

NITRIC OXIDE THERAPY

Plason

medical device for exogenous preparation of Nitric Oxide (NO)



Application of Nitric Oxide to various pathologies is the way to healing made easy

Plason

The Nitric Oxide therapy device

APPLIED TO WIDE RANGE OF PATHOLOGIES

Wounds, diabetic foot, burns,
trophic ulcers, etc.

GREAT POTENTIAL FOR NON-INVASIVE COSMETOLOGY

Nitric Oxide synthesises
and assembles collagen fibrils.

COMFORTABLE AND PAINLESS FOR PATIENTS

Blowing by warm air enriched
with Nitric Oxide

CLINICALLY EVALUATED

10,000+ patients treated

BASED ON FUNDAMENTAL SCIENCE

Nobel prize 1998

GENERATES NITRIC OXIDE FROM THE AIR

No consumables

APPROVED FOR USE IN EUROPE

CE Mark

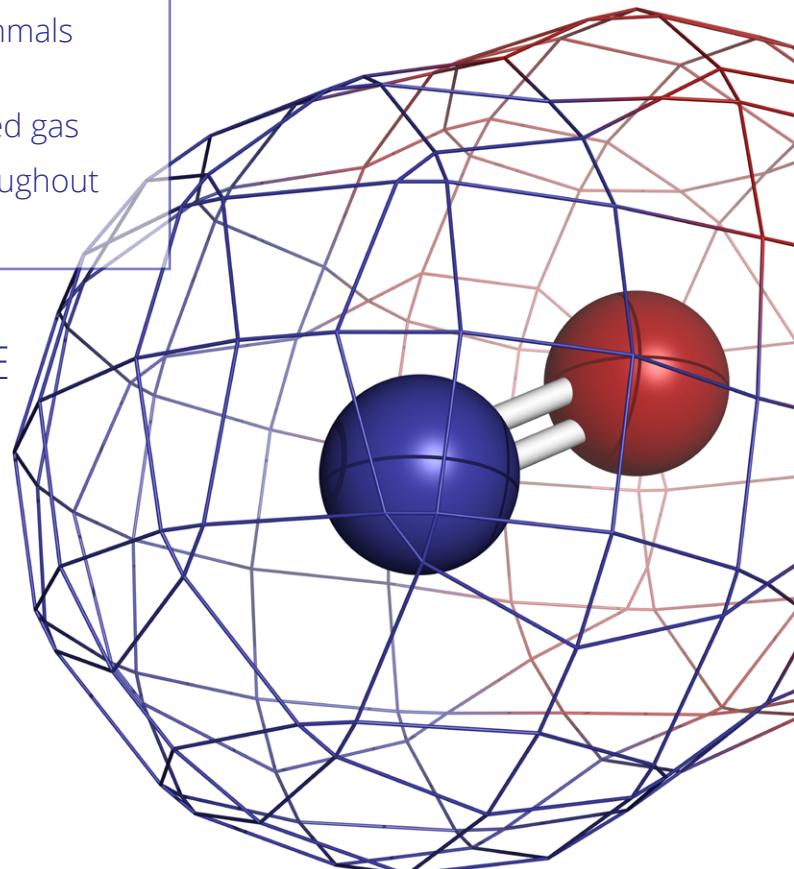


WHAT IS NITRIC OXIDE (NO)?

- **Nitric Oxide is a gas with the chemical formula NO**
- Serves as a signaling molecule in mammals including humans
- Is a short lived endogenously produced gas
- Plays a primarily therapeutic role throughout the body

IMPORTANCE OF NITRIC OXIDE

- Protects body from disease, infections and inflammations
- Synchronizes internal cellular rhythms
- Scavenges free radicals in the body
- Promotes better vascular flow and a healthy heart
- Enhances cellular vitality and fluidity



ENDOGENOUS AND EXOGENOUS NO

Endogenous Nitric Oxide is biosynthesized in living organisms including humans

NO is an important regulator and mediator of numerous processes in the nervous, immune, and cardiovascular systems

Exogenous Nitric Oxide is synthesized as a result of chemical or physical processes

It can be delivered to organism in form of:

- Gaseous NO generated from air in plasma torch (Plason)
- Gaseous NO from balloon
- Gaseous NO generated in chemical reactions
- NO released from drugs & supplements

SHORT HISTORY OF NITRIC OXIDE

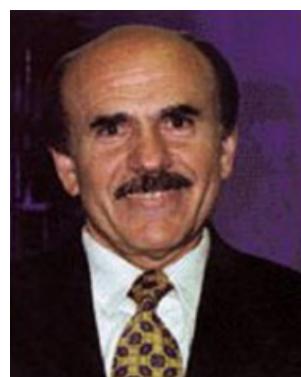
1980 Biological functions of Nitric Oxide discovered

1992 **Molecule of the year** by the journal Science – as the first gas to behave as a biological messenger molecule

1998 **Nobel Prize for Physiology and Medicine** for discovering the role of Nitric Oxide as a cardiovascular signaling molecule



Ferid Murad



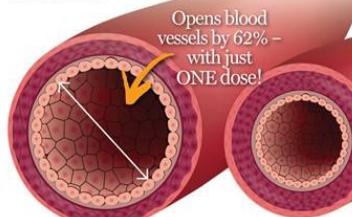
Louis J Ignarro



Robert Furchtgott

Nitric Oxide “Miracle Molecule”

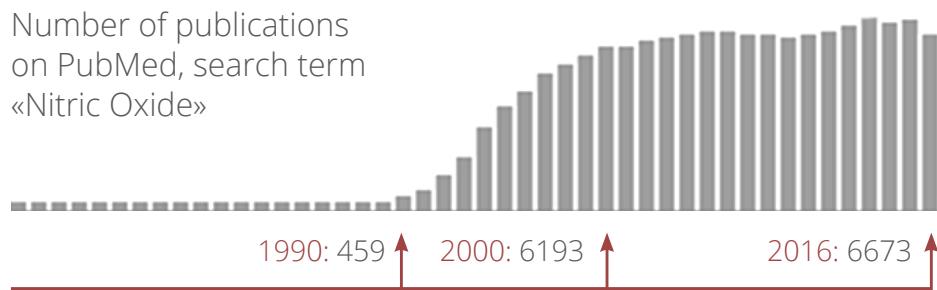
Winner of the Nobel Prize
in Medicine



2000 Plason Nitric Oxide first clinically applied in Russia

2017 Medical researches are going on:

Number of publications
on PubMed, search term
«Nitric Oxide»





ORIGINALLY, PLASON WAS A PLASMA SCALPEL...

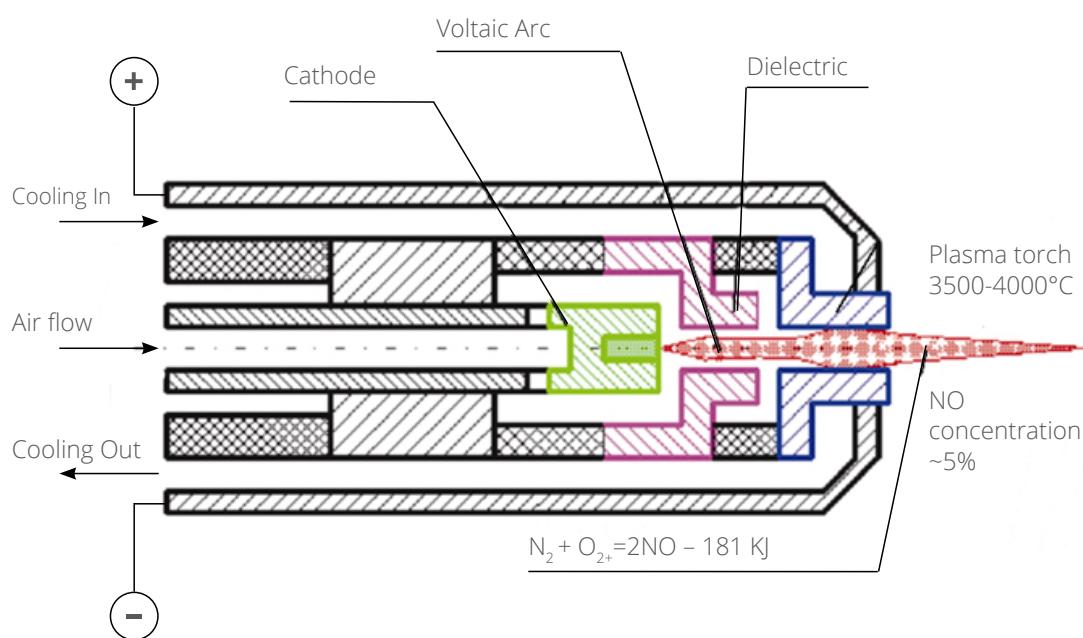
**The device was invented in
Bauman Moscow State Technical University**

- Plason originally was designed in middle 80s as surgical instrument for wounds healing in the battlefield. It must work on free air, not argon or helium, because of its high availability.
- Russian Military Medicine Service uses Plason since 1998. Then civil hospitals applied Plason for long-term unhealed postoperative wounds.



- Once doctor treated the wound not by plasma itself but by cooled air flow below plasma torch – and the wound healed up quickly.
- Then scientists discovered high Nitric Oxide concentration in the air flow – thus Nitric Oxide was invented.

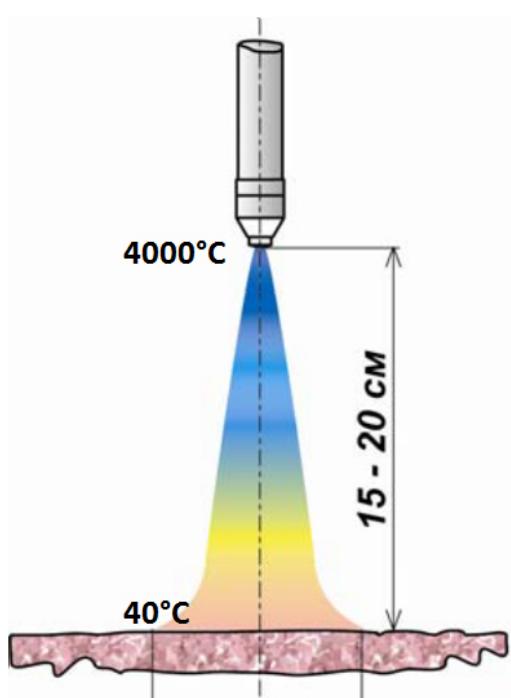
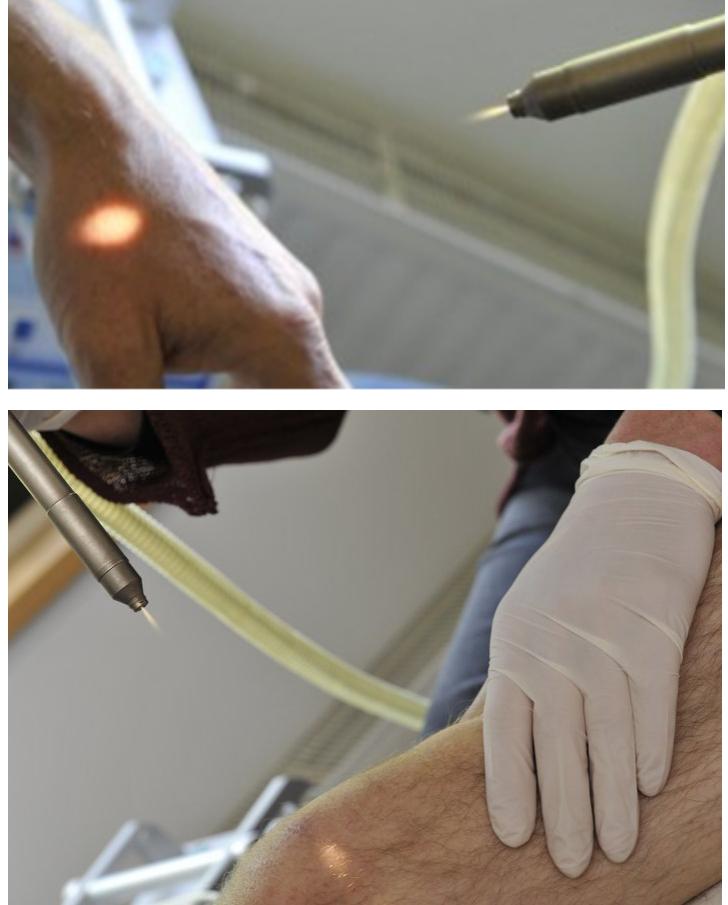
PRINCIPLE OF OPERATION



TREATMENT PROCEDURE

- Operator directs air flow from the appropriate distance (15-20 cm) onto the wound, ulcer, skin disorder area etc.
- Time of procedure depends on type and size of pathology.
- Usually it takes 30-60 seconds per 1 sq. cm of healed surface.
- Average number of procedures is from 5 to 15.
- Procedure can be delivered by nurse or paramedic stuff, not only by doctors.

Spot light just shows where air flow is applied to. Plasma «light sabre» doesn't touch patient's body during Nitric Oxide therapy.



EFFECT OF APPLICATION OF EXOGENOUS NITRIC OXIDE

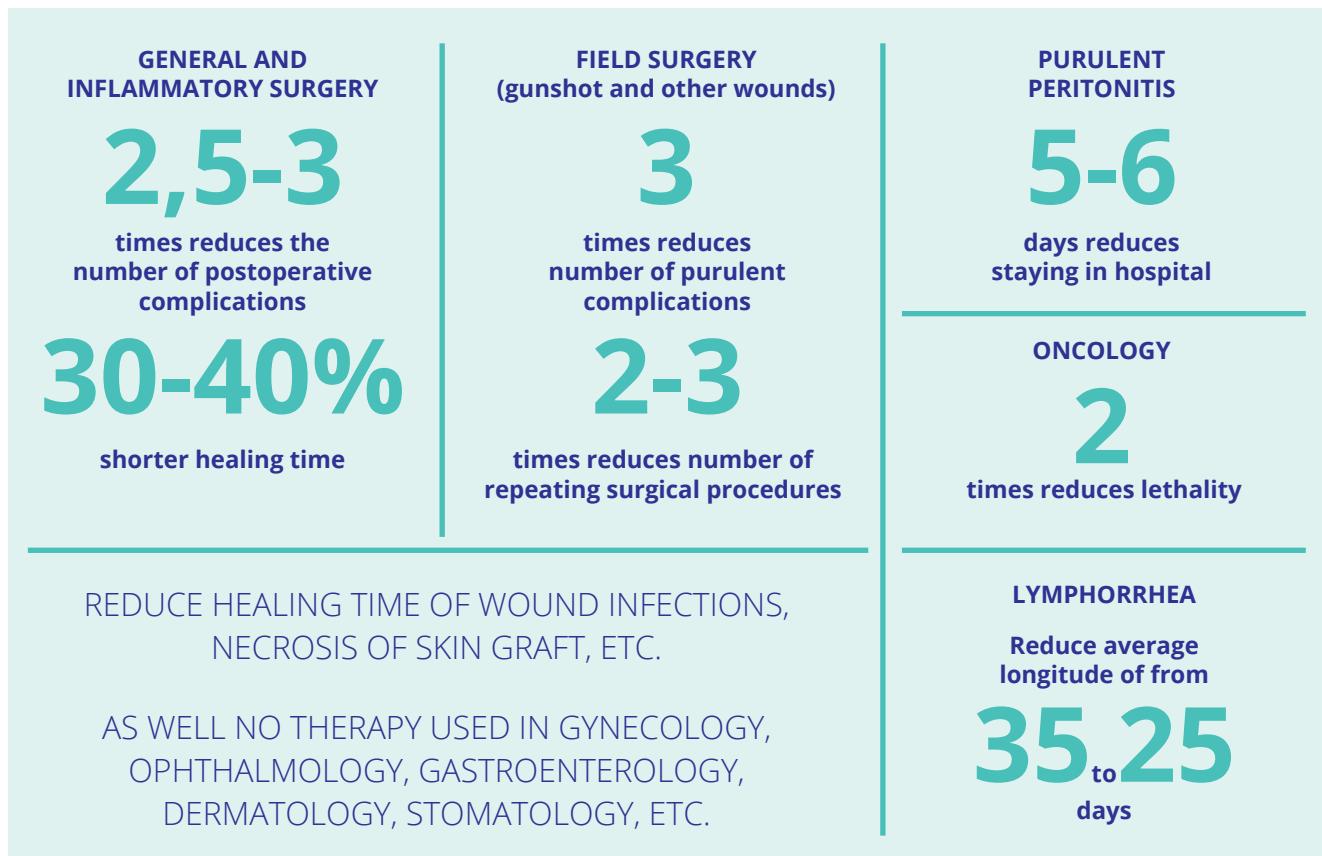
- It's important that exogenous NO can be applied to desires spot of the human body.
- It demonstrates the same properties as endogenous NO, that makes its usage is more flexible for various pathologies.
- NO penetrates through the skin into the depth of few millimeters and improves vasoconstriction of vessels.



NITRIC OXIDE CAN BE USED FOR TREATMENT OF:

- **Non-healing wounds**
- **Diabetic foot syndrome**
- **Inflammations**
- **Trophic ulcers**
- **Rheumatoid arthritis**
- **Eczemas and skin diseases**
- **Herpes simplex sores**
- **Infected wounds including *Staphylococcus Aureus***
- **Burns, pyonecrotic wounds**

NITRIC OXIDE PROVEN EFFECTIVENESS



**CLINICALLY VERIFIED –
MORE THAN 10 000 PATIENTS
TREATED**

IN 2003 WORK «DEVELOPMENT AND PUTTING INTO MEDICAL PRACTICE OF NEW THERAPEUTIC TECHNOLOGIES AND TECHNICAL EQUIPMENT ON THE BASIS OF THE USE OF AIR PLASMA AND EXOGENOUS NITROGEN OXIDE» WAS HONORED THE REWARD OF THE GOVERNMENT OF THE RUSSIAN FEDERATION IN THE AREA OF SCIENCE AND TECHNOLOGY



PLASON IN EUROPE

**SINCE 2009
PLASON IS CE MARKED AND
SOLD THROUGH PARTNERS
ACROSS EUROPE.
RETAIL PRICE**

8,200 euro



DEVICE SPECIFICATION

| | |
|----------------------------------|---|
| Supply voltage |220 V |
| Maximum power consumption | 500 VA |
| Working gas | aspirated air |
| Maximum flow rate | 2,5 l / min |
| Time to operating mode | 3 sec |
| Length of flexible inlets | 1.3 m (4'3") |
| Overall dimensions | 225x190x328 mm (9"x7"x11") |
| Weight | 8.5 kg (18 ¾ lbs) |
| Cooling system | closed (Alcohol + water) |

Plason is a portable device, as long as there is the possibility to connect it to the electricity, it could be used anywhere. Usage would include rescue services, ambulances, hospitals, clinics, medical centers.

SURGICAL STAYS: SAVING WITH PLASON



TARGET AUDIENCE:

Hospital top managers – 5,564 **Surgeons** – 41,600
(U.S. Department of Labor, 2015)

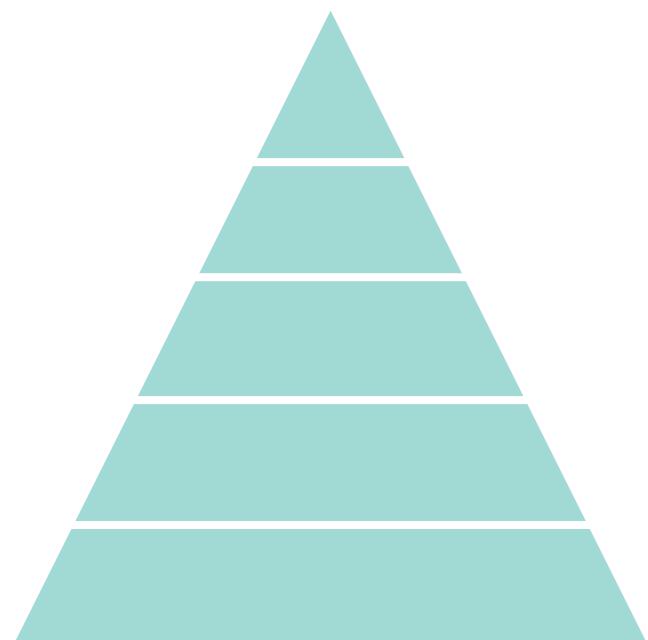


HEALTHCARE COST AND UTILIZATION PROJECT

In 2012, there were 36.5 million hospital stays in the United States, with an average length of stay of 4.5 days and an average cost of \$10,400 per stay.

About 56% of hospital stays in 2012 were medical, 21.8% were surgical, and 22.2% were maternal or neonatal.

COMPETITION LANDSCAPE



PRODUCT ANALOGUES (LIKE GENOSYS, NU-MED)

Direct competitors. Very few on the market.
Most of them on research or clinical trial stage.

GAS DELIVERY SYSTEMS (EKU-ELLEKTRONIK, INOMAX, INOPULSE)

They use NO from balloons primarily for inhalations.
Limited to respiratory diseases like ARDS, persistent pulmonary hypertension and neonatology.

NO-RELEASING DRUGS – MANY VENDORS

More simple to use. Cannot act on targeted spot.

OTHER INNOVATIONS

There is big progress in wound healing and in medicine in general. Doctors have to choose among many options.

TRADITIONAL TREATMENT METHODS

Healthcare is highly regulated and conservative field.
Doctors prefer traditional methods even ineffective.