

**Title: Use of electromagnetic therapy in limb salvage**

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**Abstract:**

**Introduction:** Electromagnetic therapy, such as electrical stimulation and magnet therapy, has been tried for many years for pain relief and to enhance wound healing<sup>1</sup>. A new entry into the arena of electromagnetic therapy produces a pulsating electromagnetic force field\* that increases oxygen tension in the treated tissue<sup>2</sup>. This increase in oxygenation is reported to enhance healing of various tissues, as well as increasing angiogenesis and increasing arterial circulation. Based on reports of improved circulation, use of this treatment was tried for severe cases of circulatory compromise with threatened limb amputation.

**Method:** This is a report of three cases of arterial occlusion or trauma using this unique ionic wave electromagnetic therapy. In all cases amputation was offered prior to treatment. All cases also had concomitant wound treatment.

**Results:**

**Case 1:** 18 year old white male basketball player with traumatic lawn mower amputation of three toes, with failed surgical re-attachment and resulting gangrene and infection. Within five months had complete healing of toes with only partial loss of tips, retaining full function and ability to play basketball.

**Case 2:** 58 year old white female with rheumatoid arthritis with septic thromboembolism to distal forefoot, with resulting gangrene and infection. Return to full time work after two weeks; complete resolution within eight months with loss of two lateral toes, but retention of full pre-morbid function.

**Case 3:** 60 year old white male with thromboembolism to distal foot during femoral stent surgery, with complete loss of waveforms in toes. Patient returned to work in two weeks, and within three weeks, waveforms were restored. He had complete resolution and healing within five months, with full return to normal function.

**Conclusion:** Pulsating electromagnetic force field therapy can be a valuable adjunctive modality used to improve circulation, enhance healing, and preserve limbs when there is vascular compromise.

1. Magnetic and Electromagnetic Therapy. Ramey, David W., DVM. <http://jeromekahn123.tripod.com/quackery/id4.html>. Nov. 26, 2005.
2. Unpublished data from University Health Science Center, Oklahoma City, Oklahoma. Effective Wound Treatment: The Importance of Tissue Oxygenation in Wound Healing. MicroVas Technologies, Inc. 2003.

\* MicroVas vascular treatment system..

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# Use of electromagnetic therapy in limb salvage

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## Introduction

Electromagnetic therapy, such as electrical stimulation and magnet therapy, has been tried for many years for pain relief and to enhance wound healing (1). A new entry into the arena of electromagnetic therapy produces a pulsating electromagnetic force field\* that increases oxygen tension in the treated tissue (2). This increase in oxygenation is reported to enhance healing of various tissues, as well as increasing angiogenesis and increasing arterial circulation. Based on reports of improved circulation, use of this treatment was tried for severe cases of circulatory compromise with threatened limb amputation.

## Objectives/Methods

This is a report of three cases of arterial occlusion or trauma using this unique ionic wave electromagnetic therapy. In all cases amputation was offered prior to treatment. All cases also had concomitant wound treatment.

## Results

**Case 1.** 60 year old white male with thromboembolism to distal foot during femoral stent surgery, with complete loss of waveforms in toes. Patient returned to work in two weeks, and within three weeks, waveforms were restored. He had complete resolution and healing within five months, with full return to normal function.



## Results

**Case 2.** 18 year old white male basketball player with traumatic lawn mower amputation of three toes, with failed surgical re-attachment and resulting gangrene and infection. Within five months had complete healing of toes with only partial loss of tips, retaining full function and ability to play basketball. Patient was able to play in the first game of the season, and continuously thereafter. One year later he was approached by four colleges to play basketball.



**Case 3.** 58 year old white female with rheumatoid arthritis with septic thromboembolism to distal forefoot, with resulting gangrene and infection. Return to full time work after two weeks; complete resolution within eight months with loss of two lateral toes, but retention of full premorbid function.



## Conclusions

Pulsating electromagnetic force field therapy can be a valuable adjunctive modality used to improve circulation, enhance healing, and preserve limbs when there is vascular compromise.

## References

1. Magnetic and Electromagnetic Therapy. Ramey, David W., DVM. <http://jeromekahn123.tripod.com/quackery/id4.html>. Nov. 26, 2005
2. Unpublished date from University Health Science Center, Oklahoma City, Oklahoma. Effective Wound Treatment: The Importance of Tissue Oxygenation in Wound Healing. MicroVas Technologies, Inc. 2003.

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