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An Open Letter to the Mold Community Regarding the “Hi Tech Air Solutions” Machine

April 23, 2015

Dear Friends,

Recently there has been a great deal of discussion in the mold community about a product called the “Hi Tech Air Solutions” machine.

<http://www.hitechairsolutions.com/index.html>

Based on the information on the company’s website and on comments that I have seen from representatives of the company, the product seems to be being promoted to individuals with toxic mold illness for mold remediation purposes.

Unfortunately, after reading the information on the website as well as additional information provided by sales representatives, I feel that I still do not have a strong sense of whether the product is capable of doing what the company suggests that it can do.

Based on what I have seen so far, it seems to me that the jury is still out on this machine and that more evidence – including scientific evidence - needs to be gathered before we can say much of anything about the likely usefulness of this machine to those with toxic mold illness or mold sensitivity issues.

Following are some additional comments related to this product.

Background on Ozone

Because the “Hi Tech Air Solutions” machine seems somewhat similar to ozone in terms of its claimed effects, a discussion of ozone seems in order.



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Ozone seems to be fairly universally recognized as having the ability to kill mold in the environment. Therefore, in some cases, ozone may be seen as an appropriate treatment for specific environmental mold problems.

One problem with ozone, however, is that it may not be capable of getting inside walls or in other hiding places where toxic mold tends to grow.

A second problem is that mold remains just as toxic when it is dead as when it is alive. In at least some cases, killing toxic mold only makes the situation worse, since dead colonies tend to release more poisonous spores into the environment than live colonies do.

Additional research suggests that ozone may have the potential of degrading mycotoxins.

<http://www.ncbi.nlm.nih.gov/pubmed/?term=ozone+mycotoxins>

In general, research suggests that high doses of ozone for extended periods of time may be required in order to do this.

Ozone also has other limitations, such as having the ability to damage items such as electronics or plastics.

In addition, if it is breathed by humans or other mammals, ozone causes severe lung damage and possible death.

Due to the various limitations of ozone, knowledgeable and competent remediators virtually never use ozone as a first-line defense against toxic mold.

Their standard procedure for dealing with toxic mold is instead to identify where the mold is growing, to remove the mold and the affected materials in a way that those are contained during the disposal process, and then possibly to use ozone to finish off the job.

For instance, my own problematic home was found to have a substantial toxic mold problem underneath the fake paneling in the family room, in the drywall



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next to the furnace, and in the attic. The contaminated materials all were removed from the home by professional remediators, using plastic containment barriers and biohazard protocols.

After all the mold and the affected substrate was removed, I still reacted strongly to the house, to the point that I could not go inside at all without getting very sick.

This response was expected since even if all growing toxic mold is removed from a living space, leftover toxic material from the mold (spores, spore fragments and toxins) will still be present.

At that point, I ended up running a heavy-duty ozone machine for an extended period of time, actually for a whole week (which was much longer than the remediators suggested).

After that, I was able to go into the home for short periods of time without getting as sick as I did before the ozone was used.

The home still did have a negative effect on me, however. If I had moved back into that home, I would have gotten very sick again since I was very sensitive to the mold toxins after the long exposure to them.

With the exception of some metal and glass items, I was able to reclaim almost no possessions from the home. Even after I washed the other items, they made me feel too sick to have them around.

Despite the fact that the ozone did not save my house or my stuff for me, I still feel that using it in my house after the professional remediation likely was a good idea.

For instance, since dormant mold spores can remain viable for hundreds of years, destroying those spores with the ozone may have made it less likely that future owners of the home will experience a severe toxic mold problem if another hidden water leak occurs.



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Possibly, the reduction in toxicity from the ozone may have made the home safer for other occupants who – though less sensitized than me – still may have been affected in subtle ways by small amounts of problem toxins.

Finally, the reduction in toxicity allowed me to spend short periods of time in the home to help sort through my possessions without getting as sick as I otherwise would have.

Other mold avoiders have reported to me similar experiences with ozone - suggesting that while it can be helpful to them, it is not a solution for fixing really problematic environments.

Very often, the success stories that I hear from mold avoiders with regard to ozone are related to remediating contaminated objects (for instance, by putting one object in a box and then exposing it to strong ozone for an extended period of time).

Some experienced mold avoiders also have reported benefits from exposing their mildly contaminated living spaces (such as homes or vehicles) to ozone for a period of time.

However, virtually none of the reports that I have gotten from mold avoiders with hypersensitivities to mold toxins have suggested that ozoning is a sufficient tool to remediate a really problematic living space. It appears to be much more limited in its capabilities than that.

Another consistent report that I have gotten from mold avoiders is that typically, the ozoning process will first make objects or spaces feel worse prior to their feeling better.

(This is referring to how the objects or spaces feel when the ozone is turned off and then aired out, of course.)

In some cases, it may be that the ozone is killing a colony, causing it to release spores into the air.



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Possibly in other cases, the ozone is causing dormant spores to degrade into particles, meaning that there are more pieces of toxic debris in the environment.

Conceivably there may be other factors at work here as well.

“Hi Tech Air Solutions” Machine

The “Hi Tech Air Solutions” machine is not an ozone machine. It is said to use a different technology, called a hydroxyl generator.

This is a device that to my understanding is used in the remediation industry in the same way that ozone is often used – to get odors under control.

<http://www.jondon.com/titan-hydroxyl-generator-air-purification-and-deodorization-4000.html>

I have yet to find any evidence in the scientific literature that hydroxyl generators can be effective at breaking down mold toxins.

That does not mean that they are not capable of breaking down mold toxins – only that there is not anything that I have found in the literature to support that contention.

I have heard some reports from purchasers that “Hi Tech Air Solutions” representatives have stated to them that the company’s machines are in some way different or more effective than other hydroxyl generators.

Unfortunately, I have been unable to find any information about exactly what might be different about these particular machines, in terms of the specific technology being used.

In general, as far as I can tell, the whole discussion about the “Hi Tech Air Solutions” machines seems to be based on speculation with regard to what the technology might be doing with regard to mold and mold toxins, not what it has been proven to do or even informally demonstrated to do.



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There are some user testimonials on the website. However, none of those testimonials are from people who seem to me to be particularly credible in terms of their apparent technical knowledge with regard to toxic mold, mold illness, mold remediation or physics.

Insofar as hydroxyl generators are capable of breaking down mold toxins, it seems reasonable to think that they might do this more slowly than ozone does, since they seem generally acknowledged in the remediation industry to be slower in terms of neutralizing odors.

The main advantage cited with regard to hydroxyl generators is that unlike ozone, they are said to be able to be used when people are present in the building.

Based on the information that I have read from other companies, hydroxyl generators do not ultimately work better than ozone in any respect.

In fact, since to my understanding hydroxyl generators work only on particles that actually pass through the machine rather than on contaminants in the environment as ozone does, they may actually be less effective than ozone for some circumstances.

For instance, it seems to me that compared to the use of ozone, hydroxyl generators likely would be less effective or ineffective at killing mold that is growing on surfaces or in walls, since those colonies would not be passing through the machine.

Worth nothing, however, is that on the front page of the “Hi Tech Air Solutions” website, a graphic is shown depicting “OH radicals” on a “search and destroy” mission (i.e. appearing to leave the machine and travel throughout the living space).

The statement below this graphic reads, “New cutting edge technology eradicates at a molecular level air born as well as surface contact.”

This seems to be inconsistent with my understanding of how conventional hydroxyl generators work.



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Perhaps this is a way in which the products made by this company are different than conventional hydroxyl generators, although exactly what could be going on in terms of the technology that might be allowing this to happen is thus far unclear to me.

Another disadvantage of hydroxyl generators is that they appear to have been less tested for safety issues than ozone generators have.

In California, hydroxyl generators are available only for professional use and cannot be legally purchased by consumers.

Insofar as the products made by “Hi Tech Air Solutions” are in some way different than conventional hydroxyl generators, I have seen no safety testing on this particular technology at all.

In general, comparing machines designed to cover the same general square footage, hydroxyl generators seem considerably more expensive than ozone generators.

Based on what I have seen so far, machines produced by “Hi Tech Air Solutions” seem considerably more expensive than similar hydroxyl generators sold by other companies.

According to the “Hi Tech Air Solutions” website, the machines currently being sold range in price from \$1,995 to \$5,995.

<http://www.hitechairsolutions.com/Product.html>

Many of the sales representatives listed on the company’s website are mold illness sufferers who have purchased the product themselves. Some of these representatives have told me that they will receive a 25% commission for each unit they sell.

<http://www.hitechairsolutions.com/Contact.html>



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Heather Plude

During the past few months, I have heard about this machine from a number of mold avoiders and mold illness patients with whom I also have been in contact on other mold-related topics. Some of these people have purchased the machine, while others have just tried it out.

Of all of these individuals, by far the most enthusiastic testimonials have come from a longtime mold advocate named Heather Plude.

Heather's mold story is summarized on the "How I Survived Toxic Mold" page of the Paradigm Change website.

www.paradigmchange.me/survived/

For a number of years, Heather has been writing a blog called "A Good Health Advocate." I have not read every article on the blog, but what I did read seemed good enough quality that I have felt okay about suggesting it to people as a possibly useful information source.

www.agoodhealthadvocate.com

A few months ago, Heather began writing on her blog about her experiences with the "Hi Tech Air Solutions" machine, which she said had been very helpful for her.

<http://agoodhealthadvocate.com/air-quality/hi-tech-air-solutions-before-and-after-testing/>

Heather now is working as a sales representative for the company. Links to the company's website are featured prominently on her blog, and she has been talking about the machine frequently in various online forums.



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So that is one person I have interacted with for a long time who states having benefited from this machine.

Other Reports

Apparently largely as a result of Heather's enthusiasm for the machine, other mold illness patients and mold avoiders also have tried it out.

Thus far, the reports that I have personally gotten from these individuals have been much less positive than the reports that I have heard from Heather on it.

One comment that I have heard from a very high percentage of these individuals is that even though the company states that it is okay to run the machine while people are in the environment, doing this seems to be leading to people feeling much worse.

Conceivably, this could be for the same reasons that ozoning for a short period of time rather than a longer period of time makes spaces feel worse – for instance, because as the spores disintegrate, a larger number of toxic particles are released into the air.

On the other hand, considering how little research there has been into hydroxyl generators in general, especially in terms of what they do with regard to mold, it is impossible to be sure whether this is indeed what is happening.

Insofar as this machine is in some way different than other hydroxyl generators, the science is even less clear.

Conceivably, the machine could be having a direct effect of some sort on people's bodies, with the consequences of usage unknown.

In addition, none of my contacts who has tried this machine has matched Heather's story in terms of particularly problematic spaces or possessions being remediated by it.



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With the exception of Heather, all of the mold avoiders who have provided comments to me have stated that the machine has yet to do what they had hoped in terms of remediating problematic environments or possessions so that they felt tolerable enough to be used.

In addition, none of the mold illness patients still living in problematic environments has reported that using this machine seems like it is going to be any sort of solution for their environmental issues.

A few people have suggested that using the machine at first made the environment feel worse to them, but that after an extended period of time (such as a few weeks or longer), the space felt better to them than how it had started out.

However, those people suggested to me that the improvement only had been enough to make them feel somewhat better in the environment, not enough to make the home a good space for them or put them on a path toward wellness.

In addition, these individuals said that they still reacted negatively to the use of the machine when it was in operation and could not be around it.

Other people have suggested that the toxicity of the living spaces or items does not seem to have been reduced much or at all by this machine, even after extended use.

Why these people have been less positive about the product than Heather Plude has been is unclear to me.

One detail that seems conceivably relevant is that Heather has reported that her family originally got sick in a mold-toxic home, but was able to recover fully from the illness and then eventually move back into the home without losing ground after a remediation.

In my observation, people who become very sick with mold illness virtually never are able to go back to living in the homes where they first got sick without getting sick again, even after those spaces are remediated.



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I therefore am wondering if whatever factor allowed Heather and her family to tolerate the remediated home better than most severely mold-injured patients tolerate their own remediated homes also may be responsible for why Heather and her family are able to tolerate environments or items treated with this machine when other mold-injured patients are not reporting that same experience.

General Concerns

To my knowledge, there is not yet sufficient peer-reviewed scientific knowledge to make me feel comfortable with assertions that this machine is likely to be either safe or effective.

I actually have not been provided with any peer-reviewed evidence about the machine at all, or even any scientifically oriented white papers.

That does not mean that I am saying that people should not try the machine if this is something that they want to do. It is not my place to interfere with others' mold avoidance choices. Everyone needs to do what seems best for them.

However, I now have heard enough stories about people feeling worse when around this machine that I have significant doubts about the hypothesis that it is okay to run it at the same time that people are physically present in the environment.

As a general principle, I think it is a mistake to assume that anytime that people with this kind of illness feel worse as a result of doing something that could have an effect on their health, this is a result of "detox" or "die-off" and thus okay.

Sometimes, feeling bad is an indication that something harmful is happening and that things associated with that feeling should be avoided.

It is my conclusion that there is not enough information about what the reasons might be for people to be feeling worse when around this machine for anyone to take the position that feeling worse around the machine should not be a concern.



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Especially insofar as the machines made by this company indeed are substantially different than the hydroxyl generators made by other companies (e.g. with molecules getting into the air outside the machine as is pictured on the website), I am particularly concerned about the many reports that I have gotten from people who have said that being around the machine when it is running has made them feel worse.

Thus, I tend to think that all things considered, it likely would be safest for people not to be in the living space at all during the times when the machine is running.

Certainly, if people find they are feeling worse as a result of running the machine in their own living space, then the options of not running the machine any more or vacating the area when the machine is running seem to me worth considering.

Of course, insofar as people are going to be vacating the house when the machine is running anyway, the consideration of ozone as a less expensive and possibly faster alternative conceivably might be worthwhile.

User Reports

My second concern is that negative reports about the machine and about the company's sales tactics frequently seem to have disappeared without explanation from mold community forums.

This has happened with comments posted in the Facebook group that I run, called Mold Avoiders. And I have received a number of reports of it happening in other Facebook groups as well.

It therefore seems to me that it would be helpful for all those interested in this topic if there were a central location where experiences with the machine itself as well as observations about the company's sales tactics could be permanently stored and then easily accessed by anyone interested.



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I thus have decided to host a page of factual information about these machines and this company on the Paradigm Change website.

www.paradigmchange.me/hi-tech/

Those with experiences or observations to report may send them to me:

info@paradigmchange.me

Positive, negative, mixed and neutral comments are all welcome.

Insofar as the owners of “Hi Tech Air Solutions” would like to submit responses to any or all of the comments that are made, I will make those responses available on the website page as well.

Threatened Legal Actions

Finally, I feel concerned that “Hi Tech Air Solutions” has threatened to file suit against certain individuals who have criticized the machine itself and/or the company’s sales tactics.

I am personally aware of two cases of this occurring. Both were directed toward people with whom I had interacted repeatedly, long before I ever heard of the “Hi Tech Air Solutions” machine.

Carl Grimes is an indoor environmental and mold assessment professional who received a formal letter from an attorney said to be representing “Hi Tech Air Solutions.” The letter is available at this link:

<http://paradigmchange.me/wp-content/uploads/2015/04/Hi-Tech-CD-Letter.pdf>



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A mold illness patient, Sandy Wolfe, received a shorter warning letter via the Internet by the head of the company.

<http://paradigmchange.me/wp-content/uploads/2015/04/Sandy-Wolfe-Legal-Letter.pdf>

Following is a self-supplied biography of Carl Grimes:

>My name is Carl Grimes and my company is Healthy Habitats in Denver, CO. I'm a certified indoor environmental consultant (CIEC) and an accredited healthy home specialist (HHS). I've been a professional consultant for nearly 30 years and suffered by disability to mold, chemicals, dander, and most everything else over 30 years ago. I was unable to work for 2+ years and it took another 10 years before I could work full-time. I have served on several boards of non-profit organizations, and on a committee that wrote the first mold remediation standard (in 2003) that was later accredited by ANSI in 2006. I'm a past president of the Indoor Air Quality Association, the current vice president of the International Society of Indoor Air Quality and Climate, and the ethics committee of the International Society of Environmental Epidemiology, among other professional activities.

Sandy Wolfe states that she is a mold illness patient and the volunteer administrator of the Facebook group "Toxic Black Mold for Dummies." She reports that she has never profited financially by selling any products related to mold illness or mold remediation.

I would have liked to have included a link to a biography of the developer of the "Hi Tech Air Solutions" machine or of the head of the company in this letter, but I was unable to find this information on the company's website.

A request to a company representative for these biographical materials did not yield a response.



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In general, I find it disturbing that this company is threatening to take legal action against people who have negative things to say about their products or sales tactics.

I am especially concerned because this has, in my observation, had a chilling effect with regard to the public science discussion about these machines.

For example, a number of patients have told me due to the company's legal threats directed at others, they themselves have felt hesitant about discussing their thoughts about the science of the "Hi Tech Air Solutions" machine in public forums for fear of being sued themselves.

Scientific Discussion

It is my belief that insofar as there is disagreement from a scientific perspective about the merits of this machine for the proposed purpose, it is appropriate to have a public discussion about this.

I thus am with this letter asking the owners of "Hi Tech Air Solutions" to agree to allow Carl Grimes to present a summary of his understanding of the technology of these machines as a Paradigm Change blog - without his having to fear being sued by the company in retaliation for doing so.

If the company management chooses, they would be welcome to respond to Carl's comments with their own comments on the blog post.

It seems to me that this exercise likely would yield an interesting and informative discussion that we as a community would benefit from doing.



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In general, I wish the best of luck to all in terms of dealing with all of their mold problems in an effective manner and in moving back toward health.

Cordially,

Lisa Petrison

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www.paradigmchange.me