SCENAR – For acute and chronic pain! - And what about chronic illness?

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Medicine has developed rapidly over the last decades. The benefits and capabilities of 'acute medicine' are incredible. When it comes to chronic pain and chronic illness medicine takes the 'management approach': patients have to live with their illness with little hope of healing or living without medication. Conventional medicine, however, achieved very impressive results with electrical stimulations.

The delay in using physical means for chronic illness is due to Abraham Flexner. His report from 1910 [1] recommended to only accept medical schools in America which taught the use of pharmaceutical therapies. Medical schools focussing on other medical modalities like bio-physical, homoeopathic or manual treatments were systematically closed between 1910 and 1935: these were 89 out of 155 schools! It does not surprise to learn that Flexner worked for the Carnegie Foundation which was solely sponsored by John D. Rockefeller who had monetary interest not only in oil but also in chemical and pharmaceutical plants.

These days electric stimulators get implanted, be it a pacemaker for the heart (arrhythmias), for the brain (epilepsy, dementia, Parkinson's disease), and for the stomach (slow-transit constipation) [2]. The most spectacular results recently were the implants of stimulators at the spinal cord for paraplegics – and their ability to move their limbs only while the nerves were stimulated electrically [3]. And another noteworthy approach is for the treatment of glioblastoma: the Novo TTF uses an electric field around the head 24/7 to successfully disturb faster growing tumour cells from dividing normally. Cells divide into several fragments rather than 2 equal cells [4]. They even trial electro-oncology using the phenomenon of electroporation to concentrate chemo therapeutics in the tumour with pulsed electromagnetic frequencies (PEMF) [5].

SCENAR is a medical device and medicine is a science. By deduction with the knowledge we have gained over the last 2-3 decades we can explain the possible mechanisms of SCENAR application [6]. Medicine is, however, an 'empirical science'. That means that medicine advances with 'trial and error'. Any observations that help heal a patient will be integrated into a theory. Clinical trials and statistical evaluations of the results follow. Usually everything gets published in a peer-reviewed medical magazine with the idea that other medical practitioners or researchers can apply the method to their patients and see if they can reproduce the same results.
This system is not fool-proved and has over the last years attracted a lot of criticism. It is however the gold standard at present and we as SCENAR practitioners have to adhere to these rules if we want to get SCENAR accepted and integrated into general medicine.
This article is written to challenge the SCENAR community: are we doing everything necessary to push SCENAR into the 'medical limelight'? Are we using proper scientific means to check the validity of the sometimes hard to believe claims about the effectiveness of SCENAR? And if the answer to these questions is 'no' what can be done to achieve this? I will highlight the issue with some case studies in the presentation.

The aims of this article are

- to show how SCENAR works in praxis
- to show how SCENAR can work by deduction
- to show that SCENAR achieves long-term results
- to convince conventional medical practitioners to use or prescribe SCENAR
- to find out if SCENAR works for chronic illness

All we know about SCENAR we know from

- RITM SCENAR library
- RITM SCENAR training courses
- other medical studies that overlap with SCENAR application like
    - acupuncture
    - TENS application
- own experience

Usually the SCENAR effects on the human body are described as

- in general:
    - endorphins
    - neuropeptides
    - reflex-biofeedback
    - electroporation
- in chronic disease/pain:
    - reintroducing original pathology
    - influencing the autonomous nervous system
    - improve functionality e.g. joints
- depending on the type of application:
    - vibrational massage
    - needle-less acupuncture
    - meridian therapy
    - trigger point therapy
    - chakra therapy
    - various specialised protocols

The principles of the effects of SCENAR application have been described earlier [7 8 9]. We have evidence that TENS application releases endorphins and neuropeptides from C-fibres in the skin [10]. Hence, SCENAR termed as handheld TENS device is accepted by governing bodies like FDA (USA), TGA (Australia), MedSafe (New Zealand) and in many other countries by the appropriate authorities there, as a pain relief device.

However, endorphin and neuropeptide release [11] are important findings – and naturally – it appeals to conventional medicine who is more (bio-) chemically orientated than (bio-) physically. It seems though that the findings of neuropeptide and endorphin release are only based on studies by professor emeritus Ji-Sheng Han [12] – at least his works gets always cited when the mechanisms of SCENAR are explained. Professor Han wanted to demonstrate the physiological mechanisms of

acupuncture. He found that there is a higher endorphin release when doing electro-acupuncture compared to 'just acupuncture'. Han also found that applying TENS with sticky pads over acupuncture points has the same strong effect than electro-acupuncture. However, there is to my knowledge no comparison between TENS and SCENAR with regards to endorphin and neuropeptide release. I could not find an English publication. I would expect with the nerve-like signal from the SCENAR there would be a stronger endorphin release than with a simple TENS device. And we also have to ask if there are similar differences in endorphin release depending on the frequency we apply with the SCENAR. Han found for example that low frequencies (2-5Hz) releases endorphins that do a longer lasting pain relief while higher frequencies (100-120Hz) do a fast pain relief.

The biochemical effects of TENS applications are well documented: there are thousands of articles published in peer-reviewed medical literature about electrical treatments (more than 6000 about TENS alone – PubMed June 2014). All of them explain in detail the beneficial effects of TENS application and the physiological pathways in humans [13].
Reviews in 2008 (meta-study) by Walsh et al. [14] was however unable to confirm beneficial effects of TENS in acute pain and by Nnoaham at al. [15] for chronic pain – mainly due to bad study design or insufficient number of participants. That's the point where doctors usually step back – if TENS does not work and we cannot show that SCENAR is better than TENS they don't want to know.

We have a similar issue with SCENAR and the neuropeptides: again the only study that makes a connection between TENS application and the release of neuropeptides is one done by Ji-Sheng Han [16]. And it involves a TENS and not a SCENAR device. Neuropeptides have been described by Candice Pert as the 'Molecules of Emotion [17] and by some authors as molecules that initiate healing in salamanders []. The authors of the German 'SCENAR Textbook and Atlas', Engelbert and Scherer, mention that 2000 (two thousand) different neuropeptides get released through SCENAR application – however, they do not cite a source for this claim. I think that the issue around the functions of neuropeptides is not quite encompassed yet. And if we SCENAR practitioners mean endorphins when we say neuropeptides we should just stick to endorphins.

Moving on to the issue of reflex-biofeedback: Theoretically the 'Pain Gate Theory' [18] also fits well with SCENAR applications (vibrational massage – friction) and its alleged biofeedback capabilities [19]. Biofeedback as used in medicine these days usually incorporates the involvement of the conscious mind when it comes to therapy: e.g. relaxation techniques for migraine of hypertension. There are of course many biofeedback devices used in diagnostics like Electromyography (EMG), measurements of blood pressure, temperature, skin resistance, heart rate variability and weight etc. The concept of reflex-biofeedback as described in Russian literature is less accepted in western medicine. There is a nice article on the internet entitled 'The Concept of Biofeedback' [20] with strong reference to SCENAR. Unfortunately the author is unknown and we don't know if it is genuine. It gives however a good explanation how reflex-biofeedback might work. So, is biofeedback with regards to SCENAR application a theory or are there any studies done that give a hint or even prove that it is real?

Let's look at the concept of electroporation as described by the founders of SCENAR therapy [21]. This concept was also emphasised at the 2012 SCENAR conference in Australia by Michael Ukanafov in his presentation 'SCENAR: the secrets of efficiency'. He mentioned that the physiological effects in 'soft' reverse electroporation are:
on cellular level:

- cell metabolism acceleration,
- cells activation,
- increase in production and acceleration of proliferation

on tissue level:

- improves functionality of microvasculature,
- increases the perfusion of tissue fluid,
- accelerates the immune reaction,
- increases the level of anti-oxidative enzymes,
- decreases the inflammatory process,
- inhibit oxidative stress.

Unfortunately there was no mention of underlying studies and I could not retrace the origin of his insights.

Electroporation, however, is now used in conventional medicine to do electro-oncology: applying pulsed electro-magnetic frequencies after chemotherapy in order to increase the uptake of chemo-therapeutic pharmaceuticals into the malignant cell [22,23].
Does that mean that we are doing 'good' when applying SCENAR to cancer patients when on chemo-therapy? And what 'good' are we doing when we treat a patient on no pharmaceutical therapy with regards to electroporation?

The re-introduction of the original pathology with chronic pain as a concept makes sense, too. It probably ties in with the pain gate theory and with the reflex-biofeedback mechanism described earlier: stimulation of the afferent nerve, relayed in the spinal cord to efferent nerve and to brain with a reflexogenic response via the efferent nerve. Therefore it does not astonish that we sometimes have a worsening reaction before we see improvement. Let me ask if it is a good prognostic sign when we see a deterioration before an improvement? And is it a bad long-term prognostic sign if we just see improvement?

The influence of the autonomous nervous system through SCENAR therapy is always highlighted. And there are many protocols that are recommended to stimulate or relax either sympathetic or parasympathetic activities. From own experience I can say that some of the protocols do what they suggest –often these protocols don't have the desired effect. Here we need more guidance from more experienced SCENAR practitioners. And again I ask if studies have been undertaken to support these claims that certain protocols do have the predicted effects and how was that measured.

We know that physical pain and emotional pain use the same anatomical pathways in the body to relay its state to and within the brain [24]. Taking an Aspirin does not only give a pain relief but it also lifts the mood – to the point that in the 1980s in Germany Bayer tried to get Aspirin registered as anti-depressive drug.
In my clinic I use SCENAR to prepare clients to do talk therapy. I use a one session 'Rapid Depression Treatment' developed by Des Shinnick [25]. At present we are running a randomised clinical trial with the University of Auckland under the auspice of Bruce Arroll to show its effectiveness [26]. Expect some results in a year or so. I get good results with the RDT especially if I use the info-cleanse at the beginning and finish the session with an abdominal protocol e.g. a low frequencies magic square.

All of the Russian papers published in the RITM SCENAR Library about the effects of SCENAR - whether they deal with pain relief or chronic disease - pose the same issues: the methods of SCENAR applications are not reported and raw data are missing, too. I also suspect that these 'papers' have been 'translated' by a computer program judging by the bumpy English it generated.

In my opinion this is one of the greatest pitfalls when we as SCENAR practitioners want to get SCENAR into mainstream medicine. Can we please get better translations of the complete papers for future reference? It is important to have these papers if we want to convince conservative medical practitioners to work with us SCENAR practitioners, to give SCENAR a foothold in complementary therapy.

My biggest concerns are about the treatment of other acute and chronic diseases – to get more indications than just 'pain relief'. All the other 'beneficial' (side-) effects on other medical conditions as summarised by Yuri Gorfinkel [27] and J. Z. Grinberg [28] do not seem to get the recognition they deserve. The results they published sound incredible. Unfortunately they – again - did not publish the details how they achieved these results – which would make them reproducible - and any evidence that would have supported his claims. And again: documents in the RITM library do not shed light into the treatment methods and the study results are sketchy – missing the data of how that improvement has been ascertained.

As mentioned before Prof Je-Shing Han showed that TENS is as good as electro-acupuncture (and both are better than simple acupuncture) [29]. If SCENAR is as good or even better as TENS application SCENAR could be used as widely as acupuncture. That would dramatically widen the field of possible SCENAR applications – and most likely be funded: even in conservative New Zealand ACC (Accident Compensation Cooperation) pays for acupuncture therapy of their clients – as do a few private health insurers. In his report and recommendation of acupuncture which was accepted by the World Health Organisation Dr Xiaorui Zhang gave an impressively long list of indications [30].

What I present now has largely been discovered over the last 20-30 years or so and has not yet found its way into conventional medicine. Over the last decades, however, mainstream science (including medical science) has uncovered a few phenomena that explain how these methods might have the observed effect, giving us a scientific base amongst others for SCENAR [31]. These findings are coming from biology, physiology, physics including quantum-physics and even astrophysics, psychology, neuro-immunology and others. Strange that medicine, although labelled a science but really being an 'empirical science', does not jump immediately on to it and using it to the benefit of their patients. Anyway, even mainstream science is most likely starting to just scratch the surface. The phenomena 'life' and 'death' and anything in between covering 'health' and 'disease' are so complex that we might never understand it fully.

Discoveries about the workings of the human body and the biochemical reactions within the cells have been made by destroying the cell membrane and pouring its contents into a dish to analyse 'what's in the bag'. New technologies make it possible to look at the structure of the cell – the

cytoskeleton and how this responds to external stimuli. The cytoskeleton is bedded into the surrounding structures and connected to them by integrins: desmosoms, tonofilaments, anchoring fibrils all connect to the collagen forming a continuous fibrous matrix throughout the entire body and extending all the way to the skin [32, 33, 34].

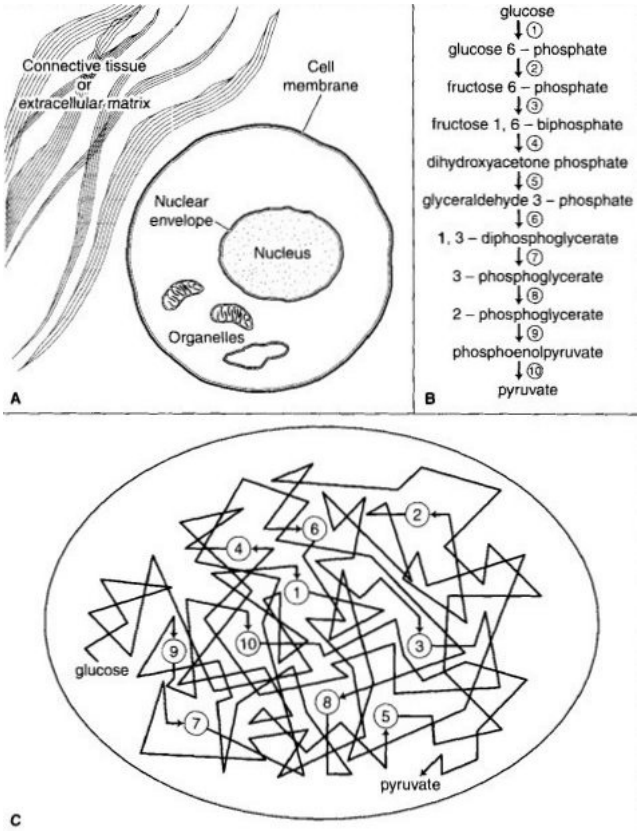

Fig. 1

A. Cells are often illustrated looking empty. And the cell is embedded in connective tissue or extracellular matrix.

B. Glycolysis: the ten glycolytic enzymes convert glucose into pyruvate in a series of steps.

C. The 'bag of solution model' of a cell give the impression, that for instance those glycolytic enzymes are floating around randomly bumping into their next target molecule [35]

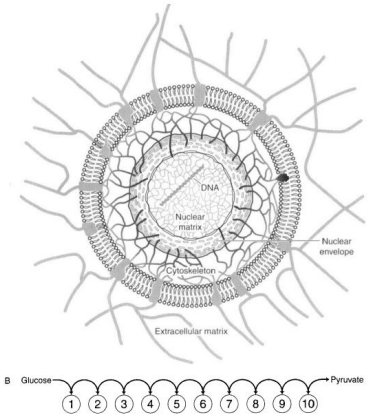

Fig 2.

A. A more contemporary image of a cell with its connections to the surrounding living matrix. There is also a nuclear matrix that supports genetic material.

B. The enzymes of the glycolytic pathway seems to be lying in sequence along the cytoskeletal structures.

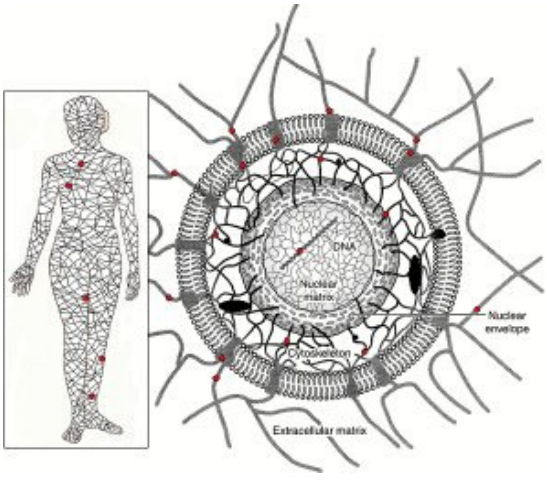

Fig. 3

It is now evident that we can influence the cell through the living matrix with SCENAR as this network of extends all the way to the skin.

That there is a connection between spinal nerve segments, certain skin areas and internal organs has been described already in 1893 by Sir Henry Head [36, 37, 38]: Head' Zones are areas that are connected to internal organs and can be influenced through stimulation of the skin. These areas might be specifically connected to the cytoskeleton of the cells of their corresponding organs.

Robert O. Becker [39] described the properties of the connective tissue layers around the nervous system, called the perineurium. He describes a 'dual nervous system' composed of the classical digital (all or none) nerve network, the focus of modern neurophysiology, and the evolutionary more ancient perineural system. It sets up a low voltage direct current after injury which controls the injury repair. There are (at least) two com
munication systems within the body: the chemical and the energetic. Chemical regulation is by hormones, neurotransmitters, neuropeptides and the like, energetic regulation is by energy-flow, be it electron- (electricity) or photon-flow (proticity) or both or even sound (phonons) [40].

Alfred Popp [41] identified photons being emitted from every living cell – speculating that these photons in solution contain information that can influence bio-chemical components.

Nobel-prize winner Luc Montagnier [42] did an interesting experiment – and thereby shedding light into the mysteries of homeopathy: DNA in a solution leaves an informational imprint in the water even once the DNA has been removed completely. If you add the components into the imprinted water DNA starts to reassemble again. The effect increases up to a 9-fold dilution and then weakens with any further dilution. It's not the molecule that has been originally used in the homeopathic remedy – it's simply the imprint in the water that causes the beneficial effect when the remedy is applied.

James Oshman [43] summed up the description of the body as a liquid crystalline structure that can be influenced by energy – like SCENAR application.

Albert Szent-Györgyi [44] – winner of the Nobel prize in 1937 for the discovery of Vitamin C – suggested in the 1940 that molecules act as semiconductors (the stuff used in modern electronics) and his idea has been confirmed by studies Robert O. Becker. His findings of a direct current field could be the regulators of the semiconductors

Let's dig a bit deeper: the human body consists of an estimated 100 – 200 Trillion (100 to 200 10^{12}) cells. Each cell conducts a minimum of 200.000 chemical reactions per second to just keep up the demand of ATP – the chemical energy needed to 'run a cell'. If somebody ever asks you if you are busy – well, the heck you are whatever you do or don't do. And when we look even deeper we realise that we are made out of an estimated 8000 Quadrillion (8000 10^{15}) atoms. If you enlarge an atom like the hydrogen atom – the simplest of atoms – just consisting of a proton in the nucleus and an electron in the periphery – so that the nucleus is the size of a golf ball, then the size of the

electron would just be the tip of a sawing pin. There is a sphere around the proton where the electron can be zooming around the nucleus like the moon around earth. In this enlarged model of the hydrogen atom the electron can be as far away as 1.5 miles! [45] (BTW: If you shrink the sun to the size of a golf ball the earth would only be 9 inches away.) The conclusion for the human body is: we are made out of a lot of nothing. However, there is something in this vastness of nothing-ness: energy, the zero point field energy to be precise. This is a concept of astrophysics that seems to be repeated in living cells.

Lynne McTaggert described in her book 'The Field' [46] the many various experiments that have been done in the last twenty – to thirty years about energies and fields produced intentionally. Peter Fraser [47] mapped the entire Human Body Field and his findings are the base for the Nutri Energetic System that measures the HBF and treats deviations with energised colloidal minerals. All these discoveries give strong hints why the application of electrical therapies do have the observed effects. It also gives rise to warnings about the EMR pollution (Electro Magnetic Radiation) and critical voices have always warned: EMR from radar, high voltage power lines, cell phone towers and longterm cell phone use, WiFi etc. seem to have a bad influence on human health, too. [48, 49]

The more is discovered the more complex biology (and medicine) seems to get. How all these findings tie up with each other we can at this point just speculate. How much of these findings are relevant for SCENAR application is of course unknown, too.

These were more academic considerations – and certainly not all - about how and where SCENAR applications could influence human health. The more we know the more complex it seems to get and we often end with more questions than answers.

Although A.A. Karasev [50] and A.N. Revenko [51] both say explicitly that SCENAR is not a panacea. I think that with all the above mentioned possible influences SCENAR might have, it has the potential to be a panacea. We should go out there and establish if that might be true.

Looking at a more pragmatic approach we need to do some more studies (or publish Russian studies already done) if we as SCENAR community want to SCENAR therapy into main stream medicine – and more importantly if we want to promote SCENAR not only as pain relief tool but as a device for a holistic concept of healing.

There are discrepancies between contra-indications and studies in the RITM library:

- pregnancy is a contraindication, however Borovkova published her findings of SCENAR treatments in pregnant women [52]
- epilepsy seems to be an issue for many SCENAR practitioners although it is always mentioned that SCENAR has anticonvulsive properties [53]

A quick search of SCENAR and epilepsy on the internet highlights these issues. It is confusing for potential patients and practitioners when those contradictory statements are found.
The same applies to the patients with cardiac pacemakers: if the SCENAR impulse only travels 5-7mm into the skin what harm can it do to a pacemaker? Since the MRI has been developed there are

more patients with shielded pacemakers so that they can have an MRI examination without disturbing the pacemaker activity anyway.
I wish we would clarify those confusing statements for the public – regardless how we handle those issues internally.

Here are a few suggestions of how we could work together as SCENAR practitioners, collecting information globally and come up with some recommendations:

Harold Saxton Burr noted electrical changes happen at the onset of disease – once picked up early we can possibly prevent disease developing. We know that these changes project themselves to the surface of the skin and can be picked up as active points or asymmetries. Is SCENAR a tool to pick up these changes (via IRs) and find a pattern for certain symptoms?
I think that may be true. I noticed a pattern in my patients with head injuries: they all have high IRs in the left paravertebral thoracic area at position 5 or 7 of the 3+6 in D=1. However they all display different symptoms: from chronic headaches over chronic fatigue to high blood pressure and more. If we wanted to find such patterns we would need higher patient numbers.
Suggestion 1: should we globally pool findings to see if there are patterns between diseases or symptoms and findings in IR-distribution – and if so which?

In 1952 the German physicist Winfried Otto Schumann predicted mathematically a global electromagnetic resonance phenomenon. Fuelled by lightning strikes a field is generated between the surface of the earth and the ionosphere (~100 km above ground) which peaks in the extreme low frequency (ELF) range at 7.83 Hz. If we compare this to the frequencies measured in an EEG we find a correlation to alpha waves [54]. Now we are getting back to rhythms including circadian rhythms which play a large part in our wellbeing.
The new bioSCENAR lets us dial up a frequency of 7.8 Hz. I have started to use this frequency in my treatments with the idea of the Schuman-wave and the idea fuelled by Prof Han from the Beijing University: he described longer lasting pain relief with low frequencies – and fast pain relief with higher frequencies when used alternation settings between 2 Hz and 100 Hz. With just a few patients one cannot make any valuable observations.
Suggestion 2: should we create a database globally with the focus to get some more valuable indications which frequency (or settings in general) can influence which symptom?

Staying with physics and SCENAR let me point you to Dr. Reinhard Voll, a German medical practitioner who used electro-dermal testing on acupuncture points and found correlations with pathologies: e.g. at acu-point liver 8 the skin conductivity was 18 times higher in patients with confirmed liver disease like cirrhosis or hepatitis than in subjects with a healthy liver. E. G. Sullivan on the other hand found a 30% lower conductivity at lung acu-points with (x-ray confirmed) lung disease. As skin conductivity is an integral part of SCENAR treatments let me ask: how come we are only chasing high IRs? Should we start looking for 'significant differences' in IRs in adjacent points? And what difference would be significant?

I also want to suggest publishing a 'protocol library' for SCENAR practitioners. We learn and teach protocols during the training. We learn indications, the application and desired effect of protocols. What we never know is how these protocols came about. For example 3pathways and 6 points cover

a lot of meridians on the back and the trigeminal nerve exit points. How did it happen, that there are 3 pathways? Why not five or seven? Why concentrating on the six points – especially if the top ones are most often covered by eyebrows and we actually measuring the IR on the forehead - unless we have a male patient with a beard where we might use the comb attachment anyway?
Why do we use 24 electrode positions on the first part of the Collar Zone – regardless if we treat a five year old or a 7 foot rugby player?
How did the lower body star come about?
Why are there no protocols focussing on the lateral rami of the spinal nerves but many on the dorsal and ventral rami? And why are there only a few protocols applied to the chest?
Where is the idea of hormonal points like C7, SSN etc. coming from?

If we know a bit about what the idea was behind a protocol – and know a bit about the insight its developer had by using it – we would be able to understand better and ultimately vary and improve the protocol. SCENAR practitioners are coming from many different backgrounds and it would stimulate different minds to get creative themselves.

Another important issue is the duration of SCENAR application and the intervals of treatments. Balancing time for effectiveness and practicality is not easy and more guidance is necessary. Going back to electro-acupuncture: needles are set and left for 20-30 minutes. We hardly ever work that long on an active point. Is getting a dynamic as good as getting a good dynamic (good as in 'pain free dynamic')? Are short treatments several times better than a single longer treatment? If we get more clarification on the time issue we might want to change recommendations: perhaps SCENAR belongs in the hands of practitioners who work in a hospital setting or at least a spa-setting where several applications per day are practical.

I guess we all want SCENAR to gain more credibility and more success. Of course competitors who market SCENAR as 'pain genie' or 'space healer' do damage to its credibility as well. We should offset ourselves by providing the complete Russian research and by actively push for more studies.

As much as I can explain these discrepancies to a patient who comes for treatment – medical practitioners are looking for some sort of evidence. And patients want to know why they pay so much more for a SCENAR than for a simple TENS device.

I suggest to give conventional medicine the RCT's (Randomised Clinical Trials) comparing conventional treatments with complementary and stand-alone SCENAR therapy. They might want to have an RCT comparing a SCENAR against a dud – the same way they compare an active pharmaceutical against a placebo. That, however, does not work for physical applications.
And when we do a RCT we should have a good study design, a large control and treatment groups (200 per group) with a robust randomisation.
We need to back up the claims of the SCENAR effects with the original Russian studies – the complete studies - and well translated. And we would like to see newer Russian studies, too – so that we can apply their techniques to our clients with hopefully the same effect.
We SCENAR practitioners can pool our findings and results in a data base for further (monthly) evaluations.
And we should freely exchange our knowledge about the many SCENAR applications freely.

To sum it up: I suggest a concerted effort to bring SCENAR up to current medical standards and specifically do the following.

- translate the original Russian papers properly and include what SCENAR applications have been used
- include raw data and SCENAR applications in these translations
- conduct large studies that compare SCENAR with TENS – and show that it produces more endorphins or longer lasting endorphins
- explain the usefulness of neuropeptides, specify which neuropeptides get released
- show reflex-bio-feedback in comparison with bio-feedback, show studies that back up the theory
- globally pool information from practitioners and evaluate results
- produce a protocol library that not only shows how to apply SCENAR with which settings but what the thinking is behind the protocol – so that practitioners from all walks of medicine can vary them and alter them to their needs
- show SCENAR application for chronic disease and publish which parameters have been checked and what the long-term results are – to show that real healing has taken place
- SCENAR studies should be large and well designed (200 per control and 200 per test group)
- SCENAR studies should compare conventional treatments versus conventional treatment plus SCENAR application or against SCENAR as standalone therapy if ethically acceptable

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