PLASON® NO-Therapy device
PLASON®
NO-therapy

Medical device for NO-therapy

Medical technology on the basis of the use of air plasma and exogenous nitrogen oxide for the treatment of wounds, inflammatory processes, auto-immune diseases.

The exogenous nitrogen oxide of plasma-chemical genesis is contained in the high and low temperature gas flows (4000 °C to 20 °C), generated from atmospheric air.

The “PLASON” device doesn´t have analogous devices available worldwide.
Basic Types of the Device Usage

1 - Service block  
2 - Electro-hydro-pneumatic (EHP) supply  
3 - Manipulator  
4 - NO-containing gas flow supply tube  
5 - Variable end metallic tip  
6 - Cooler socket

Fig.3. Two operational versions of the device
Composition of atmospheric air

- 78% Nitrogen
- 21% Oxygen
- 1% Carbon dioxide, Argon, Water vapour and other gases

\[ N_2 + O_2 = 2NO - 181 \text{ kJ} \]

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Effect of NO on different parts of wound healing process

Alteration

- Microcirculatory reactions, exudation, neutrophilic increase
- Macrophagal activation
- Fibroblast proliferation, vascularization, granulation tissue growth
- Synthesis and assemblage of collagen fibrils
- Regeneration of epithelium
- Pathological scarring

Wound healing

- Decreasing
- Increasing
Pictures from the treatment of various types of pathologies

PLASON® - Therapy of Wounds by NO
Course of Healing of the Suppurated Burn Wound

Before treatment

After 7 days of NO-therapy (5 sessions)
Course of healing of the trophic venous ulcer by NO-therapy

Before treatment  21st day of NO-therapy (10 sessions)  After 2 months of NO-therapy
Broad necrotic suppurative ulcer on the back of the foot (diabetic peripheral neuropathy)

Before treatment

After 4.5 months of NO-therapy (3 courses of NO-therapy; 12 sessions per course)
Course of healing of the trophic venous ulcer by NO-therapy

- Therapy was conducted 5-6 times a week, application of NO for 5 – 10 minutes per session, temperature of plasma 4000 °C
- The duration of treatment was approximately 4 months
Course of healing of a varicose ulcer by NO-therapy
Course of healing of the trophic venous ulcer by NO-therapy
Course of healing of the trophic venous ulcer by NO-therapy
Course of healing of the trophic venous ulcer by NO-therapy
Course of healing of the diabetic foot by NO-therapy (Diabetes Mellitus I)

- Therapy was conducted 5-6 times a week, application of NO for 5 – 10 minutes per session, temperature of plasma 4000 °C
- The duration of treatment was approximately 4 months
Course of healing of the diabetic foot by NO-therapy (Diabetes Mellitus I)
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Course of healing of the post-radiation wound by NO-therapy

- Patient with skin melanoma, metastases into right axilla. Axilla was treated by 40 Gray radiation dose. Post-radiation wound was treated 5-6 times, application of NO for 4 minutes per session, temperature of plasma 4000 °C
Course of healing of the post-radiation wound by NO-therapy
Course of healing of the post-radiation wound by NO-therapy
Treatment of post-surgery wound infected by *Staphylococcus aureus* with NO-therapy

- Patient underwent the gastric banding. After the procedure a rupture of gastric wall occurred. Patient underwent surgical treatment, the wound got infected by *Staphylococcus aureus*, which was unsuccessfully treated by medicines.
- Approximately 100 sessions of NO-therapy by 5 minutes, the wound closed and the tests for *Staphylococcus aureus* were negative.
Treatment of post-surgery wound infected by *Staphylococcus aureus* with NO-therapy
Treatment of post-surgery wound infected by *Staphylococcus aureus* with NO-therapy
Course of healing of the infected post-surgery wound of tongue by NO-therapy

- Patient underwent surgery for cyst removal, wound infected, pain.
- 4 sessions of NO-therapy by 4 minutes, the wound closed, pain disappeared.
Course of healing of the infected post-surgery wound of tongue by NO-therapy
Course of healing of rheumatoid arthritis by NO-therapy

- Patient with rheumatoid arthritis complicated with fracture. Hand was painful, problematic movement, complicated usage, lack of sensitivity.
- Approximately 35 sessions of NO-therapy by 5 minutes, the swelling of the hand disappeared, sensitivity and movement capabilities were renewed.
Course of healing of rheumatoid arthritis by NO-therapy
Course of healing of rheumatoid arthritis by NO-therapy

- Patient with rheumatoid arthritis. Hand was painful, problematic movement, complicated usage, lack of sensitivity.
- Approximately 35 sessions of NO-therapy by 5 minutes per hand, the swelling of the hand disappeared, sensitivity and movement capabilities were renewed.
Course of healing of rheumatoid arthritis by NO-therapy
Course of healing of skin disorders by NO-therapy

- Patient with unspecific skin disorder
- 10 sessions of NO-therapy by 4 minutes, the skin disorder disappears continuously.
Course of healing of skin disorders by NO-therapy
Course of healing of skin disorders by NO-therapy

• Patient with skin eczema
• 10 sessions of NO-therapy by 5 minutes, the skin disorder disappears continuously.
Course of healing of skin disorders by NO-therapy
Course of healing of Herpes virus by NO-therapy

- Patient with herpes virus on eye lid
- 4 sessions of cold NO-therapy by 1 minute, herpes virus disappears continuously.
Course of healing of Herpes virus by NO-therapy
Course of healing of unspecified skin disorder by NO-therapy

- Patient with unspecified skin disorder in axillary region
- 15 sessions of cold NO-therapy by 3 minutes, skin disorder disappears continuously.
Course of healing of unspecified skin disorder by NO-therapy
Healing of hemorrhoids by NO-therapy

- Patients with hemorrhoid problem
- Anus is treated with hot NO-containing gas flow for 3 minutes, depending on the scale of problem 3-10 sessions are required
- No relapses in one year time of observation