

Procaine Neural Therapy



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Procaine

1893 Sigmund Freud discovers anesthetic effect of topical cocaine and recognizes its therapeutic possibilities.

1905 Alfred Einhorn discovers Procaine “novocaine” and used in clinical practice soon “New- cocaine” caine-alkaloids used for anaesthesia

1906 Vishnevsky discovered anti-inflammatory effects and was using procaine for trigeminal neuralgia, migraines, fractures, post-op pain

1925 “therapeutic anesthesia” using Intradermal, IM and neural infiltrations

1926 Ferdinand Huneke successfully treated a patient's chronic migraine headache which had been until then intractable.

By 1950 there was a large amount of documented non-aesthetic effects

Ana Aslan - anti-aging benefits and uses in geriatric population

Procaine

Procaine is an ester anesthetic, short acting it is used for reducing painful symptoms of various types, and it is widely used in infiltration, block, epidural, and spinal cord anesthesia, and for potentiating activity of basic drugs during general anesthesia

Drug concentration decreases rapidly following termination of the infusion the drug disappeared with a distribution half-life ($t_{1/2}$ alpha) of 2.49 +/- 0.36 minutes and an elimination half-life ($t_{1/2}$ beta) of 7.69 +/- 0.99 minutes at both infusion rates

It is metabolized in the plasma by the enzyme pseudocholinesterase through hydrolysis into para-aminobenzoic acid (PABA), which is then excreted by the kidneys into the urine.

IV infusion of 2% Procaine-Steady State Plasma level is achieved in 20-30 mins

A microscopic view of several red blood cells, showing their characteristic biconcave disc shape and reddish color. The cells are in focus, with some appearing more prominent than others.

Procaine

Procaine is able to bind to membrane constituents and interact with a series of ion channels exerting its anesthetic action, as well as on epigenetic regulation.

Procaine has an antioxidant property supported by experimental studies regarding the inhibition of ROS generation and lipid peroxidation, in enzymatic and nonenzymatic systems. Several studies confirm its involvement in mitigating cellular and systemic oxidative stress, acting on the main targets of aging and age-related diseases: cell membranes, lipoproteins, mitochondria, and DNA.

Procaine reaffirmed its antioxidant and cytoprotective actions in experimental models of myocardial ischemia/reperfusion injury, endothelial-dependent vasorelaxation, inflammation, sepsis,



How Neural Therapy Works

Neural therapy is a gentle healing method that consists of injecting a local anesthetic (most commonly procaine) into certain areas of the body in low doses. The aim is to repair a damaged portion of skin which is sending signals of pain to the autonomic nervous system (ANS).

One of the very special and unique qualities of neural therapy, is that procaine is metabolized into DMAE and PABA, which are nutritive to the nerves, act as co-factors to help facilitate metabolism, offer anti-oxidant support, and have known anti-aging qualities.

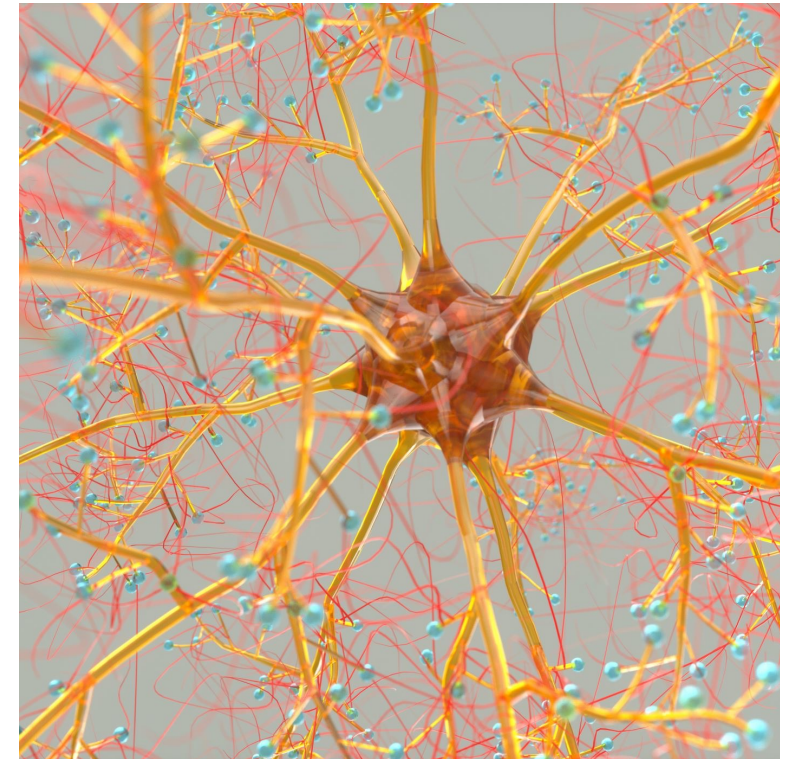
Vasodilator- Reduction of inflammation and Pain Relief

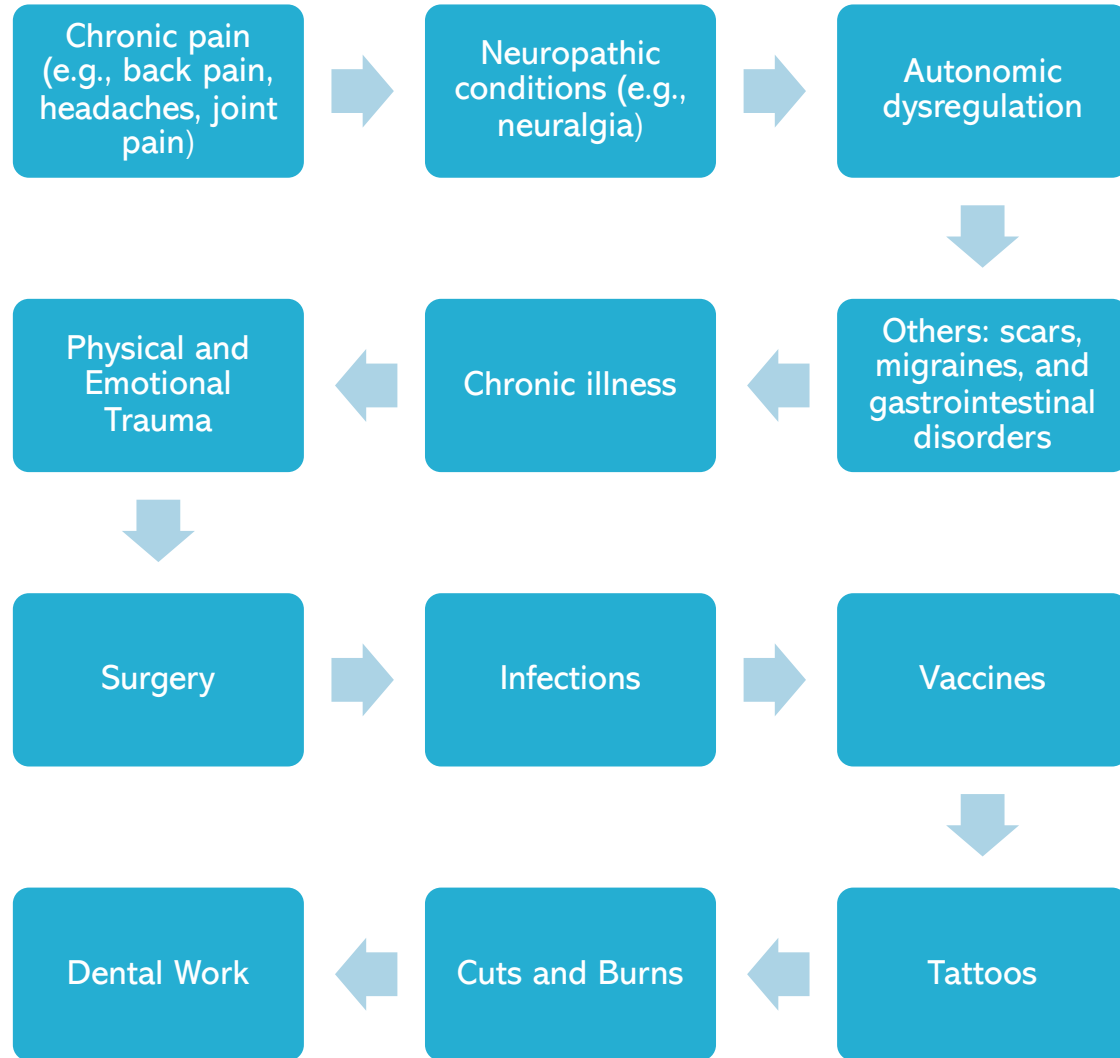
Neural Therapy

Autonomic Nervous System is part of our central nervous system. This includes, breathing, digestion, metabolism, regulating body temperature, hormone production, circulation, immune function

Every cell in our bodies is connected to and controlled by the ANS. When there's trauma in a certain area of the body, the ANS increases circulation to that area. If the circulation doesn't eventually return to normal, interference fields develop.

Scar tissue is one of the most common causes of interference fields. The damaged tissue creates an abnormal signal within the ANS, which is then transmitted throughout the body.





Conditions Treated with Neural Therapy

Intra-Dermal Injections

Small gauge needle

Injections follow the path of the dermatome associated with pain

Dosing: 1-2% procaine

1-5 mls total; up to 7-10 depending on size of area

Repeat with 20 gamma Ozone

Acoustic

Frequency- Twice weekly x 6 treatments

Injections 1 weekly

Can use with scars



Neural Therapy

Procaine

Peptides

Ozone

IV Procedure

Dosing

10mL 2% Procaine with 20mL
Sodium Bicarbonate

Frequency: 1-2x treatments per week

Infuse over 30-60 mins, adjust gtt
rate as patient tolerates

Supplies:

- 1 -vial of 2% Procaine (10mL)
- 1- vial Sodium Bicarbonate (20mL)
- 1 -5-10 mL syringe
- 1 -18 g needle
- 1 -250-500 bag of Normal Saline
- 1 -IV start kit
- 1 -Set of primary tubing (unfiltered)
- 1 -20g or 22g peripheral IV cath
- 2-4 2x2 gauze pads
- Tape/band-aids



Safety and Side Effects



Common side effects from Subdural injections, IV, IM (e.g., mild discomfort, bruising)

Dizziness

Headache

Nausea

Chest Pain



Contraindications and precautions for certain populations

Cancer (lymphatic spread could be facilitated)

Genetic illness

Nutritional deficiency

Diabetes (it can become unstable from neural therapy)

Tuberculosis

Psychiatric illness, except depression

Case Study #1

42 year old female; RN, Husband is pilot, blended family

Hx: Menopause post op removal of ovaries (not uterus), chronic migraines, post-partium depression, major depressive disorder, PCOS, hypothyroidism

Medications: synthroid, Trintellix, progesterone, Seroquel, Vyvanse

Treatment Plan: Procaine series of 4 Ivs to help with chronic depression, trouble sleeping and chronic pain

Case Study #2

53 yo Female, Attorney married to attorney

PMH: insomnia, joint pain, psoriatic arthritis, perimenopausal

Medications: Tesamorelin, Tirzepatide, LDN, Progesterone, Rapamycin, metformin, levothyroxine, BPC-157, HRT

Tx Plan: 2 rounds of IV Procaine (8 total treatments)

Significant improvement in sleep



Case Study #3

74 yo Female

PMH: hx of breast cancer, Thoracic Spinal stroke post knee replacement, Hypertension

peptide: take bpc-157 1 capsule a day. slight joint pain. increase to 2 a day for the next 30 days.

ARA 290-50 units 2x a week

Pentosan- 50 units 2x week

Thymosin beta 4 daily 25 units- take a 2 week break can restart after break to cycle

Thymulin

Ozone- high dose 1x weekly

NAD+ once a month IV 100mL start next week on different day than ozone

Cerebrolysin- help with BDNF, Regeneration CNS,

5ml IV daily for 5 days 2 day break for 2 weeks

1ml sq daily for 6 weeks.

1. Procaine 2% + Sodium Bicarbonate 1 x a week x 4 weeks

2. Met-enkephalin 10ml via IV infusion after Procaine Infusion

3. SS-31

a. 1mL SQ 5 days a week for 4-6 weeks

Case Study

#4

76 yo Female

Chief Complaint:

- expresses concerns about experiencing cognitive decline and worries about her brain function.

Medical History:

- Diagnosed with estrogen-driven breast cancer in 2000, followed by a double mastectomy.
- Currently on an estrogen blocker for three years, potentially contributing to cognitive decline.
- History of breast cancer, depression, and anxiety.
- Lymphedema present in the right arm, limiting IV administration to the left arm only.
- Experiences congestion due to allergies to dust and mold; denies any allergies to prescription medications.
- Family history includes strokes and diabetes.
- Non-tobacco user, consumes alcohol occasionally.

Current Medications:

- Metoprolol for blood pressure.
- Trazodone for sleep.
- Amlodipine for blood pressure.
- Exemestane as an estrogen blocker.
- Liothyronine for thyroid issues.
- Atorvastatin for cholesterol management.
- Various supplements, including glutathione (to be discontinued due to presence in IV treatments).

Treatment Plan: Cerebrolyin 5ml IV push, in 60ml of NS

Procaine 10ml of 2% and 20ml of Sodium bicarb in 250ml of Saline

Metkentanaphin 10mls in 250ml of Ns

glutaione iv push 200mg flush with saline



Integration with Functional Medicine

Multiple patients who want to transition off anti-depressants

- Treatment Plan:
- IV Procaine series; MB weaning off anti-depressants

Scar protocols

Aesthetics

Joints