



## Brief Commentary

### Brief Commentary based on Article “Effects of Combining Music Therapy, Light Therapy, and Chromotherapy in the Treatment of Chronic Pain Patients: A Pilot Study”

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Alcira Suarez et al. have just published a study on the effectiveness of a system combining music therapy, light therapy and chromotherapy in the treatment of patients with chronic pain [1]. The LineQuartz® is the device that simultaneously delivers these 3 complementary therapies. In this article, the mechanism of action of each of these therapies has been analyzed separately. Music therapy acts primarily on the nucleus accubens and secondarily via dopaminergic pathways on the prefrontal cortex, which is itself connected to structures involved in modulating the affective part of pain. Light therapy acts on the epiphysis and thus on depressive episodes linked to a lack of light. It potentiates the effect of music therapy by stimulating noradrenergic pathways, which also act on the prefrontal cortex [1]. If the effects were limited to these mechanisms, it's likely that we wouldn't have had such a large effect size with potentially lasting results. With LineQuartz®, we are convinced that the main effect is due more to the device's ability to diffuse electromagnetic and scalar waves around and inside the body [2-4], by passing light and colors through quartz with specific properties.

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Light (along with colors) and music are electromagnetic waves that penetrate relatively little, but which can bring extra energy to the body through the phenomenon of resonance. In its basic state, each part of the body, tissue or organ is at the origin of a certain vibratory frequency and the different frequencies work in resonance, i.e. they can be a source of energy [4]. The best-known example is the principle of magnetic resonance imaging. The device initially delivers electromagnetic waves whose frequency is designed to resonate with those of the hydrogen atoms in water molecules, the distribution of which varies greatly between the body's different tissues [5]. The energy gain will therefore also vary greatly from one tissue to another, and it is this variation that is used to generate the images. Organ dysfunction, by modifying its vibratory frequency, can disrupt the resonance phenomenon. Certain frequencies, which can be provided by vibration at 432 hertz, can help to combat this disturbance [1,6].

Scalar waves are highly penetrating and relatively low in energy. They become an important source of energy if we can amplify them, as with the use of quartz, and/or facilitate their use by the body using complementary techniques such as music therapy [1] or acupuncture [3]. Scalar waves seem to be better suited to treating chronic illnesses, such as neurogenerative disorders or chronic pain, or symptoms such as fatigue or feelings of ill-being that are thought to be linked to or accompanied by an energetic deficit. This approach is one aspect of quantum medicine [3,7].

It is the combination of the 3 principles that is responsible for the therapeutic effect. The 3 therapies potentiate each other. Each taken separately is unlikely to have the same therapeutic effect as LineQuartz® used in its entirety. However, it is very likely that the «energy effect» is predominant, but it is important to be able to demonstrate this. This could be done by comparing a group of patients treated with LineQuartz® (group 1) with a group of patients treated with a «placebo» LineQuartz® (group 2), which has no quartz and therefore no «energetic» effect, but which has the same music therapy protocol as group 1.

In the study by Alcira Suarez et al., the effect of LineQuartz® on patients suffering from chronic pain was suggested by the improvement in the pain score (numerical scale ranging from 0 to 10) from 6 ( $\pm 1.4$  (standard deviation)) to 3 ( $\pm 1.7$ ) just after 4 LineQuartz® sessions (30 minutes by session), corresponding to a very large effect size (Cohen's index  $d=1.7$ ) [1]. Based on this criterion, it would theoretically be sufficient to compare 2 groups of just 7 patients per group (comparison of 2 means test) to have a good chance of obtaining a significant result (first species risk of 0.05 and  $1-\beta$  power of 0.9, two-tailed test) [8]. If we consider the anxiety criterion, the values (Hospital Anxiety and Depression scale (0 to 21)) fall from 11.1 ( $\pm 4.1$ ) to 7.4 ( $\pm 3.7$ ) corresponding to an “only” significant effect size (Cohen's index  $d=0.9$ ) [1]. Based on this criterion, 2 groups of 26 patients should theoretically be compared. We envisage a double-blind, placebo-controlled study involving 25 patients per arm, with a significant improvement in pain score 15 days after the end of treatment as the main criterion. If significant, the study would be classified as Class I according to the criteria of Evidence Based Medicine [9].

In conclusion, the short-term efficacy of LineQuartz® in patients with chronic pain has been suggested by the results of the study by Alcira Suarez et al. However, these results need to be confirmed by a controlled study involving a treatment group and a group using a placebo LineQuartz® device, with the primary endpoint being an assessment of pain intensity in the medium term.

### Conflict of Interest

Yannick Delgado and Alain Servais are employees of DYCOM SAS. The other authors have no conflict of interest.

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