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**ELECTROSTATIC FIELD THERAPY**

**HEALTH TECHNOLOGY ASSESSMENT SECTION  
MEDICAL DEVELOPMENT DIVISION  
MINISTRY OF HEALTH MALAYSIA  
003/2011**

**DISCLAIMER**

Technology review is a brief report, prepared on an urgent basis, which draws on restricted reviews from analysis of pertinent literature, on expert opinion and / or regulatory status where appropriate. It has not been subjected to an external review process. While effort has been made to do so, this document may not fully reflect all scientific research available. Additionally, other relevant scientific findings may have been reported since completion of this review.

Please contact: [htamalaysia@moh.gov.my](mailto:htamalaysia@moh.gov.my), if you would like further information.

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Health Technology Assessment Section (MaHTAS),  
Medical Development Division  
Ministry of Health Malaysia  
Level 4, Block E1, Precinct 1  
Government Office Complex  
62590 Putrajaya

Tel: 603 88831246

Fax: 603 8883 1230

Available at the following website: <http://www.moh.gov.my>

Prepared by:  
Dr Junainah Sabirin  
Principal Assistant Director  
Health Technology Assessment Section (MaHTAS)  
Ministry of Health Malaysia

Reviewed by:  
Datin Dr Rugayah Bakri  
Deputy Director  
Health Technology Assessment Section (MaHTAS)  
Ministry of Health Malaysia

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## **DISCLOSURE**

The authors of this report have no competing interest in this subject and the preparation of this report is totally funded by the Ministry of Health, Malaysia

## **EXECUTIVE SUMMARY**

### **Introduction**

Electrostatic field therapy or electric field therapy is claimed to be a simple, non-invasive technique using static electricity which produces fast demonstrable clinical results. Electrostatic field therapy apparatus apply high Alternating Current voltage potential to the body and create an electrical field around it. The electric field stimulates the sensory receptors in the skin, which in turn stimulates the hypothalamus and the other areas of the brain, to promote homeostatic functions. The electric field also generates minute amounts of induced current, which permeates the body and stimulates the metabolism of the cells. This technology review was conducted following a request from Senior Deputy Director, Medical Development Division, Ministry of Health, Malaysia to witness and deliver the certification of appreciation to the person in charge of free [REDACTED] Electrostatic Field Therapy centre.

### **Objective/aim**

The objective of this systematic review was to assess the safety, effectiveness and cost-effectiveness of [REDACTED] Electrostatic Field Therapy to improve disease conditions such as high blood pressure, asthma, heart problems, obesity, osteoporosis, arthritis, rheumatism, diabetes, insomnia, gout, cyst, migraine, gastric and skin problems.

### **Results and conclusions**

There was no retrievable evidence on the safety and cost-effectiveness of [REDACTED] Electrostatic Field Therapy in improving disease conditions. There was only limited low level of evidence (anecdotal claims) on the effectiveness of [REDACTED] Electrostatic Field Therapy in improving arthritis, numbness of the feet and blood glucose level.

### **Methods**

Electronic databases were searched, which included PubMed, OVID-Medline, EBM Reviews-Cochrane Central Register of Controlled Trials, EBM Reviews-Cochrane database of systematic reviews, EBM Reviews - HTA Databases, Horizon Scanning database (National Horizon Scanning, Australia and New Zealand Horizon) FDA website, MHRA, TUV for published reports. Google was used to search for additional information. There was no limit in the search. All published articles related to the use of [REDACTED] electrostatic field therapy or [REDACTED] electric field therapy and other electrostatic field therapy which was conducted in humans were included. Articles related to electromagnetic field therapy were excluded.

# PRO NATURE ELECTROSTATIC FIELD THERAPY

## 1. INTRODUCTION

The idea of easing pain with electricity was first discovered in 1752 by Benjamin Franklin of America, who proved that lightning is caused by electricity generated between the clouds and the ground. Owing to this discovery, it was later found that electricity is effective in the treatment of various kinds of ailments.<sup>1</sup>

Electrostatic field therapy or electric field therapy is claimed to be a simple, non-invasive technique using static electricity which produces fast demonstrable clinical results. The basic theory in this system of healing is that illness is caused by an imbalance in the flow of energy in the body and that restoration of normal energy flow can help restore health. It is believed that when an electric field with high voltage Alternating Current (AC) is applied on a human body, cells metabolism is stimulated by supplementing ions and the Acid-Base Balance of Electrolyte in the blood is adjusted.<sup>2</sup>

Electrostatic field therapy apparatus apply high AC voltage potential to the body and create an electrical field around it. The electric field stimulates the sensory receptors in the skin, which in turn stimulates the hypothalamus and the other areas of the brain, to promote homeostatic functions. The electric field also generates minute amounts of induced current, which permeates the body and stimulates the metabolism of the cells.<sup>2</sup> There are many types of electrostatic field therapy apparatus in the market such as

This technology review was conducted following a request from Senior Deputy Director, Medical Development Division, Ministry of Health, Malaysia to witness and deliver the certification of appreciation to the person in charge of free PRO NATURE Electrostatic Field Therapy centre.

## 2. OBJECTIVE/AIM

The objective of this systematic review was to assess the safety, effectiveness and cost-effectiveness of Electrostatic Field Therapy to improve disease conditions such as high blood pressure, asthma, heart problems, obesity, osteoarthritis, rheumatism, diabetes, insomnia, gout, cyst, migraine, gastric and skin problems.

## 3. TECHNICAL FEATURES

and is manufactured in . It is claimed that it can help to improve diseases such as high blood pressure, asthma, heart problems, obesity, osteoporosis, arthritis, rheumatism, diabetes, insomnia, gout, cyst, migraine, gastric and skin problems.<sup>4</sup>

### 3.1 Electrostatic Field Therapy component/specification:-

The device has three components:-<sup>2</sup>

- The main unit
- The leading prong
- The cushion

The device is about 45 cm in length, 37 cm width and 11 cm height and weighs 5 kilogram. The power supply is 240 Volts (V) AC with 50 Hz or 60 Hz. The input current is 0.5 Ampere while the power consumption is 120 Watts. It also has a timer safe stop circuit and the treatment time can be selected from the duration of 30 minutes, 60 minutes and 120 minutes. The output voltage differs with functions as shown below:-

- For High Potential Therapy the output voltage is 6000V (low) and 9000V (high)
- For Optical Therapy the output voltage is 950V (low) and 1200V (high)
- For Heat therapy, the thermostatically control device is provided at the high gear of heat and the temperature is kept at 65°C.



### 3.2. Mechanism of action (claimed)<sup>5</sup>

Electrostatic Field Therapy has three main functions:-

- **Heat therapy**  
PRO NATURE heat therapy focuses on the feet. It does not just involve transferring heat to the feet but engages the concept of foot acupoint reflexology as well. It applies suitable temperature on the exterior skin via Far Infrared Ray, which stimulates and massages the acupoints of the feet and eliminates pain. This therapy is believed to improve various diseases such as cardiovascular disease and neuropathic pain.
- **High potential therapy**  
high potential therapy produces 6000V to 9000V electricity around the body by using high voltage static electricity field. The high voltage static electricity leads to the discharge of powerful negative ions which enters the body and improves the nervous system, digestive system, blood circulation and body metabolism. It is believed to have the following effects:-
  - Enhance the vitality of cells and promotes metabolism
  - Purify the blood and recover acidized to normal alkalinity
  - Adjustment of vegetative nerves

- Improve natural curativeness and resistance against disease

- **Optical therapy**

optical therapy's alteration effect (massage) of positive and negative ions to the rate of over 70,000 times per second will enhance the vitality of the cells and activates the body. It is believed that this leads to a rise in basal metabolic rate, improves blood flow, improves burning of fat, regulates the overall physiologic function, purifies the blood, discharge wastes and removes poison.<sup>5</sup>



#### 4. Methodology

##### 4.1. Searching

Electronic databases were searched, which included PubMed, Ovid Medline -1948 to January week 2 2011, EBM Reviews-Cochrane Central Register of Controlled Trials-4<sup>th</sup> Quarter 2010, EBM Reviews-Cochrane database of systematic reviews -2005 to December 2010, EBM Reviews - HTA Databases 1<sup>st</sup> Quarter 2011, Horizon Scanning database (National Horizon Scanning Centre, Australia and New Zealand Horizon Scanning), FDA website, MHRA, TUV for published reports. Google was used to search for additional information. There was no limit in the search. Additional articles were identified from reviewing the bibliographies of retrieved articles.

The search strategy used the terms which were either used singly or in various combinations; Pro nature, "Pro nature", "electrostatic field therapy", "electric field therapy", "electrostatic therapy", safe\*, "chronic disease", hypertension, cost\* and diabetes.

##### 4.2. Selection

All published articles related to the use of electrostatic field therapy or electric field therapy and other electrostatic field therapy which were conducted in humans were included. We included all study design. The main outcomes included were evidence on improvement of disease conditions such as high blood pressure, asthma, heart problems, obesity, osteoporosis, arthritis, rheumatism, diabetes,

insomnia, gout, cyst, migraine, gastric and skin problems, safety and cost implication. We also included additional information submitted by a company and retrieved through internet search engine (Google). Articles related to electromagnetic field therapy were excluded. Animal studies were excluded. Relevant full text articles were critically appraised using Critical Appraisal Skills Programme (CASP) and evidence was graded according to US/Canadian Preventive Services Task Force (Appendix 1)

## **5. RESULTS AND DISCUSSION**

There was no retrievable evidence on [REDACTED] electrostatic field therapy from the scientific databases. All the information related to [REDACTED] electrostatic field therapy were from the document submitted by a company or through internet search engine (Google).

### **5.1. SAFETY**

There was no retrievable evidence on the safety aspect of this device. There was an article stating that it should not be used in a person using pacemaker and those below three years old.<sup>2</sup> The distributor claimed that the device has received TUV ISO 13485 and ISO 9001. There was no retrievable evidence on the approval by United States Food and Drug Administration (U.S. FDA) or CE mark.

### **5.2. EFFECTIVENESS**

#### **5.2.1. [REDACTED] Electrostatic Field Therapy**

There was no retrievable evidence on the effectiveness of [REDACTED] Electrostatic Field Therapy in improving disease conditions from the scientific databases. However, there were anecdotal claims relating the use of [REDACTED] electrostatic field therapy and improvement of arthritis, numbness of the feet and blood glucose level retrieved from internet search engine (Google).<sup>6</sup>

#### **5.2.2. Other Electrostatic Field Therapy**

A technology review report by Health Technology Assessment Section, Ministry of Health in 2007 on [REDACTED] which also use high voltage electric field therapy found that there was no retrievable scientific evidence on the safety and effectiveness of [REDACTED].<sup>7 level 1</sup> Similar findings was also found for [REDACTED] electrostatic therapy.<sup>8</sup>

There was only one abstract retrieved via PubMed on electrostatic therapy (EST). Xin YL and Liu D conducted a study involving 15 patients with primary lung cancer or pulmonary metastases which were treated with electrostatic therapy. Patients were treated with either low voltage (220V to 1200V), high voltage (500V to 2500V), or high voltage together with magnetic field. At six months after EST, tumour regression was observed in two cases, relief of symptoms but no change in tumour size in five cases and no effect of EST in nine patients. The authors concluded that there was no marked effect of EST for treatment of cancer could be observed.<sup>9</sup>

### 5.3. COST/COST-EFFECTIVENESS

There was no retrievable evidence on the cost-effectiveness of [REDACTED] Electrostatic Field Therapy. However, the price per unit is about RM [REDACTED] and the cost for 30 minutes session is RM [REDACTED]

### 6. CONCLUSION

There was no retrievable evidence on the safety and cost-effectiveness of [REDACTED] Electrostatic Field Therapy in improving disease conditions. There was only limited low level of evidence (anecdotal claims) on the effectiveness of [REDACTED] Electrostatic Field Therapy in improving arthritis, numbness of the feet and blood glucose level.

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## **8. APPENDIX**

### **8.1 Appendix 1**

#### **DESIGNATION OF LEVELS OF EVIDENCE**

- I Evidence obtained from at least one properly designed randomized controlled trial.
- II-I Evidence obtained from well-designed controlled trials without randomization.
- II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one centre or research group.
- II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.
- III Opinions or respected authorities, based on clinical experience; descriptive studies and case reports; or reports of expert committees.

**SOURCE:** *US/CANADIAN PREVENTIVE SERVICES TASK FORCE (Harris S2001)*

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