

Investigating the claims made by music therapists selling essential oils

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DALLAS - Today I attended the American Music Therapy Association national conference. I was invited to attend a gathering of MTs, and chose to attend because it was my only opportunity to see an old friend. When I arrived, it quickly became clear that this was a multi-level marketing event intended to sell essential oils to music therapists. The materials and dialogue largely revolved around how music therapists could use the products sold in clinical practice and for self care.

It did not take long for the event to spiral. A music therapist scrolled on her phone, reading out loud that the product she was holding up could “heal DNA” after a major trauma, and was “good for terrorist attacks.”

The record scratch sounds in my brain should have been loud enough for the whole room. Ethically, I didn’t feel that I could sit there smiling and pretending that I hadn’t just heard such egregiously bizarre statements. I raised my hand and excused myself, and pointed out that a statement like that merits quite a bit of explanation. If essential oils could truly “heal DNA” and thus presumably treat or manage symptoms related to trauma, olfactory therapy should be widely used so that a great good can be had for the multitudes of people who are struggling to recover from trauma across the globe.

The music therapist’s first response was that she was simply reading what she found online. I inquired if this is an acceptable standard for making claims about the therapeutic value about a product being sold to therapists. The music therapist then shifted gears, insisting that this was an evidence-based claim, that research showed essential oils being hawked healed the DNA after trauma. The music therapist was not able to offer a cogent explanation for how trauma “breaks” DNA or the mechanism for healing DNA with oils. Out of the 8-10 other music therapists present, none offered anything other than embarrassed giggles, and several went on to make purchases. No concerns were raised as to whether music therapists were qualified to presumably manipulate a client’s genetics through an olfactory therapy. A practice that would seemingly fall under the purview of genetic medicine was largely accepted as falling within the scope of practice of music therapists.

After this conversation, the event continued, with the salespeople now being more self-conscious as they read sales points off their phones and worked for the next sale. When the event concluded, I approached the music therapists leading the event to continue the conversation. I again expressed my concerns that it was outside the scope of practice of a music therapist to prescribe oils that they believed would modify a client's DNA, and my skepticism regarding the idea that an essential oil could be "good for terrorist attacks."

I was again reassured that this was a research-based practice, and I asked where I could find this research. The music therapist could not provide the information for a specific study or studies, such as author names or a journal or publication. Instead I was told to look up *vetiver* on PubMed. I very carefully wrote this down, and had the music therapist check to make sure I had it spelled correctly and had written down the right information that would lead me to the research that supported her exorbitant claims. I thanked the music therapist, left the conference for home, and in true autistic hyperfocus fashion, spent the next 12 hours searching PubMed for any study on the subject.

When I searched "vetiver" on PubMed, I found 167 results. Glancing at the titles, nothing stood out as obviously relating to trauma or DNA, so I tucked in to systematically look through all 167 results and take notes on the results. It was clear that if I was going to find this evidence that the essential oil saleswoman claimed existed, I would have to dig. I examined the abstracts of each result, and the full studies of any article that included human participants or even human tissues. I did not sleep that night because once I am involved in a task like this, I am highly motivated to continue until I am finished.

This is what I learned.

Vetiver (*Chrysopogon zizanioides*) is a type of grass native to India, similar to sorghum or lemongrass. The overwhelming majority of the 167 studies listed as results on PubMed concern the use of the grass in soil and wetland remediation. This plant has been largely studied for its ability to remove heavy metals and industrial pollutants such as cadmium out of a variety of environments. This is quite off topic from the materials I am looking for, but I also found it quite interesting. In my 20s, I was hospitalized while living in China after an industrial accident spilled heavy metals like cadmium into the city's water source. After months of drinking the water and eating locally-grown foods, I developed serious kidney problems. This led me to leaving China and needing to make lifelong changes to protect my kidneys from future problems. Naturally, I am still interested in the ways that plants can help to remove industrial pollutants from the

environment and found these materials, but the music therapist didn't claim that plants can help remediate contaminated soil - she claimed that her oils "healed DNA." And so I set these articles to the side and continued.

There were a variety of studies regarding the basic physical and chemical components and characteristics of a variety of plant-based oils. Some of these focused on anti-fungal and pest-repellant uses of vetiver and other essential oils. That's nice - I don't like mosquitoes, and have used a variety of mosquito-repellents to prevent mosquito-borne illness when spending time outdoors. But these do not provide any information about DNA, genetics, trauma, or anything of the like, so I set these articles to the side too.

After I combed through all 167 results for "vetiver" on PubMed, I finally found five studies that concerned the use of vetiver oil with any type of living subject. One of these was an animal study, the other a tissue study. Only three out of 167 of the results involved human participants exposed in some fashion to vetiver oil.

The animal study found that when mice inhaled vetiver essential oil, it modified their EEG.

The tissue study determined that palmarosa, citronella, lemongrass, and vetiver essential oils can induce oxidative stress and apoptosis (cell death) in lymphocytes (white blood cells), and these oils are both cytotoxic (toxic to cells) and genotoxic (toxic to genes). However they did also conclude that at low levels, these oils are safe.

One of the studies on humans included 34 healthy people who were exposed to vetiver essential oil while they were already asleep. They found increased Delta waves during non-REM sleep, and the researchers hypothesized that this could indicate deeper sleep for the participants.

The second study with human subjects included 18 men and women who performed a visual discrimination task for 30 minutes in a small testing room, during which they were given either a low or high dose of vetiver essential oil diffused through the air. Attention and reaction time were measured. Researchers found increased attention to task under the low dose condition. No effect on attention was found in the high dose condition.

A strange thing about this study was found in the acknowledgements included at the end, in which the authors thank "all of the men who participated in the study." I had to go back and check to see if the study included only men, in case I had written it down in my notes incorrectly. In fact, it clearly stipulated that the study included both men and

women participants. Your guess is as good as mine as to why they would specifically thank all the men, and only the men. Did the women revolt? Did they break out of the study room and try to take control of the lab? I'm afraid we can only speculate on this mystery of science.

The third and final study of human subjects focused on 36 people with sleep apnea. Researchers found exposure to vetiver essential oil while sleeping induced a transient decrease of inhalation and increase in exhalation that lasted around six breaths after the odor was administered. It was suggested that this demonstrates that the olfactory system could possibly be a way to modulate respiration in people with sleep apnea but there were no statements about whether this result was indicated as healthy or an improvement for the patients.

So - there you go! That's the evidence.

That's the evidence for the claim that the essential oil products sold via multilevel marketing businesses by music therapists can be used in music therapy to "heal the DNA after trauma," after something terrible like a terrorist attack.