed within the foam and the foam bandage is covered with an air tight dressing adhered to the skin edges. Constant negative pressure is then applied to the bandage. The application and removal of a VAC bandage often requires heavy sedation and in some cases general anesthesia. VAC bandages are generally left in place for 3 days before being changed. Most wounds respond to between 1 and 3 VAC bandage applications. Because a constant negative pressure is required for effective VAC bandaging, patients must remain hospitalized for the duration of VAC therapy.

**BENEFITS OF VAC THERAPY** VAC bandages have been shown to increase local blood supply, promote granulation tissue formation and increase epithelial migration as well as to decrease interstitial fluid / edema and decrease bacterial colonization as compared with traditional bandaging techniques.



A flesh eating bacterial infection (*Chromobacterium violaceum*) secondary to a routine neuter. Following 3 VAC bandages, the spread of the bacteria was halted and the wounds were closed primary. Prior to initiation of VAC therapy, no dog had ever survived such an infection.

## VAC INDICATIONS AND CONTRAINDICATIONS

VAC therapy is most useful in infected and necrotic wounds where increased blood supply and granulation tissue are beneficial, however, it's benefits extend throughout wound management and reconstructive surgical techniques. VAC therapy is useful in closure of infected orthopedic implants and generation of tissue over exposed tendons, ligaments and bone. VAC therapy is shown to increase skin graft and skin flap survival and is helpful in reducing post-operative seroma and edema formation. Due to removal of interstitial fluid, VAC therapy eliminates compression of microcirculation and may help prevent secondary ischemic

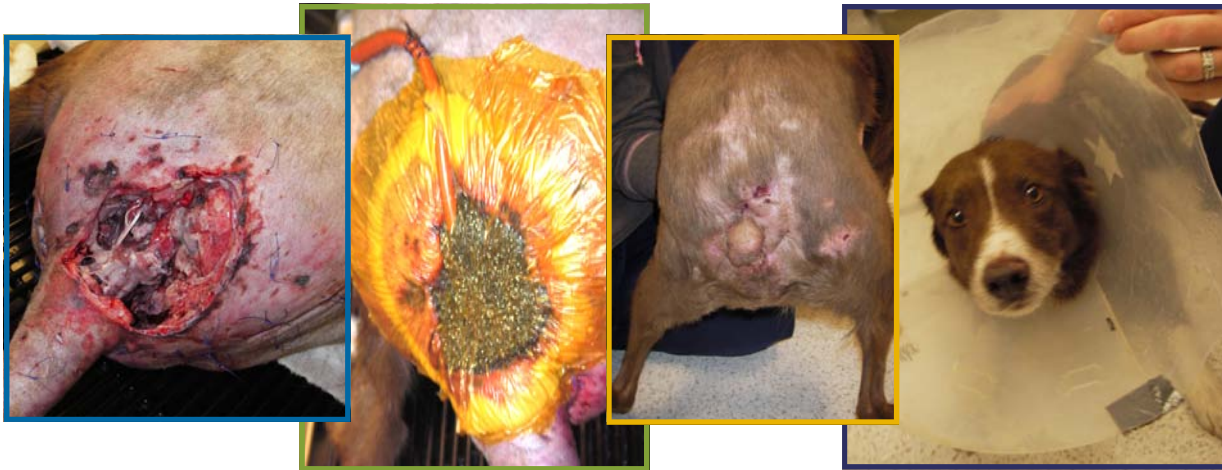


necrosis. Although some debridement (removal of dead tissue) is accomplished with VAC bandages, VAC therapy is no substitute for appropriate surgical debridement. Caution should also be used when using VAC therapy directly over exposed blood vessels or open body cavities.

# Wheat Ridge Veterinary Specialists

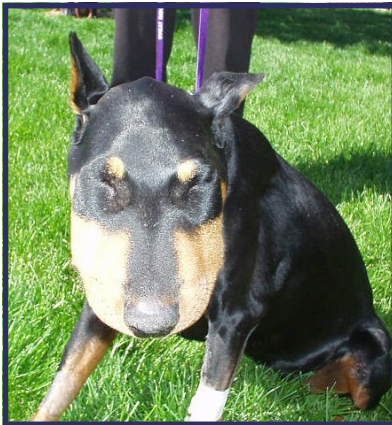
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**EXPERINECE** The surgeons at Wheat Ridge Veterinary Specialists are at the world forefront of VAC therapy and its application in veterinary surgery. The technique has been used successfully on hundreds of small animals (dogs and cats) and has revolutionized wound management. It has allowed salvage of many wounds and injuries previously though to be untreatable.



A severe bite wound over the tail base of a dog. This wound extended down to expose the vertebrae and penetrated the rectum. Following 4 VAC bandage changes, The tail was amputated and the wound was closed surgically. Without the use of VAC this wound would have taken months to resolve and the degree of infection may have caused more serious systemic disease and possible death.

A rare condition of lymphoma (cancer) which caused necrosis of the salivary glands and severe swelling and edema formation of the head. The disease progressed until the eyes were swollen shut. The dog was unable to swallow and was having difficulty breathing. After 36 hours of VAC therapy to the ventral neck, 3 liters of edematous fluid had been removed and the head was back to its normal size.



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