

# PHYSIOTHERAPY METHODS

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# MASSAGE

- Massage is a therapeutic manipulation of the **soft tissues of the body** with the goal of achieving normalization of those tissues.
- Effects
  - mechanical
  - neurological
  - psychological
  - reflexive

# MASSAGE

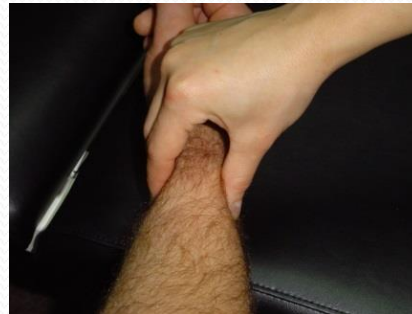
- Effects:
  - to reduce pain
  - to reduce adhesions
  - to promote sedation
  - to mobilize fluids
  - to increase muscular relaxation or to strengthen muscle
  - to facilitate vasodilation

# MESSAGE

- **WESTERN MASSAGE**
- **EASTERN MASSAGE**

# WESTERN MASSAGE TECHNIQUES

- *Effleurage*



# WESTERN MASSAGE TECHNIQUES

- *Petrissage*



# WESTERN MASSAGE TECHNIQUES

- *Tapotement (percussion)*



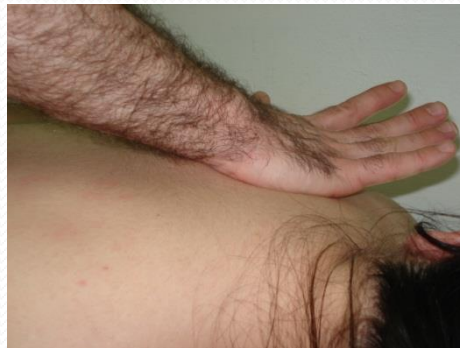
# WESTERN MASSAGE TECHNIQUES

- *Deep friction*



# WESTERN MASSAGE TECHNIQUES

- *Vibrations*



# REFLEXOLOGY MASSAGE

- **Reflexology**, also known as **zone therapy**, is an alternative medicine involving application of pressure to the feet and hands with specific thumb, finger, and hand techniques without the use of oil or lotion.
- It is based on a system of zones and reflex areas that purportedly reflect an image of the body on the feet and hands, with the premise that such work effects a physical change to the body.

# REFLEXOLOGY MASSAGE



# REFLEXOLOGY MASSAGE

## Teeth Reflexology Chart

Corresponding internal organs  
of the right side of the body

Kidney, Bladder,  
Prostate, Uterus

Liver, Gallbladder

Lung, Colon

Stomach, Thyroid,  
Pancreas

Heart,  
Small Intestine

Heart,  
Small Intestine

Stomach, Thyroid,  
Pancreas

Lung, Colon

Liver, Gallbladder

Kidney, Bladder,  
Prostate, Uterus

Corresponding internal organs  
of the left side of the body

Kidney, Bladder,  
Prostate, Uterus

Liver, Gallbladder

Lung, Colon

Stomach, Thyroid,  
Spleen

Heart,  
Small Intestine

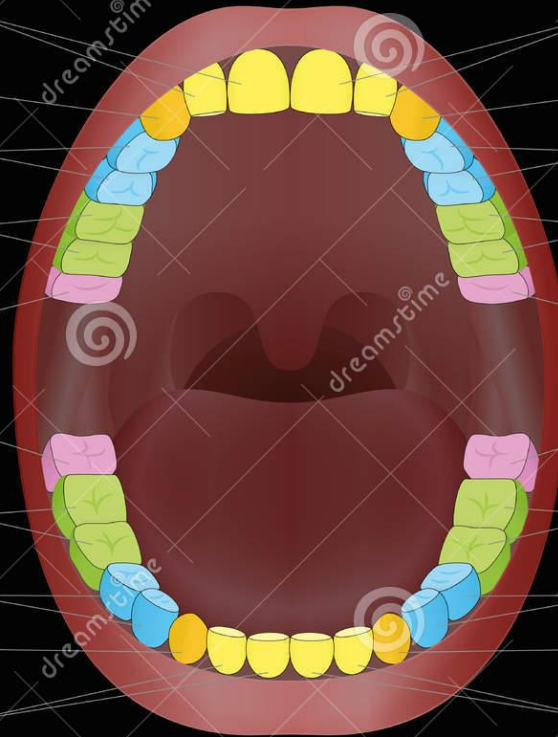
Heart,  
Small Intestine

Stomach, Thyroid,  
Spleen

Lung, Colon

Liver, Gallbladder

Kidney, Bladder,  
Prostate, Uterus



# MECHANICAL MASSAGE

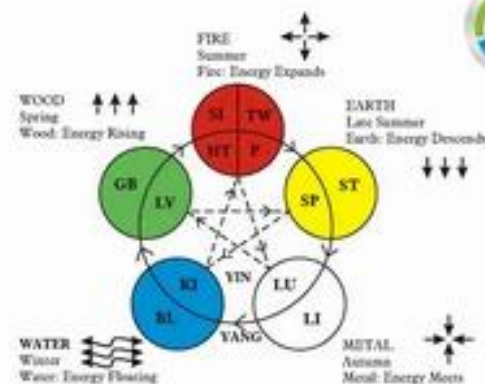
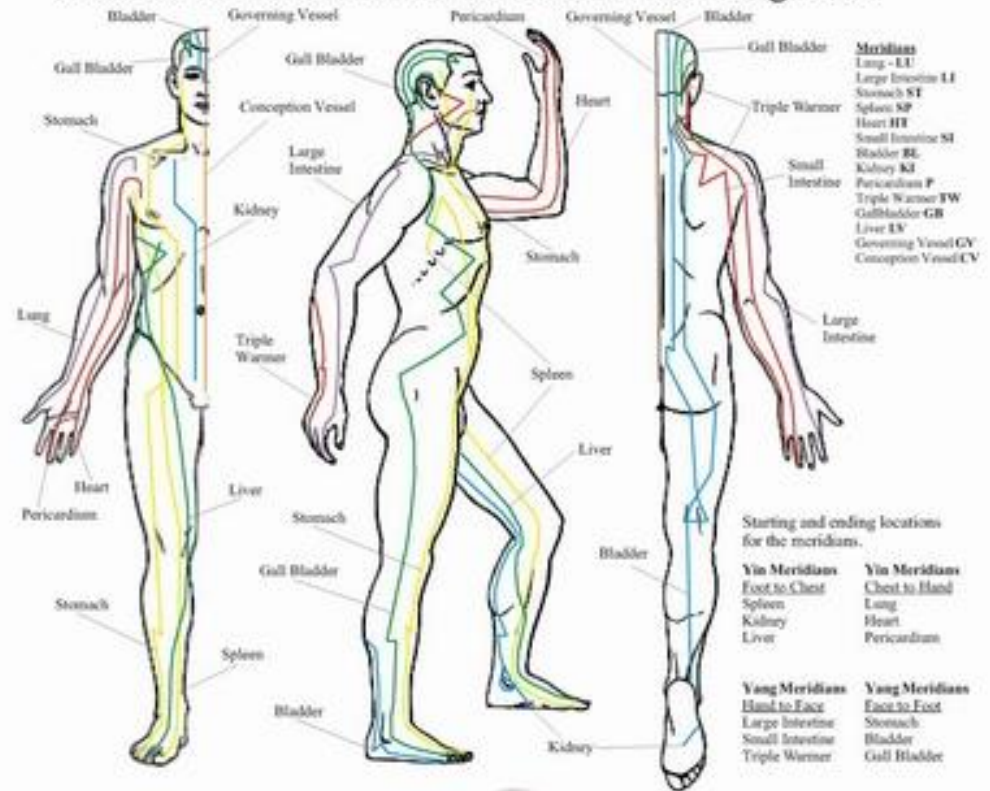


# SHIATSU

- **Shiatsu** is a form of Japanese bodywork based on the theoretical framework of traditional Chinese medicine.
- In the Japanese language, *shiatsu* means "finger pressure".
- Shiatsu techniques include:
  - massages with fingers, thumbs, feet and palms
  - assisted stretching
  - joint manipulation and mobilization

# SHIATSU

## Shiatsu Chart of Meridians and Hara Diagnosis



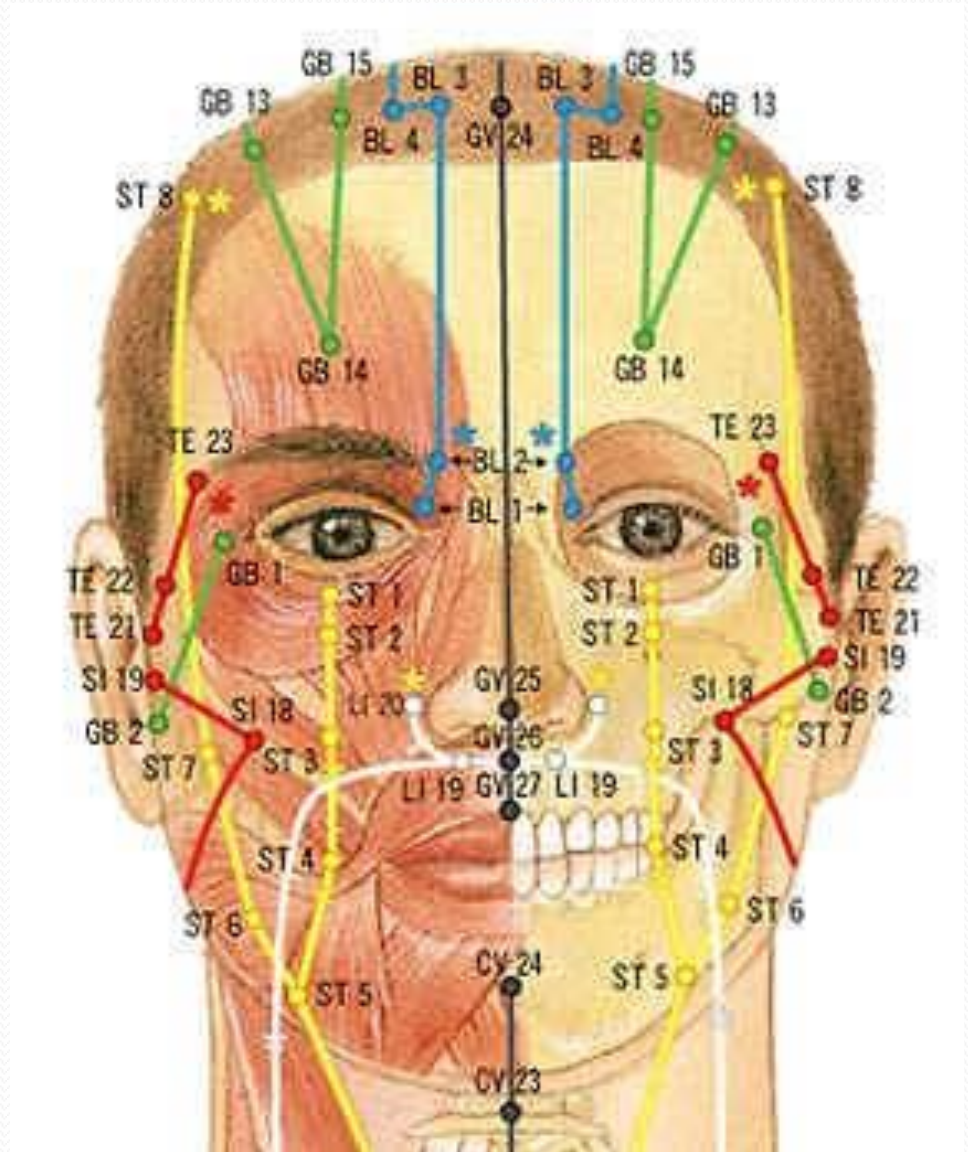
[www.AcupunctureProducts.com](http://www.AcupunctureProducts.com)



# ACCUPRESSURE

- **Acupressure** [from Latin acus "needle" + pressure] is an alternative medicine technique similar in principle to acupuncture.
- It is based on the concept of life energy which flows through "meridians" in the body.
- In treatment, physical pressure is applied to acupuncture points with the aim of clearing blockages in these meridians.

# ACCUPRESSURE



# Contraindications for massage

- Massage is contraindicated when it could cause worsening of a particular condition, unwanted tissue destruction, or spread of disease.
- **Malignancy, thrombi, atherosclerotic plaques, and infected tissue** could be spread by massage.

# Contraindications for massage

- acute infection
- bleeding
- new open wound
- infectious diseases (varicella, measles, rubella)
- incompletely healed scar tissue
- fragile skin
- skin grafts
- atrophic skin
- inflamed tissue
- malignancy

# ELECTROTHERAPY

Types of electric current used in therapy:

- **Low frequency** (0-100 Hz)
- **Medium frequency** (1 -100 KHz)
- **High frequency** (100 KHz – 50000 MHz)

# Low frequency electrotherapy

## *I. The galvanic current*

- low frequency and continuous current

Effects:

- -analgesic
- -stimulative
- - hyperaemia/ biotrophic
- - unspecific neurovegetative adjustment

# Low frequency electrotherapy

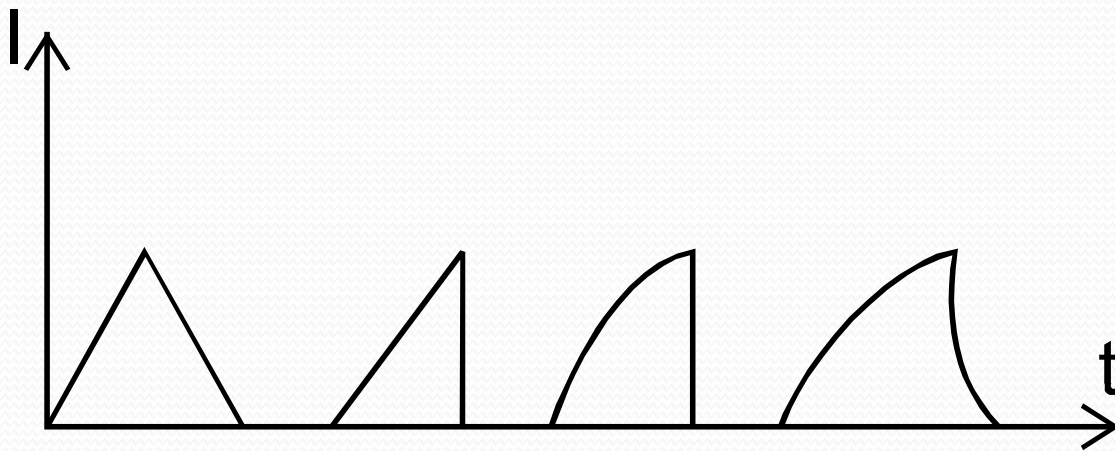
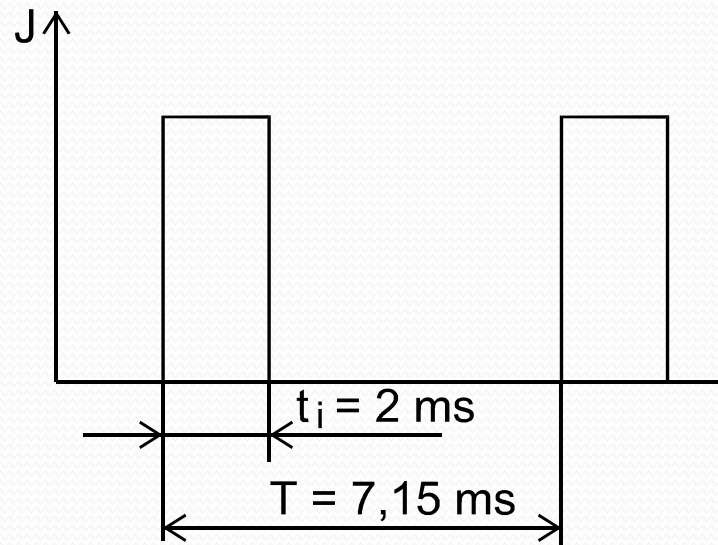
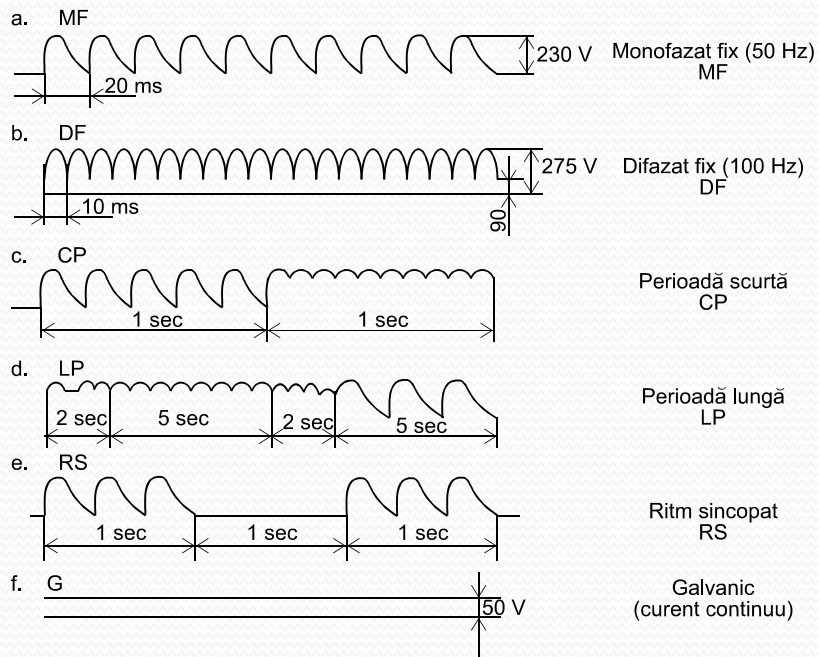
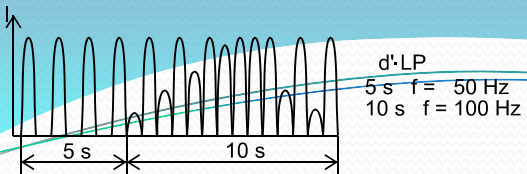
## Indications for galvanotherapy

1. Osteoarthritis
2. Rheumatoid inflammatory diseases in the sub acute period or between inflammatory flares
3. Rheumatism of the soft tissue (fibromyalgia)
4. Posttraumatic pathology containing local oedema, haematoma, algoneurodystrophy
5. Pathology of the nervous system:
  - the syndrome of peripheral motor neuron with paresis of the members, facial or of the sphincters belonging to internal organs
  - the syndrome of the central neuron with different etiologies (hemiparesis, tetraparesis, paraparesis)
  - disorders of sense organs
  - somatic cortical pain,
6. Dermatological disorders: acnes

# Low frequency electrotherapy

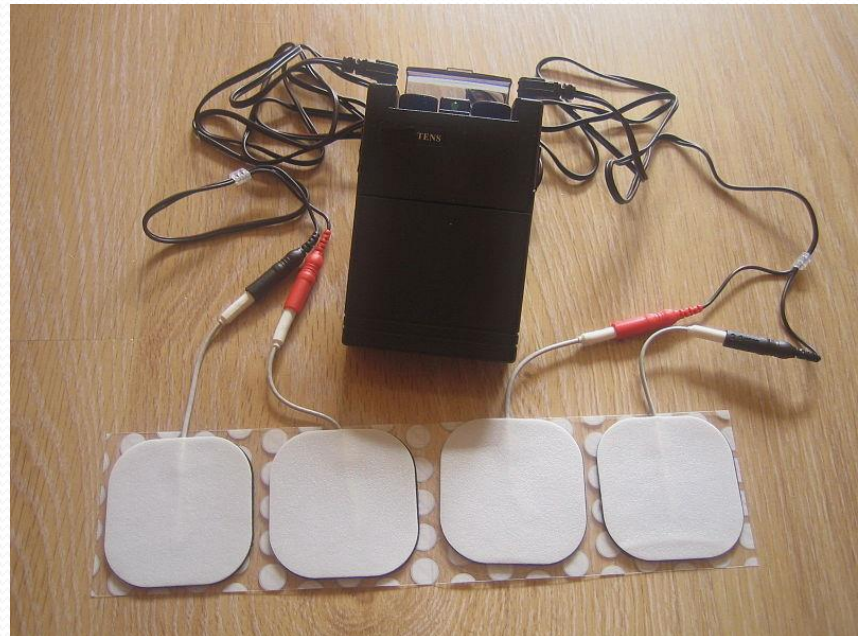
## *II. The impulse currents*

- Various types of currents shapes: exponential, trapezoidal, rectangular and triangular
- *Rectangular currents*
  - the simulation of normally innervated muscles (i.e. inactivity hypotrophy or atrophy, produced by prolong immobilization)
- *Exponential currents*
  - the simulation of partially or totally denervated muscles



# Low frequency electrotherapy

- Träbert current ( ultrastimulation current)
- **Transcutaneous electrical nerve stimulation (TENS, TNS)**
  - used for its dominant analgesic effect



# TENS

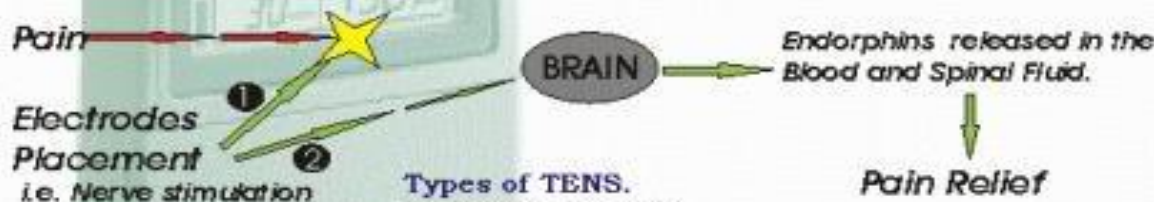
## (Transcutaneous Electrical Nerve Stimulation)

A technique used to relieve pain in an injured or diseased part of the body in which electrodes applied to the skin deliver intermittent stimulation to surface nerves, blocking the transmission of pain signals.

A TENS device consists of an adjustable power unit and electrodes that attach to the power unit via wires.

TENS machines are thought to work in two ways.

1. When the machine is set on a high pulse rate (90-130 Hz) it triggers the 'pain gate' to close. This is thought to block a pain nerve pathway to the brain. This is the normal method of use.
2. When the machine is set on a low pulse rate (2-5 Hz) it stimulates the body to make its own pain easing chemicals called endorphins. These act a bit like morphine to block pain signals.



Placement of patches for a patient with TMJ pain



Setting Pulse rate of the equipment



Stabilizing the pulse rate

Pictures : Courtesy SMS Medical College and Hospital

### Indications.

- Trigeminal Neuralgia
- TMJ Pain
- Atypical Facial Pain
- Atypical Odontalgia
- Vascular Orofacial Pain
- Post-Herpetic Neuralgia
- Post-Endodontics
- Cervical Pain
- Tension Headache
- Migraine Headache
- Burning Mouth Syndrome
- Paroxysmal Hemicrania
- Cluster Headache

### Advantage

TENS does not involve the use of drugs.

### Contraindications.

- Over the anterior part of the neck
- Patients with cardiac problems
- Patients with carotid sinus problems
- Directly over any wound
- Over the eye
- Patients with pacemakers
- Over poorly enervated areas
- Non-compliant patients

### Disadvantage

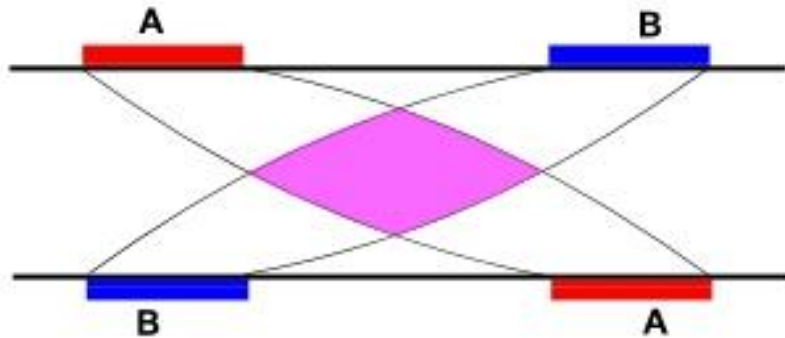
TENS can cause skin irritation.

# Medium frequency electrotherapy

- Using the crossing of 2 sinusoidal and disparity medium frequency currents (3.9 and 4.0 kHz) various effects are obtained depending on the crossing frequency:
- < 10 Hz – stimulation of normal skeletal fibres
- = 12 - 35 Hz – muscle relaxation
- = 1 - 4 Hz – stimulation of internal organs muscle
- = 4 - 10 Hz – stimulation of sympathetic system
- = 20 - 40 Hz - stimulation of parasympathetic system
- = 90 - 100 Hz - analgesia

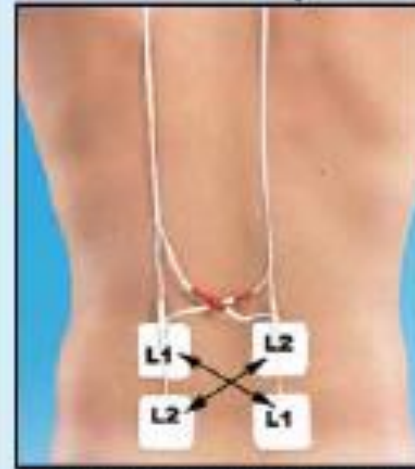
# Medium frequency electrotherapy

## Interferential electrotherapy

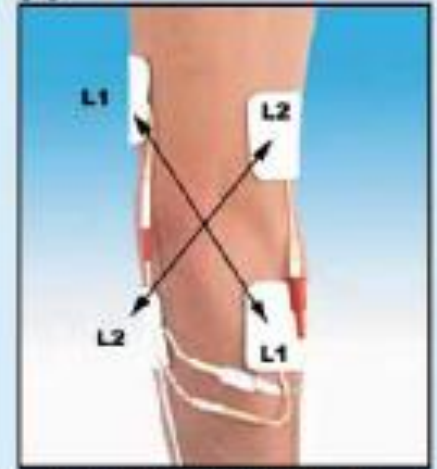


Current 'A' is at 4000Hz and current 'B' is at 3900Hz  
Interference current (beat frequency) generated in the central zone at the difference between input currents which would be 100Hz

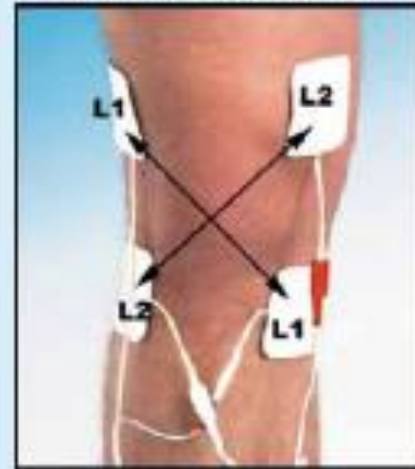
### Examples of Application



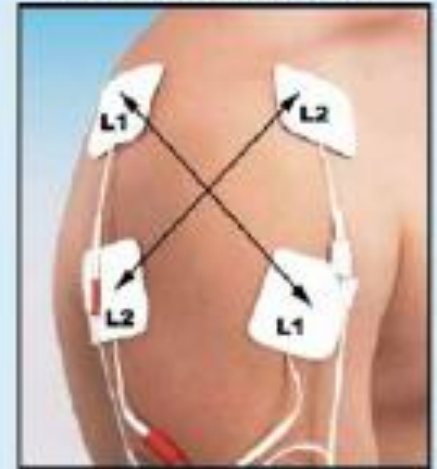
Chronic Lower Back Pain



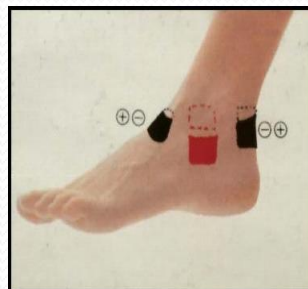
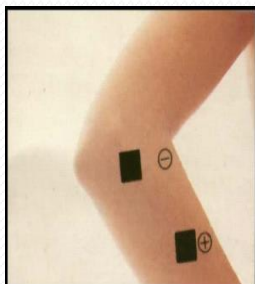
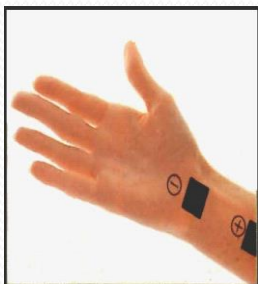
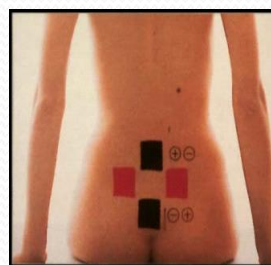
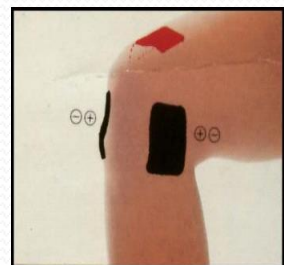
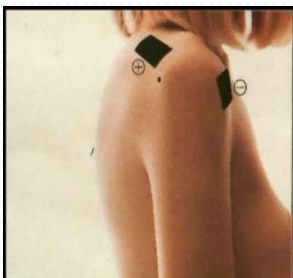
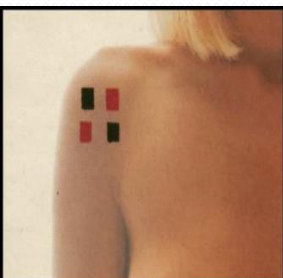
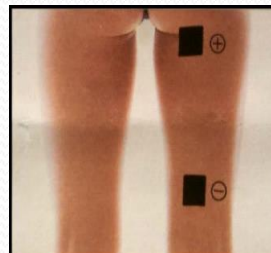
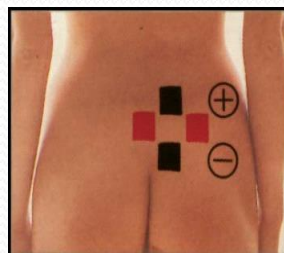
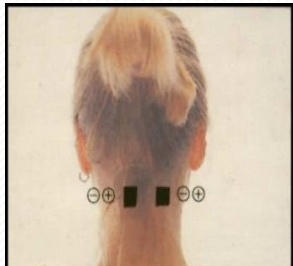
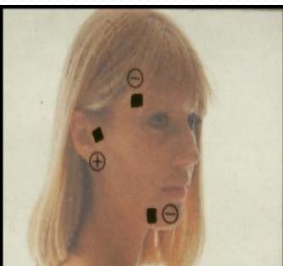
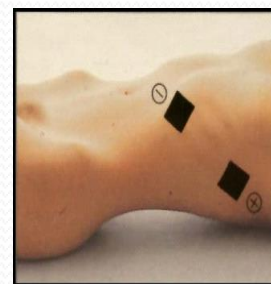
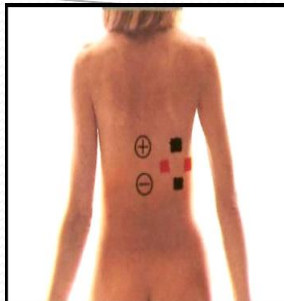
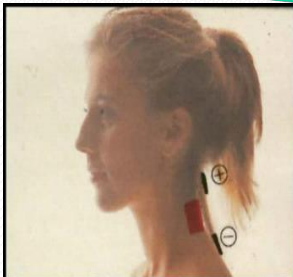
Elbow and Joint Pain



Knee Pain and Swelling



Shoulder Muscle Spasm



# Medium frequency electrotherapy

- The medium frequency therapy is used in the same pathology as the low frequency, **with less side effects.**

# High frequency electrotherapy

- **Electromagnetic fields**

- Shortwave therapy
- Radar waves

produce a profound heating of the tissues (diathermy).



# High frequency electrotherapy

- **Ultrasound therapy**
  - stimulates the bioelectrical potential of the human cell



# MAGNETOTHERAPY

- represents an artificially developed magnetic field (continuous or various waves forms)
- pointed to specific areas or to entire human body in order to use the well known human adaptation to terrestrial magnetic field for neurovegetative regulation or for speeding the healing process

# MAGNETOTHERAPY



# PHOTOTHERAPY

- The use of biological and physiological properties of light.
- I. Actinotherapy (ultraviolet radiation - UV)
- II. Infrared radiations (IR)
- III. Lasertherapy
- IV. Polarised light

# I. Actinotherapy (ultraviolet radiation)

- The treatment of disease, especially skin disease, by exposure to ultraviolet light.

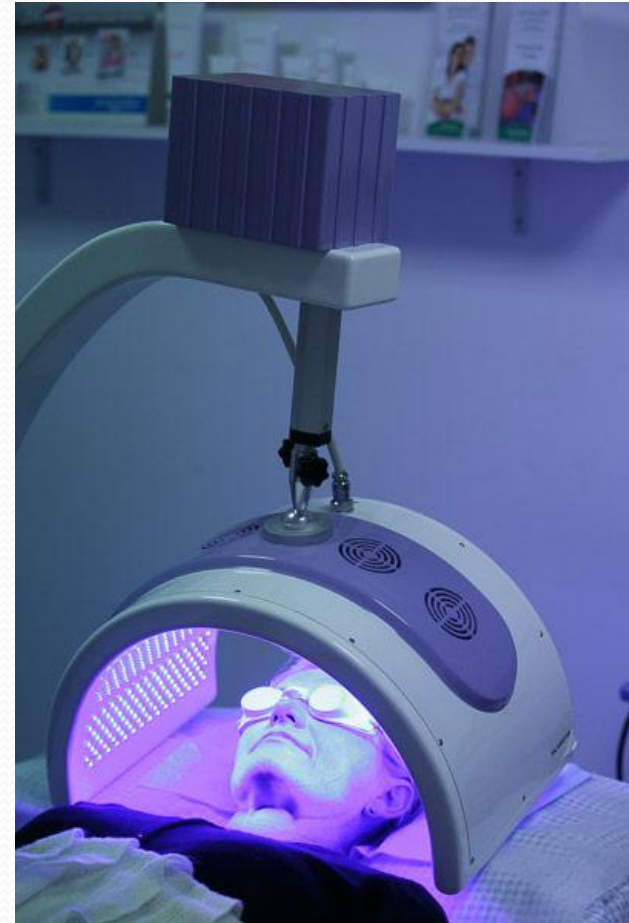
Effects:

- Photochemical
- Biological
  - analgesic
  - vasodilatation

# I. Actinotherapy (ultraviolet radiation)

Indications:

- rheumatic polyarthrititis
- osteoarthritis
- cervicobrachial neuralgia
- post traumatic states
- osteoporosis



## II. Infrared radiations (IR)

Indications:

- skin diseases
- ENT affections
- sub acute and chronic inflammatory process
- periarticular degenerative rheumatism in chronic stage
- peripheral circulation disorders
- vicious scars
- atonic ulcer



### III. Lasertherapy

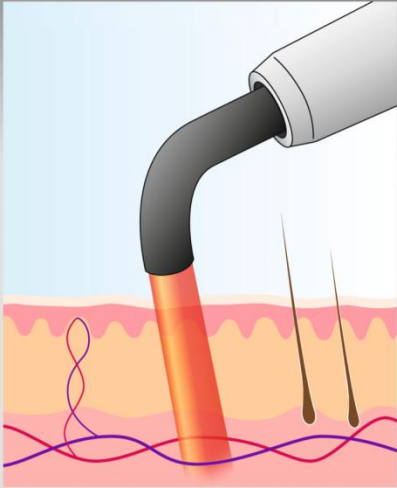
- **Low-level laser therapy (LLLT)** is a form of alternative medicine that applies low-level (low-power) lasers or light-emitting diodes to the surface or orifices of the body.
- 
- Whereas "high-power" lasers are used in laser medicine to cut or destroy tissue, low-power lasers are claimed to relieve pain or to stimulate and enhance cell function.

# III. Lasertherapy

- Various LLLT devices have been promoted for use in treatment of several musculoskeletal conditions including
  - carpal tunnel syndrome (CTS)
  - fibromyalgia
  - osteoarthritis
  - rheumatoid arthritis

They have also been promoted for temporomandibular joint (TMJ) disorders.

## Low Level Laser Therapies (LLLT)



- Wound healing
- Pain therapy
- Dolor post
- Aphthae
- Herpes
- Decubitus
- Maxillary joint disorders
- Scar smoothing
- Elimination of gag reflex



Facial Pain



Low-Back-Pain



Neck Pain



Wrist Pain



Elbow Pain



Knee Pain



## FDA Cleared ML830® Cold Laser

The ML830® Laser & its family of products treat Carpal Tunnel Syndrome, Arthritis, Muscle & Joint Pain, Stiffness & more!



Deep penetration of approx. 5cm

Reduce Inflammation

Improve Nerve Conduction

World's First FDA-Cleared 3-B Laser

2 Double-Blind Studies

Used In America For Over 16 Years

Patented Technology

Non-Invasive Technology

# IV. Polarised light therapy

## HOW CAN BIOPTRON LIGHT THERAPY HELP YOU?

**BIOPTRON Pro 1** can be used as a complementary treatment for a variety of common conditions

### Pain relief

It can help to reduce the severity of symptoms in

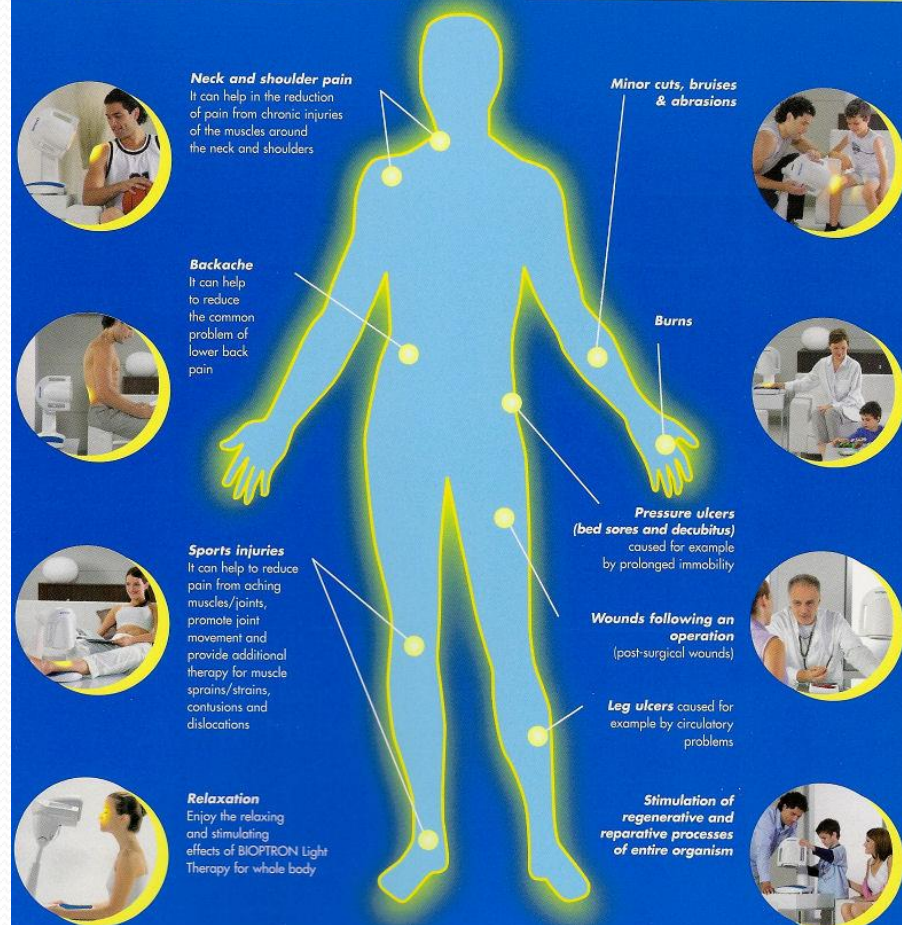
**Rheumatology, Physiotherapy and Sports Medicine:**

- Relieve pain or decrease its intensity
- Strengthen muscles and restore range of movement

### Wound healing

It can help to promote wound healing by:

- Encouraging the **growth of cells**
- Encouraging the **closure of wounds**
- Encouraging a **better quality of scar tissue**



**BIOPTRON Light** can be applied to any part of the body  
Examples of possible applications are shown in the figure

