ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ
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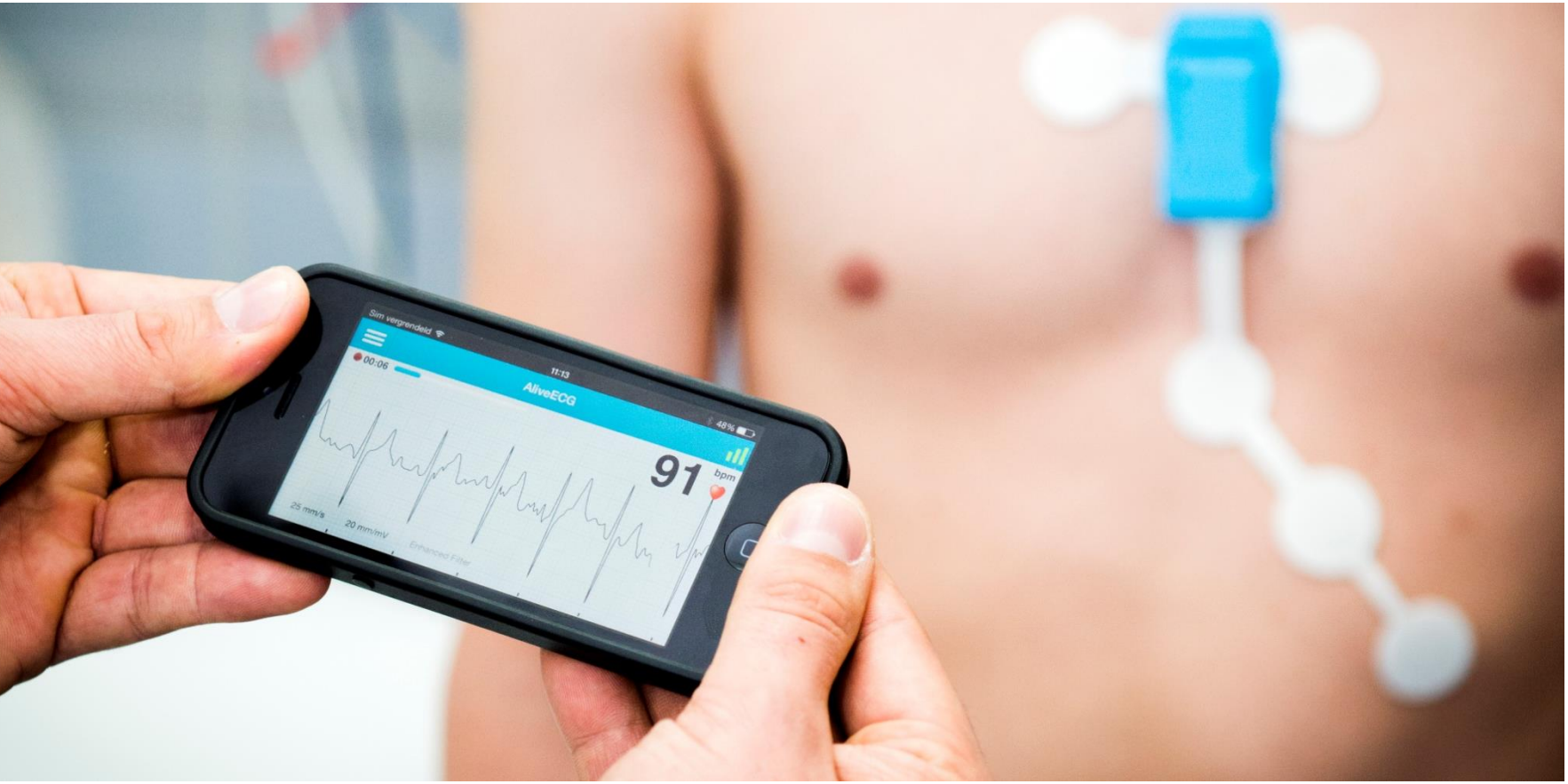
ΕΡΓΑΣΤΗΡΙΟ
ΜΟΡΙΑΚΗΣ ΒΙΟΛΟΓΙΑΣ
ΚΑΙ ΑΝΟΣΟΛΟΓΙΑΣ

Wireless Health Solutions

ΑΘΗΝΑ, 26 ΦΕΒΡΟΥΑΡΙΟΥ 2015

Κων/νος Πουλάς
Τμήμα Φαρμακευτικής
Παν. Πατρών

Mobile Health

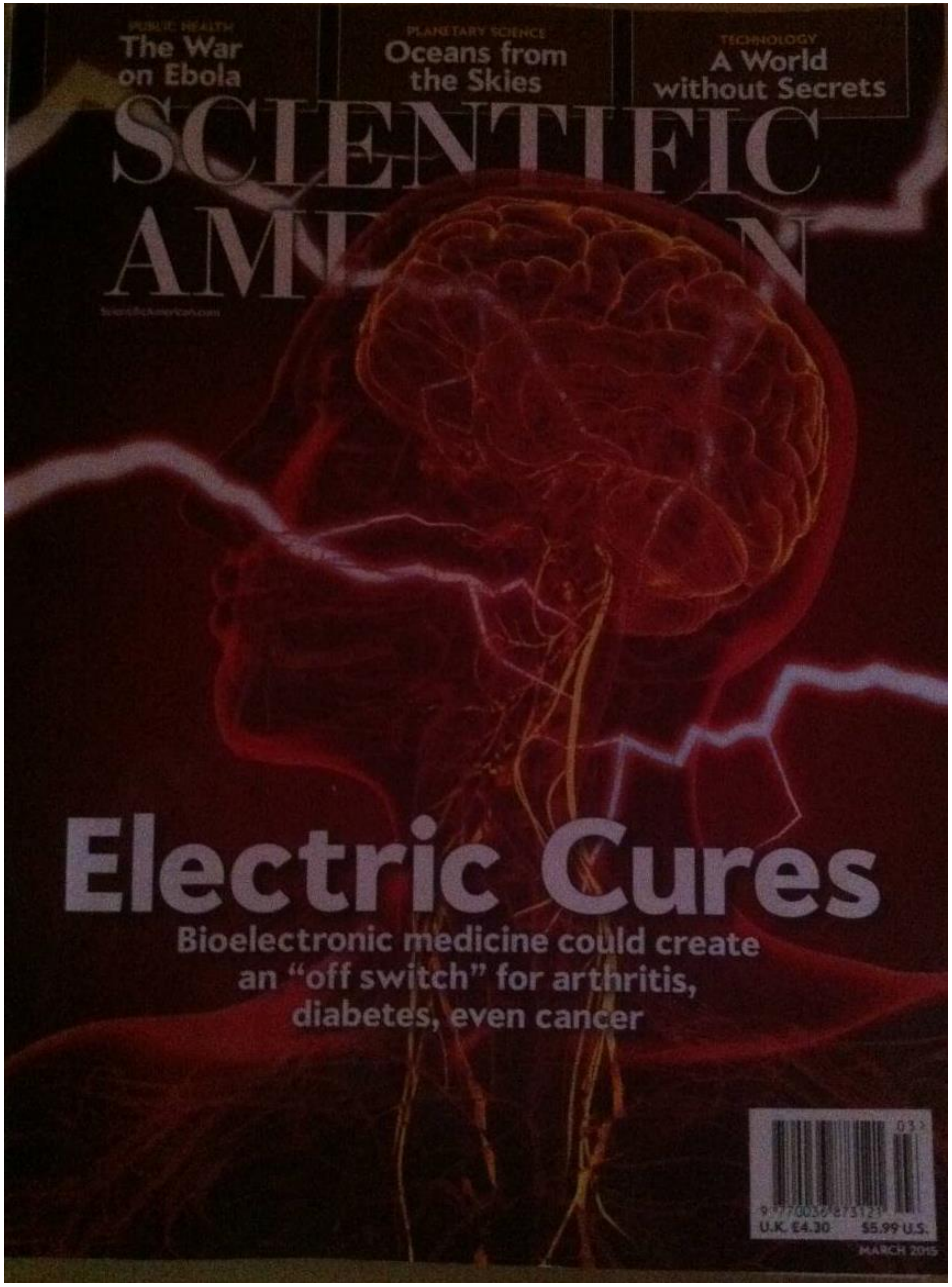


Mobile Health

Η ιδέα δεν είναι νέα

Η ιδέα δεν είναι νέα

Wireless Health



Bioelectronic Medicine

Ηλεκτρικά ρεύματα και ηλεκτρομαγνητικά κύματα στην υπηρεσία της θεραπευτικής

ΤΕΧΝΟΛΟΓΙΕΣ ΠΟΥ ΠΑΡΟΥΣΙΑΖΟΝΤΑΙ

WMCS = Wireless Microcurrent Stimulation

PEMF = Pulsed Electromegnetic Fields

Συμβατική θεραπεία με ηλεκτροδιέγερση – Χρήση ηλεκτροδίων

Αναγνωρισμένοι περιορισμοί στη χρήση: **I) Προκαλεί πόνο στον ασθενή**
II) Δυσκολίες στην εφαρμογή
III) Κίνδυνος λοίμωξης
IV) Περιορισμός στο μέγεθος της επιφάνειας εφαρμογής

Συμβατική θεραπεία με ηλεκτροδιέγερση – Χρήση ηλεκτροδίων

Τεχνολογία WMCS

Ασύρματη Μικροηλεκτροδιέγερση

B

C D E

Wireless Electrical Stimulation: An Innovative Powerful Tool for the Treatment of a Complicated Chronic Ulcer

Extremity Wounds
XX(X) 1–4

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Castana Ourania[1], Aekaterini Dimitrouli[1], Theodoros Argyrakos[1], Emilia Theodorakopoulou[2], Nektarios Stampolidis[1], Emmanouil Papadopoulos[1], Athanasios Pallantzas[1], Ioannis Stasinopoulos[1], and Poulas Konstantinos[3]

Use of Wireless Microcurrent Stimulation for the Treatment of Diabetes-Related Wounds: 2 Case Reports

Adisaputra Ramadhinara, MD, and Konstantinos Poulas, PhD

ABSTRACT

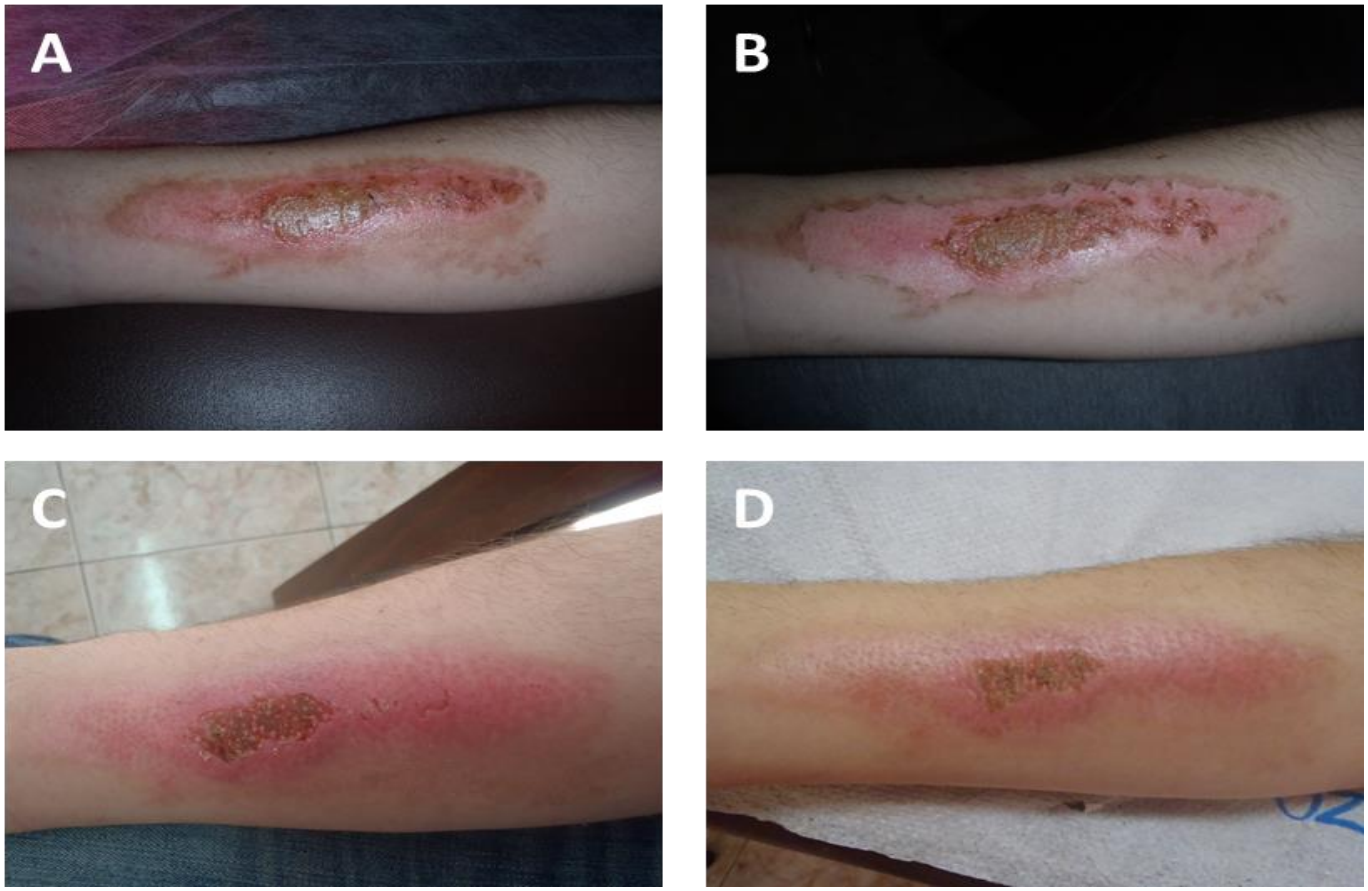
Wireless microcurrent stimulation (WMCS) is a new method in wound healing that may have advantages compared with conventional electrical stimulation (ES) devices. Although ES has been widely known as an effective method to promote the wound-healing process in patients with type 2 diabetes mellitus, to the authors' knowledge, there are still no data about the ability of WMCS to match the desired effect. In this article, the authors report the results of 2 cases of diabetes-related wounds (1 acute and 1 chronic) that have been treated successfully using WMCS. Neither patient reported discomfort during treatment, and the risk of infection was minimized because there was no direct contact from the device during the treatment course.

KEYWORDS: electrical stimulation and wound healing, microcurrent stimulation, diabetic ulcer, acute and chronic wounds

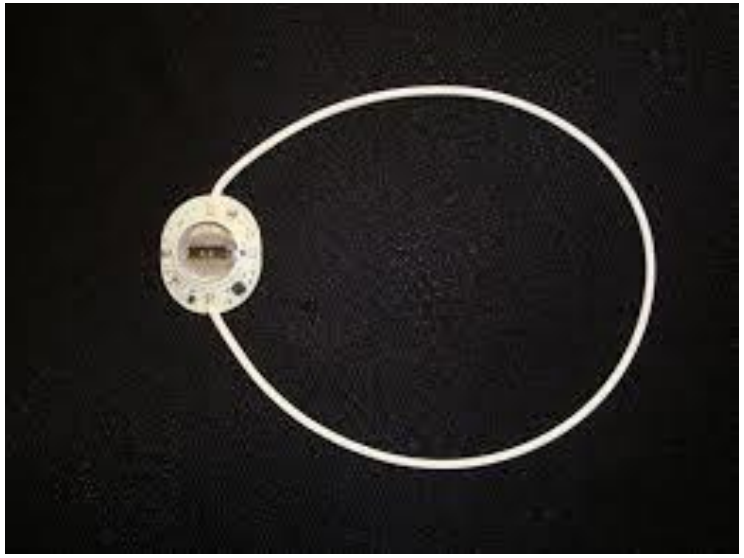
ADV SKIN WOUND CARE 2013;26:1–4

Εφαρμογή ασύρματης ηλεκτροδιέγερσης (14 μήνες μετά)

Εφαρμογή ασύρματης ηλεκτροδιέγερσης για εγκαύματα



Τεχνολογία PEMF



Bioelectronics USA

Back Pain	Knee Pain	Neck & Shoulder Pain	Real Pain Relief
• Back Spasms • Backaches • Back Arthritis • Sleeping Back Pain Problems	• General Knee Pain • Runners Knee • Jumpers Knee • Tendonitis • Knee Arthritis	• Neck Pain • Shoulder Pain • Arthritis	Essentially anywhere on the body using medical adhesives as an attachment method.

Τεχνολογία PEMF

Innovative electroceuticals for accelerating trauma recovery and enhancing athletes' muscle performance

Alkiviadis Kalliakmanis[1,2,3], George Lagoumintzis[1], Pantelis Nikolaou[2,3], and Konstantinos Poulas[1]

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Electrical stimulation (ES) is currently recommended as an adjunct treatment for: a) wounds, b) muscle recovery, and c) pain management. There are many ways to employ ES therapy, mainly by applying electrodes to the body (an approach called "conductive coupling"). The alternative and innovative is the "inductive coupling", where the injured/wounded member is exposed to electric or electromagnetic fields (*eg.* Wireless MicroCurrent Stimulation and Pulsing Electro Magnetic Fields-PEMF), which cause a current to flow strictly within the tissues. We here report the application of two similar -but inventively different- modalities of electroceuticals, the first based on Wireless Micro-Current Stimulation (WMCS, Wetling® device) technology, and the second based on PEMF technology (RecoveryRx®, Bioelectronics USA) - both under the umbrella of "conductive coupling" ES - on a number of football athletes with different pathologies.

INTRODUCTION

Electrical stimulation (ES) is recommended as an adjunct treatment for: **a**) reinitiating or accelerating healing process of wounds, **b**) muscle recovery, and **c**) pain management. There are two main ways to employ ES therapy: the first option is to rush current by electrodes to the body; this approach is called "conductive coupling", as the hardware conducts electricity to the treated body part. The alternative is the "inductive coupling", where the wounded member is exposed to electric or electromagnetic fields (*e.g.* Pulsing Electro Magnetic Fields-PEMF), which cause a current to flow strictly within the tissues. High voltage ES has shown significant therapeutic results in healing chronic wounds by increasing blood flow and oxygen concentration around the wound, and by directing cell migration and other components of the extracellular matrix [1-4].

Traditional "conductive coupling" ES directs current through pads in contact with the body, restarting the wound-healing process by mimicking the "current of injury". Despite the beneficial effects on the healing rate of wounds, this method has not been widely adopted, because of disadvantages related with the vicinity of the electrodes with the tissue next to the wound area. As a result of this contact, increased risk of infection and pain to the patient has been reported. ES is a widely adopted therapeutic intervention, especially in the athletic area (for fast recovery and healing) [5].

CLINICAL CASES

We here report on a number of football athletes a case-series study, of two similar -but inventively different- modalities of electroceuticals, the first based on Wireless Micro-Current Stimulation (WMCS) technology, and the second based on PEMF technology, both under the umbrella of "conductive coupling" ES.

RESULTS

The WMCS has promoted the resolution of postoperative joint swelling after cartilage microfractures, decreased the muscle pain and edema after adductors injury and improved the process of

Δευτέρα 14/07/14 - 15:43

Όλη η τεχνολογία για τη ζωή της Άννας Συνοδινού

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Wireless Health Solution

- Wound Healing
- Diabetic Foot
- Pain Killing
- Athletic Recovery