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Popcorn Lung Coming to Your Kitchen? The FDA Doesn't Want to Know

September 4, 2007 in [Flavoring Workers' Lung \(Popcorn/Diacetyl\)](#), [Health](#), [Politics](#), [Regulation](#) | by [David Michaels](#)

By David Michaels

Updated Below

For the past several years, news articles and Congressional hearings have reported on a deadly, irreversible lung disease – bronchiolitis obliterans – that is caused by workers' exposure to food flavoring chemicals, and more specifically by exposure to a butter-flavoring chemical called diacetyl. So far, attention has focused on worker exposure, rather than on possible health problems affecting consumers who pop popcorn in their microwave ovens. That focus may be changing, however, with a warning sent by one of the country's leading lung disease experts.

The CDC, FDA, OSHA, EPA – federal agencies charged with protecting public health – each received a letter in July alerting them to the possible serious respiratory hazard to **consumers** who breathe in fumes from their artificially butter-flavored microwave popcorn. The warning should have resulted in some action by these agencies, but instead, they've done virtually nothing.

It appears that the Bush Administration's efforts to destroy the regulatory system are succeeding; the agencies seem unable to mount a response to information that a well-functioning regulatory system would immediately pursue. The agencies aren't even trying to connect the dots.

In July, Dr. Cecile Rose, the chief occupational and environmental medicine physician at National Jewish Medical and Research Center, the most prestigious lung disease hospital in the country, wrote to the FDA, CDC, EPA and OSHA, [informing the agencies of a patient she had recently identified](#)

“with significant lung disease whose clinical findings are similar to those described in affected workers, but whose only inhalational exposure is as a heavy, daily consumer of butter flavored microwave popcorn.”

This letter is a red flag, suggesting that exposure to food flavor chemicals is not just [killing workers](#), but may also be causing disease in people exposed to food flavor chemicals in their kitchens.

In the last seven years, dozens of workers have developed the rare and sometimes fatal disease bronchiolitis obliterans (BO) – also known as “popcorn lung.” The sick workers were employed in factories where diacetyl, the primary ingredient in artificial butter flavor, was manufactured or applied to food. Most of these cases have been seen in microwave popcorn factories. Last week, one of the country's largest popcorn makers [announced it was eliminating diacetyl from its butter flavor](#).

Since I first wrote about the [failure of OSHA](#) to protect food industry workers from this deadly exposure, I have been asked by dozens of reporters whether it is safe to pop microwave popcorn at home. I explain that there is no evidence that it is dangerous to breathe the chemicals that come out of popcorn bags after they are microwaved, but that the issue has not been studied, so I can't say that it is safe. My colleagues and I at the [Project on Scientific Knowledge and Public Policy](#) have been doing our best to push the relevant federal agencies into investigating the problem.

We have not been alone. In the last year, the question of consumer exposure has

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come up in countless media reports and several congressional hearings, and a powerful member of Congress has raised the issue directly with the Commissioner of the FDA.

Given this background, one would expect the relevant federal agencies to respond quickly to what may be the first documented case of lung disease caused by consumer exposure to artificial butter flavor. What we are faced with, however, is a failure of those agencies to take action, a sign that something is seriously wrong with our public health system. The letter from Dr. Rose should have been sufficient to raise concerns at the agencies involved. There are few physicians in the country who have more experience with lung disease caused by food flavor chemicals than Dr. Rose; she has been a consultant to the Flavor and Extract Manufacturers Association (FEMA) – the association of companies that make food flavorings – for more than a decade and helped develop the industry's [Respiratory Safety Program](#).

Later in this post, I detail the response of each agency. First, it is worth looking at [Dr. Rose's letter](#), in which she described the ways in which this patient's condition resembled that of the workers who developed lung disease after exposure to flavor chemicals, and the reasoning that went into her decision to alert the regulatory agencies:

1. The patient described progressively worsening respiratory symptoms of cough and shortness of breath. Extensive medical, occupational and environmental history taking did not reveal a known cause for these symptoms. The patient did report daily consumption of several bags of extra butter flavored microwave popcorn for several years.
2. Serial pulmonary function testing revealed progressively worsening fixed airflow limitation without a bronchodilator response and with a normal diffusion capacity for carbon monoxide. This is the pattern of lung physiologic abnormalities described in affected workers.
3. High resolution chest CT scan showed bronchial wall thickening, bronchiectasis, mosaic attenuation and expiratory air trapping. This appearance is similar to the imaging abnormalities reported in affected microwave popcorn factory workers.
4. Lung biopsy showed diffuse hyperinflation, a relative absence of small airways, and bronchioles in various stages of obliteration, findings of bronchiolitis obliterans (BO).
5. The patient's clinical course has been consistent with that described in microwave popcorn factory workers with BO, with a progressive decline in FEV (Forced Expiratory Volume in the first second, a marker of airflow obstruction) despite treatment with oral corticosteroids. His lung function appears to have stabilized recently with cessation of exposure to butter flavored microwave popcorn.
6. We measured airborne levels of diacetyl during microwave popcorn preparation in the patient's home and found levels similar to those reported in the microwave oven exhaust area in the quality assurance unit of the microwave popcorn manufacturing plant where affected workers were initially described.

This letter represents more than the report of a single isolated case of BO in a person who happens to eat a lot of extra-buttery microwave popcorn. The report comes after years of evidence that diacetyl causes BO in workers at factories where the chemical is produced, mixed and applied to food products. We don't know, in other words, whether this is an unfortunate coincidence or the first identified case of BO among popcorn consumers. It is possible that there are other people who have BO or another, less severe diacetyl-caused obstructive lung disease, but who are being treated by their own personal physicians who do not have Dr. Rose's expertise and familiarity with the outbreak of BO in food industry workers. Are there more cases out there? We don't know, but now is the time to find out.

In her letter, Dr. Rose acknowledged that it is difficult to make judgments based on a single case, but, given "the public health implications" of the possibility this patient's illness was caused by his exposure to butter flavor chemicals at home, she did what any dedicated public health practitioner would do: she notified the agencies that are supposed to protect the public health.

And that's where things seem to have stopped.

The receipt of Dr. Rose's letter is the moment where the FDA, or the CDC, should have said "Whoa! Here is an indication that the problem may go beyond workplaces." The agencies have never looked for BO cases among people who are heavy consumers of popcorn at home, but now they could issue an alert, requesting information from lung disease specialists around the country. Or they could have called a meeting of the technical directors of the popcorn manufacturers to learn about what they know about consumer exposures, especially about the levels of diacetyl released when popcorn with extra butter flavor is popped in a microwave oven. ([Documents released by the EPA suggest that ConAgra, manufacturer of the Orville Redenbacher brand, may know quite a lot.](#)) At minimum, they could have asked Dr. Rose for more information.

None of the agencies did anything like this. In fact, **their failure to respond adequately is a sign that our public health protection system is in dire need of repair.**

Here's a brief review of what each agency is doing (or not doing) about food flavor chemicals, and, according to Dr. Rose, how they responded (or didn't respond) to the letter.

1. The Food and Drug Administration (FDA)

The FDA has been asked several times to examine whether breathing diacetyl poses a risk to consumers. Each time, the agency has refused. Last September, SKAPP petitioned the FDA to remove diacetyl from the "Generally Regarded As Safe" (GRAS) list, pointing out that "[there is compelling evidence that breathing diacetyl vapors causes lung disease and there is no evidence of a safe exposure level.](#)" In March 2007, the FDA wrote us back, essentially blowing us off.

Then, in May 2007, Congresswoman Rosa L. DeLauro (D-CT), chair of the House of Representatives Appropriations subcommittee that funds the FDA, urged the agency "to consider revoking the generally safe designation for diacetyl and removing it from the market until further testing is completed." FDA Commissioner von Eschenbach refused to commit the FDA to do anything other than monitor the situation, and there is no evidence they are even doing this.

Frustrated by the FDA's continued failure to take action, Rep. DeLauro added language to the [report that accompanied the Agriculture Appropriations Bill](#), directing the FDA to submit a report on its diacetyl research plan to the committee within 90 days of enactment.

What did the FDA do when it received Dr. Rose's letter in July? According to Dr. Rose, FDA attorneys asked that she resubmit her letter to the docket that has been created for our [petition](#), since evidently, the FDA office to which the letter was sent didn't feel they could do it themselves. (This is the reason the letter is dated July 18th but date stamped August 21, the day it was entered into the docket.)

2. The Environmental Protection Agency (EPA)

As readers of *The Pump Handle* know from [repeated posts on the subject](#), some time in 2003, the EPA announced that a study on the chemicals released in the popping and opening of packages of microwave popcorn was underway and was expected to be completed by the end of that year (2003). The results of that study still have not been released, although the results have been shared with popcorn manufacturers.

In July 2006, I [wrote](#) to EPA Administrator Stephen L. Johnson, asking for expedited release of the study and objecting to the preferential treatment given to industry. The EPA [responded](#) that the study had undergone internal and external review and would soon be sent to industry "solely to ensure that no confidential business information is released." The agency planned to submit the paper to a scientific journal in fall 2006 and anticipated publication by mid-2007.

The scientific community and the public are still waiting for the result. However, last week, the owner of one of the country's leading popcorn manufacturers cited the EPA study as one of the reasons his firm was [now selling a butter flavor popcorn made without diacetyl](#).

What did the EPA do when it received Dr. Rose's letter in July? According to Dr. Rose, the EPA thanked her and said it would treat the letter as a submission under section 8e of the Toxic Substances Control Act. Under this law, the EPA collects and compiles reports on adverse effects of chemicals. At one time, the agency promptly posted them on [its website](#) so the reports could be read by interested parties. But [the EPA has evidently stopped posting](#) – the last 8e submission posted on the EPA website was submitted in June 2006. So Dr. Rose's letter is apparently collecting dust in some large pile of paper where it apparently remains, unlikely to be released to the public for who knows how long.

3. The Centers for Disease Control and Prevention (CDC)

Although its mission is ["to promote health and quality of life by preventing and](#)

[controlling disease, injury, and disability,”](#) the CDC is not a regulatory agency. It does play a central role in investigating the causes of illnesses and in alerting the public and medical communities about ways to prevent diseases from occurring.

The National Institute for Occupational Safety and Health (NIOSH), a branch of the CDC, has done terrific work investigating the causes of lung disease among flavor workers.

As of last week, CDC had not responded to the letter.

4. The Occupational Safety and Health Administration (OSHA)

OSHA is charged with protecting the health of workers, so the information in this letter wasn't particularly relevant to their work. Last July, two unions [petitioned OSHA](#) for a standard that would protect workers from diacetyl exposure. [Dozens of leading scientists supported](#) the petition.

The failure of OSHA to take even minimal steps in the face of a clear and present hazard (dozens of sick workers in popcorn and flavor factories) has been the subject of scathing newspaper articles and editorials and two congressional hearings.

The House of Representatives will soon consider legislation, already passed by the House Education and Labor Committee, requiring OSHA to issue an emergency standard for diacetyl 90 days after the legislation is enacted. FEMA, the flavor industry's trade association, [supports the legislation](#).

The Bush Administration, needless to say, [opposes the legislation](#), and there still is no indication OSHA is actually working on a standard. The only sign of life so far out of OSHA was the recent announcement of a "National Emphasis Program" aimed at popcorn factories. Given that most new cases appear to be occurring in the factories that produce the flavorings used in the production of popcorn and other food products, this is simply [too little too late](#).

Perhaps because Dr. Rose's letter did not contain any information that required OSHA to do anything (it was limited to a report on consumer rather than worker exposure), OSHA evidently did respond promptly, thanking Dr. Rose for her letter.

At one time, the US regulatory agencies were the envy of the world. The agencies were staffed with the best scientists, who did their best to ensure that preventable diseases were actually prevented.

Sadly, much has changed. The newspapers are filled with reports of political hacks running the agencies, over-ruling the decisions of career scientists in order to protect perceived corporate interests. The White House Office of Management and Budget has erected a series of barriers impeding those agencies that still want to issue any new measures that will protect the public from pollution and dangerous products.

The anti-regulatory fervor of the Bush Administration is so great that agencies like OSHA will not step in to regulate even when it is requested to by responsible industry, as in this case where the flavor industry supports legislation that will force OSHA to issue a diacetyl standard.

Sadly, the damage to the agencies has been severe. **The anti-regulation policies coming from the White House and the political hacks running the agencies have taken their toll. The agencies have fewer staff and fewer resources. Morale is at its lowest. Many of the best scientists have left and are not being replaced.**

The public will pay the price, for many years to come. Repairing our system of public health protection will be one of the most difficult challenges faced by the next Administration.

Update (9/4/07):

In statement issued today, FEMA has recommended that "its members who manufacture butter flavors containing diacetyl for use in microwave popcorn consider reducing the diacetyl content of these flavors to the extent possible." Read the whole statement [here](#).

Update (9/5/07):

We've gotten several comments and emails about people who have experienced irritation or difficulty breathing when microwave popcorn is popped. If you are concerned about symptoms you are experiencing, you should discuss them with your doctor; [OSHA has posted information](#) that may be useful to physicians.

Also, you can submit comments to FDA as part of the [docket](#) dealing with our request to cancel diacetyl's GRAS status until further research is completed. Reference Docket #2006P-0379, and send written comments to Dockets Management Branch (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Room 1061, Rockville, MD 20852.

David Michaels heads the [Project on Scientific Knowledge and Public Policy \(SKAPP\)](#) and is Professor and Associate Chairman in the Department of Environmental and Occupational Health, the George Washington University School of Public Health and Health Services.

41 comments

Comments feed for this article 

September 4, 2007 at 11:40 pm
Robyn

I used to work with a woman who had severe asthma. If someone brought microwaved popcorn into the work area, she would have an attack. It evidently also aggravates existing pulmonary/breathing problems.



[Reply](#)

September 4, 2007 at 11:49 pm
Stephen Smith

I have had breathing difficulties when people microwave popcorn for quite a few years now, but if they microwave a cup of water before doing the popcorn, it doesn't seem to cause the breathing difficulties.



[Reply](#)

September 5, 2007 at 1:22 am
Sue

Thank you for giving me a plausible explanation of why I choke up and cough when buttered popcorn is microwaved. The fumes are very acrid (to me).



[Reply](#)

September 5, 2007 at 1:33 am
Marne

What is the diacetyl made from--i.e. what is the source ingredient of the flavoring? Isn't this what people should be asking? If it is soy, for example, then perhaps things like biodiesel made from soy could also cause respiratory problems. Ditto soy ink, and recycled paper that has soy residue from the soy ink. It seems that the problem is being presented as a chemical, when it could be what the chemical is made from. If you tell me that a vitamin supplement that I'm taking is made from poop, but that it's the chemical equivalent of vitamin E, I'm going to tell you that I'm not taking it--I don't care what it's the chemical equivalent of, it's still made from poop. Also, if the flavoring chemical is made from a crop that is Roundup ready, then doesn't that mean that it is genetically modified so that when they spray the Roundup, it kills everything but the crop? Doesn't that also mean that there is Roundup residue on the crop? Doesn't that mean that we're ingesting the Roundup residue, whether it's by breathing it, eating it, or touching it? Perhaps that is really the problem here.



[Reply](#)

September 5, 2007 at 1:34 am
Kit Lanuza

My youngest son's favorite is microwaveable buttered popcorn, I noticed that everytime he eats the microwaved buttered popcorn he will have an asthma attack. He has allergy on nuts and I am thinking that somehow maybe the machine used in manufacturing the buttered popcorn are also being used to manufacture some products containing nuts. We give away all the microwaveable popcorn at the house and do not allow him to eat microwaveable popcorn anymore. He is not having asthma attack anymore. He still likes to eat popcorn but we just buy it from the movie theatre and so far it does not have any adverse effect on him.



[Reply](#)

September 5, 2007 at 4:05 am
Rob

If you eat the diactyl laden popcorn you probably are inhaling the stuff directly through the chewing-breathing process. It's engineered to smell attractive so the natural response is to want to inhale it. Until the recent Trans Fat awareness most microwave popcorn was laden with the stuff so folks were breathing that franken-food in as well (as well as who knows what else... well the food scientists working for these criminal companies knew. Any Whistle-Blowers out there?)



[Reply](#)

September 5, 2007 at 4:07 am
Rob Holland

Well well well, one has to wonder if some of the producers of Asthma medicine are quaking in their boots about now.



[Reply](#)

September 5, 2007 at 7:50 am
Lori

As soon as someone in the office opens that bag of popcorn and the fumes escape, I have to go outside because I cannot stop coughing, choking and clearing my throat and then my head pounds for the rest of the day. They always look at me like I'm making it up just to get out of the office, but now there is some proof. Thanks so much!



Reply

September 5, 2007 at 9:06 am
askclapperdotcom

I'm a Supervisor at a Psych based Assisted Residence Facility, just a few blocks from National Jewish Hospital. Our residents do nothing but eat popcorn and smoke cigarettes. I'm a long time smoker, but 8-10 bags of popcorn fumes per day has made me nauseous and sick. I read early articles on diacetyl and gave them to my owner with an ultimatum that either the popcorn goes, or, I go. The popcorn went.



Whatever happened to popping your corn and pouring butter on it? We did that in the 60's when I was a kid. Thank you.

askclapperdotcom

Reply

September 5, 2007 at 9:16 am
Carlton

We all know it is programmed to taste good, but one day I got to thinking. If I can smell the flavoring of the buttered microwave popcorn, a grocery store isle away, through the box, through the plastic wrap, and through the paper package, then the chemicals in them must be too strong!



Reply

September 5, 2007 at 12:35 pm
Pollux

Dr. Cecile Rose said the ailing patient, a man whom she wouldn't identify, consumed "several bags of extra butter flavored microwave popcorn" every day for several years.



Another farce. What is the definition of "several?" Must be more than two, so is it three, four or five? At three bags per day, this "patient" would consume 1095 bags a year. I buy the popcorn in 24 bags/box but know the product is available in 6 or 12 boxes per package.

Let's see: 1095 divided by 24 = 45.62 cases/year. Of course if we assume (which this whole story is based on assumptions) this character eats 5 bags a day, that translates to 1825 bags/year and at 24/case= 76.04 cases/year. At these rates of consumption I would suggest saving money by purchasing the product directly from the manufacturer and getting a drop shipment once a year.

Abusing the ingestion of any one product at this rate could be expected to potentially cause a physiological reaction sometime. This would be likened to eating 5 Big Mac's per day, then blame Mac, smoking 3 packs of cigarettes a day with no expectation of health problems, not necessarily cancer.

Second hand smoke endangerment falls into the same rat hole of junk science. Not one established, definitively established case of illness or disease, let alone one death. Perhaps you don't like the smell of cigarette smoke, but that doesn't infer or suggest in any plausible manner that safety is a factor. You may have an allergy to any number of things, but that does not translate to ill health is caused by what one is allergic to. Most allergy reactions are prompted by dust mites, pollens and food. But none of these things cause allergies, rather your body doesn't react favorably to any one of these substances. It is unknown why, and in the great majority of allergy cases, these reactions lessen or disappear in adulthood. Not all, the majority.

Some people react to the presence of animals, cats or dogs. If it is unknown these animals are present, no reaction. But if it is known, a reaction immediately results. That is why many of these "allergy" cases are diagnosed as "mental", while others are definitively affected because of the presence whether known to be in the immediate area or not.

If you like to stick your nose into the gas tank and inhale the fumes directly four or five times a day, would you expect your body to react differently than if you simply inhaled from several feet away once a week or more while filling your car?

If you are the only one who has a reaction at facility that has 50 or more other people and you are the only one who reacts unfavorably, guess you should go. Especially if you are the only one who inhales all these bags of popcorn every day. Where are these other people when all this popcorn is fired up? Apparently they either aren't affected or they don't spend all their time in the same room the popcorn is being prepared. Another case of today's society: one person squeals and everyone else must conform to that individual's heartburn.

Reply

September 5, 2007 at 2:14 pm
joe

I'm really angry about this. I usually eat one microwave bag of (Orville Redenbacher's Gourmet popping corn - Smart Pop) everyday. I'm looking over the packaging now and there is nothing there listing diacetyl. In fact the packaging emphasizes that it's a 'healthy food'. I had no idea that I was inhaling dangerous chemicals, that could cause serious lung disease! I also noticed the 1-800 number on the box to call for questions or comments, got nothing but a busy signals when I tried. It's no wonder why



Americans are overweight and unhealthy, because of large corporations like these pumping out poison into the food supply. I'm glad this article appeared on Yahoo news or I probably would have never heard about it. Now that I am aware of situation will be sure avoid products made with that chemical.

Reply

September 5, 2007 at 2:17 pm
Ginger Williams

I've always said buttered microwave popcorn smells bad and told my husband this. The smell is rancid and I have to



clean my microwave every time. I would think what is added to this is part of the trouble, like the oils .

I am very glad to know I am not the only one

Reply

September 5, 2007 at 2:49 pm
Bobby

Just thought you would bve interested to know that you are NOT smelling fumes, as fumes have metal flake in them.



What you are smelling are vapors.

Reply

September 5, 2007 at 3:16 pm
StompOutIgnorance

To Ingoramous Pollux:



As a person who from age 0 to 16 had chronic sinus infections, migraine headaches, and repeated and increasingly severe cases of ear, nose, and throat infections due to the second hand smoke in the home, repeated hospitalizations, and finally a form of fatal strep infection t age 16 which I thankfully survived, and resulting opacified cranial sinuses, I can attest to the toxicity of second hand smoke and its detrimental effects on children who are by smaller body size and less developed immune systems more sensitive to the toxic chemicals. It was disruptive to my schooling, my mother's attention to the home, our family life, and my sense of well-being and participation in life. After I was in the hospital for 4 days, my throat swollen shut and my neck visibly wider than my jaw (at 94 lbs) and unable to even swallow water, and my insolent father who did not even bother to visit me because he was so angry that I was sick, but so much more committed to cigarette smoking than being a caring person, I moved out of the sick house and in with my grandmother, who was not a smoker and did not allow him to smoke in her house, and suddenly being sick with sinus infections did not occur, in fact, I only caught a normal seasonal cold once in the fall. But in the early weeks after moving out of the smoke environment, there was a strange illness in which my body expelled an exceptionally large volume of phlegm via repeated vomiting for 2 days, and then after that, I did not ever have a sinus infection. To this day, a passing car with cigarette smoke, or passing a smoker outdoors on the street makes my throat swell shut and my lungs stop in order to avoid the toxic chemical smells and effects – it is an involuntary response. I do not go to bars or restaurants that allow smoking, as sitting there with your throat and lungs fighting you is not good for the appetite.

Pollux, you need to shut up and stick your head in the sand because your block-headed ignorance is not good for you or anyone else. I hope you follow in my father's obvious resultant painful laryngeal cancer, self-destruction and alienation, and eventual self-induced eternal coma.

Reply

September 5, 2007 at 3:17 pm
Donna

Glad to see this on Yahoo! I will go back to popping popcorn on the stove. We have gotten away with "the old way of cooking"



and I think we need to go back.

Reply

September 5, 2007 at 3:23 pm
StompOutIgnorance

By the way, Pollux, my dad was a DOCTOR – a scientist who loved to "debunk" the "overly sensitive junk science" regarding those people who appear "weak" and intolerant to exposures to man-made "harmless" substances. He did not live to be 60.



WHY? In his youth, cigarettes were marketed as "healthy" by doctors themselves. So it is really a matter of which science you choose to believe, in terms of your small-minded assertions.

Go stick that in your mouth and puff on it to your grave.

Reply

September 5, 2007 at 3:29 pm
Tom Wickerath

Bobby -



> Just thought you would bve interested to

know that you are NOT

> smelling fumes, as fumes have metal flake in them.

I suggest you re-check the dictionary definition of fumes:

<http://www.merriamwebster.com/dictionary/fumes>

1 a : a smoke, vapor, or gas especially when irritating or offensive b : an often noxious suspension of particles in a gas (as air)

I have suffered for many years from the odors associated with microwave popcorn. The symptoms include difficulty in breathing, coughing, wheezing and shortness of breath. It got to the point where I had to ask my supervisor to implement a ban in half of the very large building I work in (I did not want to request a total ban—I simply could not have the fumes in my work area). He did this after I was evaluated by my physician and presented a signed note.

Like Lori, I have to make a quick exit whenever a person prepares microwave popcorn in my near vicinity, or even opens a bag close by that was prepared elsewhere. I've also experienced the anger of one co-worker in particular, who was just too stupid to realize that just because he was not affected, that I still had a real problem with it.

Tom Wickerath
Chemist
Materials and Process Technology
The Boeing Company

[Reply](#)

September 5, 2007 at 3:36 pm

9/5/07



Susan

My son eats Act II extra butter popcorn

and everytime he microwaves a bag the fumes, vapor, smell, or what ever other description the companies want to call it, makes my breathing difficult. Even after he cooks it and throws the bag away, I come into the house an hour later and still have breathing difficulties. I now have COPD (Chronic Obstructive Pulmonary Disease) and have to use my Albuteral inhaler when ever he has microwaved this popcorn even after he has thrown it outside in the trash. I then need to clean out the microwave because just opening the door of the microwave after he's cooked the popcorn, still causes me breathing difficulty.

Obviously I am not the only one who thought there is something wrong with microwave popcorn!

[Reply](#)

September 5, 2007 at 3:42 pm

Pollux: According to the New York Times, Dr. Rose's patient ate microwave popcorn twice a day for more than 10 years. This is



probably far more than most of us eat, but severe symptoms in a heavy consumer might indicate that moderate consumers could be affected in less severe ways. More research is needed to find out.

[Reply](#)

September 5, 2007 at 3:45 pm

Maybe we should take the slight extra effort and make popcorn the old fashioned day on the stove top or use an air popper?



JK
No chemicals and no noxious fumes! As to the man in Denver eating several bags a day of extra butter, I would be surprised if he was not grossly overweight or had heart problems on top of the respiratory!

[Reply](#)

September 5, 2007 at 8:44 pm

David



Cat

Thank you for efforts in bring attention to this problem with diacetyl. Unfortunately, the FDA in particular, is overstretched with more responsibilities and less money to monitor our food and drug supply.

Pollux

People with allergies and sensitivities respond even if they cannot see the trigger. I am highly sensitive to certain flower scents, especially hyacinths. I generally can tell they are somewhere in the vicinity even if I cannot see them. Once it turned out that they were on the opposite side of the street about 100 meters away.

Similarly with second hand smoke. Whether or not I can see the smoker, it makes my eyes water.

I agree that eating two bags of microwaved popcorn/day is excessive and people may be allergic to the chemicals in it. Fortunately, I never really liked microwaved popcorn. I concur with Donna and JK that we should take the extra effort and make our own food from scratch when we can. The food industry is going to feed our habit of convenience as long as we demand it.

[Reply](#)

Diacytyl is a natural byproduct of fermentation, present in some beers and wines, especially California chardonnays. It's in yogurt too, so much for "healthy" food.



Reply

September 6, 2007 at 12:23 am
forest smith

I thought I was crazy! I start to cough uncontrollably whenever I smell butter flavored popcorn being popped in the



microwave. As soon as I draw in a breath of air with the smell, I start coughing immediately. Finally, I feel vindicated. Hmmm, I wonder if I can pimp myself out to researchers who want to study the effects?

Reply

September 6, 2007 at 3:01 am
Norma

Consumer of Butter Microwave Popcorn maybe the cause of his lung cancer and untimely death. My husband popped one



bag of butter microwave popcorn everyday for 7 years.. He said it was a healthy snack .On the second week of October he said he was sick. He went to the family doctor and got a perscription of antibiotic. After five days he called the doctor and said it was not helping him. He perscribd a stronger antibiotic . He feel a little better but did not get well. First week of November it was his routine blood work appointment at the VA Hospital He told the doctor he had no energy and difficulty breathing. The doctor checked and listen to his lungs. He said there is no hissing sound. I ordered that you will get a second blood work and x-ray.. The liver was not normal. The nurse made an appointment for scanning and ultrasound. The x-ray shows there was an open space in the right lobe of his lung. For sure it is phneumonia. The VA doctor prescribed antibiotic. He called and told him he did not get well. I took my husband to the family doctor to be admitted to the ICU in the hospital to run some test. The test shows he had two tiny spots in his liver. Cancer could not be rolled out. I took him to a Gastrroenterology to had scheduled for a liver biopsy. His oxygen level dropped and he was put in oxygen .The first week of December he was diagnosed with lung cancer already mestastesized in liver and bones. He went to radiation treatment. My husband died second week of December. We could have more years together. It is sad and painful. I hope the Environmental and Protection Agency will have the result of their study of the chemicals released into the air when a bag of popcorn is popped or open.

Reply

September 6, 2007 at 4:32 am
solarV

"Diacytyl is a natural byproduct of fermentation, present in some beers and wines, especially California chardonnays.



It's in yogurt too, so much for "healthy" food."

Erotyka.Youbi.pl – nowy wymiar piękna!
<http://www.erotyka.youbi.pl>

Reply

September 6, 2007 at 4:53 am
friknfrak

It only takes common sense to deduce that ALL manufactured chemicals, fumes, and byproducts whether noticably detected or



not is the cause of the surge in cancer. Plastic bottles/containers have been proven to release carcinogens, but like a prior poster stated, as long as we buy into the convenient lifestyle, they will continue to market it. Canning and bottling needs to return to easily recyclable glass. Chlorine needs to be eliminated from drinking water. Prescription drugs invariably cause disease in various bodily systems. Once diagnosed with cancer, the majority of doctors recommend chemotherapy which is poisonous to all human cells (thus, your immune system that naturally tries to fight cancer) rather than just targeting the cancer cells. While we're at it, let's examine the effects of microwave use period on the human body. You can call it paranoia or simply common sense, but in the end, it is your life and the lives of your families at stake.

Reply

September 6, 2007 at 10:51 am
Albion Tourgee

FWIW, popcorn pops just fine with no additive or oil of any kind. You just put some popcorn in a paper bag and



microwave it. The additives in microwave popcorn seem to be harmful, and they're also useless (or actually make the popcorn taste worse) and a waste of money (microwave popcorn costs several times more than loose popcorn). American consumers will buy anything! But, anyone who's ever opened a microwave popcorn bag before popping and seen the awful goop in there would really have to be crazy to buy that again.

Reply

September 6, 2007 at 4:27 pm
duke7

How about putting some oil in a pan and cooking raw popcorn over the fire on the stove...



Duke
dukeofac@usa.com

Reply

September 6, 2007 at 4:53 pm
MLO

I am actually allergic to corn – any popcorn will cause me to go into anaphylaxis, so I will not be sad to see this



stuff gone. The thing that most people do not understand is that the food industry has corrupted almost all of the food around. I'm 90% positive that the microwave popcorn rampant in most workplaces caused me to get worse.

BTW: To those who think it is "all in our heads" I would tell them that the 3rd worst reaction I have ever had I did not smell popcorn I thought I smelled tuna fish. There was no tuna fish to be found. It was popcorn.

Now, if you can eat popcorn, invest in an air popper and melt a little butter. It is better for you than the microwave popcorn.

Study what they are putting in your food. In all likelihood, the diacetyl they are using is corn-based or soy-based. Corn is used to fatten hogs and cows before slaughter. Why eat so much of it?

Pax,

MLO

Reply

September 6, 2007 at 7:54 pm
Farmer Steve

Our certified organic microwave popcorn has no diacetyl or other artificial flavorings. Just pure popcorn that pops



great and tastes great. Grown by us in the USA. Give it a try at <http://www.farmersteve.com>

Reply

September 6, 2007 at 8:01 pm
LunaticFringe

To the person who can smell popcorn in the grocery store even when ostensibly sealed. It would not surprise me that the



cardboard box it is in is impregnated with the artificial odors of the flavoring, specifically to draw the shoppers.

Reply

September 6, 2007 at 8:17 pm
Felix Kasza

> It only takes common sense to deduce that
> ALL manufactured chemicals, fumes,



and

> byproducts [...] is the cause of the surge
> in cancer.

Oh dear. First, _what_ surge in cancer? Lung cancer rates track tobacco usage closely, and the rest is due to increased _detection_ rates, not _incidence_.

Second, "ALL" manufactured chemicals includes, among a great many other things, _water_. Water may be reviled by the unwashed enviro-hippies, but it seems to have no other ill effects in reasonable dosages.

Third, there are perfectly natural substances, like the toxins produced by some molds, that reliably cause cancer.

So let us hear less unreflected ranting against those evil "chemicals". Concentrate instead on eliminating those fake abominations on the grounds of taste and texture, entirely sufficient in my opinion. Just for laughs: I recently checked out a tip from a friend and looked at canned peaches. Can you imagine, they add fake flavouring to _canned_peaches_??

Cheers,
Felix.

Reply

September 7, 2007 at 10:37 am
Barbara

I added your story to my blog, Barbara's Journey Toward Justice. I also feel bloggers should let The NY Times know



how we feel about what they did with your story.

Reply

September 7, 2007 at 8:40 pm
Felix

May I suggest Philip Morris' documents disclosed during the Minnesota litigation?



<http://legacy.library.ucsf.edu/action/search/basic>

Please start with:

"IFF Confidential" keywords.

Then, pull related files using close bates numbers.

If you are a lawyer who wants to make a ton of money, you may want to consult a professional researcher, such as Ray Goldstein.

Hint: popcorn chemicals are made by IFF on same equipment as chemicals for McDonald's Big Mac, and Philip Morris' Marlboro...

[Reply](#)

September 14, 2007 at 1:29 pm
Joseph H. Vilas

I'm not surprised long exposure to high levels of something is bad, even when occasional exposure at low levels is OK



(e.g., wood dust). What surprises me is so many people jumping on diacetyl without thinking whether the home culprit might be, say, aerosolized metallized plastics from the microwaved bag? It might not explain "popcorn lung" proper, but it might explain some of the sensitivity problems many people are expressing.

As much as I can, I stopped nuking food in plastic a long time ago.

[Reply](#)

September 26, 2007 at 11:32 pm
Dr Joan

I have added your story to my new blog. I think it is important. I miss Confined Space, but I'm so glad you are here!



Sincere thanks.

[Reply](#)

November 19, 2007 at 9:21 pm
Ken Bickerton, CIH, CSP

Do not equate workplace exposures to consumer exposures. They are vastly different in both the concentration of



airborne Diacetyl and the time and frequency of exposure. Go back to the familiar phrase, "Dose makes the poison," to gain some perspective in this issue.

Workers that have contracted "Popcorn Lung" are typically exposed on a daily basis to high concentrations of the butter flavor chemicals for 6 to 8 hours per day. Consumers are typically exposed a couple of times a week/month to low concentrations of the butter flavor chemicals for a few seconds per exposure.

Did you know that Diacetyl naturally occurs in butter, and the employees of butter manufacturers are not know to contract "Popcorn Lung"? The same with beer and breweries?

Let's keep things in perspective.

[Reply](#)

January 4, 2008 at 11:44 am
vanessa deveau

why cant you tell some people how much are there in on bag of popcorn



[Reply](#)

February 7, 2008 at 10:23 pm
Rebecca

I really love the popcorn. This's the good information to know.



I think we can putting some oil on the raw

popcorn then cooking over the fire..

Carefully to close the pan because it will popup!

[Reply](#)

November 2, 2008 at 2:46 pm
David Egilman MD, MPH

Rose's patient used 2-3 packages per day. The short term exposures when fresh bags are popped are as high as those mixers



who developed bronchiolitis obliterans got in popcorn facilities.

There is another consumer case in Florida.

[Reply](#)

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