Strain of salmonella ‘infiltrates cancer cells and destroys them’

Generated from News Bureau press release: 50-Year-Old Bacteria Could Be Alternative Treatment Option for Cancer

SALMONELLA is usually associated with an unpleasant bout of food poisoning – but could the bacterial infection actually be used to cure cancer?

A new study reveals that a non-toxic strain of Salmonella can be used to control the spread of cancer.

Experts at the Cancer Research Center and the University of Missouri believe that the bug could kill cancer cells without harming normal, healthy cells.

One of the lead researchers, Dr Robert Kazmierczak, said: “Salmonella strains have a natural preference for infiltrating and replicating within the cancer cells of a tumour, making the bacteria an ideal candidate for bacteriotherapy.

“Bacteriotherapy is the use of live bacteria as therapy to treat a medical condition, like cancer.”

Put simply, the Salmonella infection could move into the cancer tumour, working to reduce the symptoms from the inside out.

In order to test this theory, a strain of Salmonella was injected into mice who were suffering from prostate cancer.

Encouragingly, in 20 per cent of cases, the size of the creatures’ tumours declined.
Cancer Research Centre’s investigator Dr Kazmierczak hopes that further research could help to reduce the severity of symptoms of cancer.

He added: “One of the most remarkable aspects of Salmonella is its ability to target, spread and persist inside the tumour.

“We are taking advantage of this ability by using Salmonella to carry or generate effective chemotherapeutic drugs, concentrating them at and throughout the tumour.

“The goal of this treatment is to develop a bacterial vector that can destroy the tumour from the inside out and reduce the amount of side effects endured by patients with cancer.”

The findings are published in the journal PLOS One.

PITTSBURGH TRIBUNE-REVIEW

Panel deadlocks on changes to 'emotional support animal' allowances for airplanes

BY MICHAEL WALTON | Thursday, Oct. 27, 2016, 10:42 p.m.

Generated from News Bureau press release: Research Highlights the Legal Issues of Certifying Emotional Support Animals

Man's best friend, waddling waterfowl and pot-bellied pigs will continue to travel aboard commercial aircraft and jet-set around the world.

A federal advisory committee has reached a stalemate in its review of rules that allow animals, ranging from dogs and ducks to pigs and snakes, to fly for free inside an airplane's cabin — so long as a medical or mental health professional has designated the creature an emotional support animal, or “ESA,” for an owner suffering from a widely recognized disability.

The National Service Animal Registry says ESAs, by their presence alone, provide comfort to owners and mitigate negative symptoms of many diagnosed disabilities.

Critics say the ESA designation is ripe for abuse, spawning an entire online industry that sells ESA certifications based on flawed diagnostic practices that fall far short of widely accepted mental health care standards.

“It's really exploited now,” said Jeffrey N. Younggren, a clinical and forensic psychologist and University of Missouri professor. “It's really laughable and sad what's happened.”
Younggren is among a group of researchers that published a study in June about the evaluation and certification of emotional support animals. Younggren said he’s concerned that some mental health professionals are not applying proper standards in ESA assessments — and individuals are exploiting the process to travel with their pets for free.

Signed ESA letters amount to a disability diagnosis, he said. They should be issued only after careful and thorough evaluation, ideally by an impartial third-party professional instead of an individual's primary mental or medical health provider.

Younggren also questioned what he described as a “groundswell” of websites marketing and selling ESA letters, often following a short consultation with a website-referred therapist.

“This is a disability diagnosis, and you can't do a disability evaluation within a few minutes online,” he said.

Representatives from several ESA certification websites declined to comment to the Tribune-Review or did not immediately respond to interview requests.

Jana Leonard, manager of DOT compliance for Las Vegas-based Allegiant Air, said there's been a noticeable uptick in people traveling with ESAs and traditional service animals such as seeing eye dogs.

Unlike traditional service animals, emotional support animals do not undergo specific training and do not help owners perform specific tasks.

Leonard, who participated in the DOT advisory committee and specializes in passengers with disabilities, said airline industry members and disability advocates agreed that ESA rules and certification needed to be reviewed.

“If it didn't require a second look, we wouldn't have been there,” she said.

DOT spokeswoman Caitlin Harvey said the committee discussed whether ESAs should be considered service animals “and establishing safeguards to reduce the likelihood that passengers wishing to travel with their pets can falsely claim they are emotional support animals.”

But committee members voted Oct. 12 to discontinue that discussion “as further talks seemed unlikely to either move toward consensus or generate significant new and useful information,” Harvey said.

Harvey added the committee's work prior to that vote will “greatly benefit (DOT) as it proceeds to draft its proposed new rule on service animals.”

Eight days after the DOT committee suspended its consideration of animal issues, Bailey, 4, marched through Pittsburgh International Airport with the confidence of a seasoned frequent flyer, ignoring even the smells wafting from the food court as he passed.

Fresh off a flight from Sarasota, Fla., on Oct. 20, he deftly stepped around passengers and luggage as he headed for the airport exit.

But Bailey's stride slowed with an escalator looming ahead. His ears perked up as his eyes turned to Jim Goldman, who bent and picked up his cherished four-legged friend and emotional service animal.

“Its unconditional love,” Goldman said after putting Bailey down at the bottom of the escalator. “It really is. He's always happy to see you.”
Goldman, who suffers from heart issues, said he began traveling with Bailey after undergoing open heart surgery. The dog helps him remain calm, and he obtained a letter from his physician certifying the practice.

“He's just become a part of my life, to the extent that they actually allowed him to come to the hospital,” Goldman said.

COLUMBIA — Police are looking for a suspect in relation to a sexual assault that occurred in Flat Branch Park Thursday afternoon.

At about 2:30 p.m., the Columbia Police Department responded to the report of the assault, which took place near the MKT underpass at Providence and Stewart roads.

A 14-year-old female victim told police she had separated from her friends in the park, and soon after, her friends heard her screaming, according to a police department news release.

Her friends saw a man leave the park in a southbound direction.

The suspect was described as a six foot, white male in his mid-40's with a thin build and a mole on his forehead.
The investigation is ongoing.

The victim was taken to the hospital Thursday for evaluation.

A previous sexual assault along the MKT trail was reported on Aug. 11 near the Forum Boulevard entrance. Police described the suspect in that assault as a white man between 30 and 40 years old, between 6-foot and 6-foot-2, with dark messy hair about 3 inches long and a long, pointed nose. The woman in that assault was grabbed and struck with an object.

This story will be updated when there is more information.
The girl was at the park with her friends and became separated from the group, the release said. Her friends heard her screaming nearby, and the girl said she had been raped by a man her friends saw leaving the park, according to the release. The girl was taken to a hospital for evaluation, and detectives took over the investigation. A forensic interview has been scheduled at the Child Advocacy Center, the release said.

UPDATE: 14-year-old girl reports sexual assault near MKT Trail

COLUMBIA - **MU Alert reported a sexual assault near Providence and Stewart Road in a wooded area near an MKT trail overpass around 2:30 pm, Thursday afternoon.**

Columbia police said officers responded to Flat Branch Park where the victim and her friends said the incident happened.

Police said the victim is a 14-year-old girl. She told police she was at the park with friends and then went off on her own. A short time later, the friends heard her screaming.

The girl told her friends she had been sexually assaulted by a man they all saw running away from the area.

The victim described the suspect as a white male in his mid 40s with a thin build of about 6 feet tall. She also said he had a mole on his forehead.

He was believed to have left the area, although Columbia police continue to search for him.

EMS personnel took the girl to the hospital for evaluation, and she will have a forensic interview at the Child Advocacy Center.

Police did not know if the suspect and victim know each other.
Some trail goers said they take certain precautions to stay safe.

"I'm not usually out here too late," Brennan John said. "The later you stay out you know, the more dangerous it gets."

Another trail goer said he usually feels pretty safe during the day, but he makes sure to pay attention to what is going around him. He also said at night he never goes on the trail.

### Sexual assault reported at Flat Branch Park

COLUMBIA — The University of Missouri reported a sexual assault occurred off Providence Road and Stewart Road, in a wooded area near the MKT underpass.

The university stated a female victim was assaulted by a male suspect around 2:30 p.m. He was believed to be in his 40s, with a thin build and a mole on his forehead.

Columbia Police stated a 14-year-old girl was with a group of friends in the area of 400 Locust Street at Flat Branch Park when she separated from them. A short time later, the victim's friends heard her screaming nearby. The victim said she was sexually assaulted by a man. The friends said they saw the man run away in a southbound direction.

The victim was taken to a hospital and an interview at the Child Advocacy Center was being arranged, according to police.

The Columbia Police Department was investigating the case.

**Similar stories ran on the following stations:**

- KMIZ- Columbia, Mo
- KMBC- Kansas City, Mo
- KCWE- Kansas City, Mo
ST. LOUIS • The University of Missouri-Columbia will continue providing graduate assistants subsidies for their health insurance — at least through this school year.

The issue erupted on the Columbia campus last fall when leaders said they’d stop the longtime practice of offering these students subsidies.

The decision at the time stemmed from guidance on the Affordable Care Act that led university leaders to fear they’d face legal ramifications because, in the eyes of the IRS, those students are considered employees.

The Affordable Care Act penalizes employers for giving employees money to purchase health insurance coverage on their own.

Thanks to a decision by three federal departments last week, universities such as Mizzou can take as much time as they need to figure out the future of providing students with health insurance. The Health and Human Services, Labor and Treasury departments agreed on the extension.

U.S. Sen. Claire McCaskill, D-Mo., lobbied for the extension, and touted it as a win for students and the university, adding that she will “continue working to make that certainty permanent.”

“Mizzou’s hardworking teaching assistants had been left in limbo about whether they’d be able to access the affordable, quality health insurance they’d relied on,” McCaskill said in a statement.
Shortly after the announcement last fall that Mizzou would pull back on the subsidies — leading to protests from students and faculty — the school reneged. The issue added to a semester full of public scrutiny on campus.

The recently announced extension allows Mizzou “the time and ability to work toward identifying a permanent quality, affordable, health coverage solution for our graduate students looking forward,” a campus spokesperson said in a statement.

For now, students keep their subsidies.

ResLife hall coordinator work schedules to be affected by labor law change

An update to the Fair Labor Standards Act is changing how employees are paid overtime, and residence hall coordinators are now facing restrictions on how and when they can do their job.

**MU Resident Hall coordinators are professional Department of Residential Life staff members who live in the residence halls, handle conduct and supervise student staff. Hall coordinators often work outside of a typical 9 a.m. to 5 p.m. workday.** The nature of the job means that they often meet with student staff in evenings, respond to student staff and residents’ concerns as needed and attend hall events.

Because of the federal labor law change, hall coordinators’ job status has transitioned from exempt to nonexempt, which means they can no longer work more than 40 hours per week without being paid overtime. This means that only hall coordinators on duty after hours can respond to emergencies. In addition, time spent doing tasks like checking emails after their workday is completed is time that goes toward their hours for the week.

According to an internal information sheet on the change, overtime requests must be put in a week ahead of time. In an email sent to Department of Residential Life employees, Kristen Temple, the associate director of Residential Academic Programs, wrote that ResLife will no longer allow hall coordinators the flexibility of assisting students and student staffers even when
not working because “it will be likely to result in overtime.” Temple said in the email that this is why hall coordinators on duty are to be contacted in case of emergencies.

Temple said despite the changes to hall coordinators’ schedules, this will have little impact on student staffers and residents.

“I don't anticipate that students are going to see to much change or impact because their hall coordinator is still going to be there for hall council meetings, they’re still going to have office hours and be in their office, and their hall coordinator is still going to meet with the student staff,” Temple said.

But in an email, a former student staffer who wishes to remain anonymous said they believe this change could have a negative impact for residents, student staff and hall coordinators.

“I think this could have a negative impact as it does not allow much time for the HCs to interact freely with residents and their staff in the way that they would have before,” the former staffer said. “Similarly, I think that by limiting the number of hours it could result in some aspects of the job being pushed aside, not out of the HC's willingness to complete them, but out of necessity because there are simply not enough hours in the 40 hour work week.”

Hall coordinator is just one of the jobs being affected by this labor law change; jobs from across the UM System that no longer meet exemption requirements have been reclassified as nonexempt to comply with federal law as of Oct. 23.

“As an employer, you can define certain jobs’ positions to be exempt, so salaried, or nonexempt, which uses hourly timekeeping,” Temple said.

Exempt employees do not get paid overtime, while nonexempt employees do. At MU, approximately 700 employees are transitioning from exempt to nonexempt status, MU spokesman Christian Basi said.

In accordance with the law, employees are paid an overtime amount of 1.5 times their hourly wage for each hour over 40 hours a week that they work, Basi said.

The Fair Labor Standards Act sets “the standard salary level equal to the 40th percentile of weekly earnings of full-time salaried workers nationally. Using salary data from 2013, the proposed methodology resulted in a standard salary level of $921 per week, or $47,892 annually.”

This means that any employee with a salary less than $47,892 must be classified as nonexempt and has to be paid overtime. Previously, the standard salary level was $455 per week, or $23,660 a year.

“Our hall coordinator position had a base salary that was well-above that [$23,660], but nowhere near that [$47,892],” Temple said.
Temple said ResLife, in conjunction with Human Resources, had to decide if hall coordinators fell into the category of exempt employees whose salaries needed an increase to be above the minimum $47,892 or if there were a way to restructure the position to meet the nonexempt requirements.

ResLife chose to reclassify the 16 residence hall coordinators as nonexempt.

“I would say we really started in earnest, other than general conversations, [working to reclassify the position] in early June or late May,” Temple said. “We were thinking about and talking about what are the elements of the hall coordinator job and how does that relate to timekeeping.”

Temple and the area coordinators began by brainstorming ways that the various tasks of the hall coordinator position could be done more efficiently without having a large impact on the student experience.

Next, they had the hall coordinators themselves do the same thing independently.

“We didn’t show them what we had come up with because we didn’t want to bias them,” Temple said. “Then, the area coordinators and myself brought together the information that we had brainstormed and the information that the hall coordinators had brainstormed and actually they were surprisingly close.”

The UM System does not expect actual job duties to change. The salaries of employees transitioning to nonexempt status will not change, but they will be changed into an hourly wage instead of a monthly wage, according to the UM System Human Resources website.

“The way that the Residential Life department at Mizzou works is that they really wanted their hall coordinators to be a presence within their hall during the daytime and during the night hours,” a former hall coordinator who wishes to remain anonymous said. “If you were around in the evenings and something came up, it was very much expected that you would be there as a hall coordinator to help address the situation.”

Now if a student approaches a hall coordinator when they aren’t working, they are expected to either ask the student to come back during office hours or call the on duty coordinator, as opposed to taking care of the situation themselves, Temple said.

When a hall coordinator is on duty, they carry a phone with them at all times and respond to issues after traditional work hours or when other hall coordinators are not available.

“You will still get a professional staff member if you need a professional staff member,” Temple said. “The hall coordinators are just going to have to be a little more structured about their days.”

The former student staffer said in the email that they believe this change will reduce the time hall coordinators have available to talk with staff and residents. Many residents, the staffer said, talk with hall coordinators about a variety of subjects and the hall coordinator can act as a mentor.
“In my time as a hall coordinator, I can think of maybe two Saturdays in the entire semester that I did not work and a lot of that was not my own doing, but a lot of times I would go about my own business after hours and I would come across a situation and which you can't just avoid or ignore living in the residence halls,” the former hall coordinator said.

One reason that this change might have an especially hard impact on hall coordinators and student staff is that it is coming in the middle of the semester, the former hall coordinator said.

When a hall coordinator is on duty, they will receive standby and call-back pay. Employees only qualify for overtime pay for each additional hour worked over 40 hours a week.

The university is offering a Voluntary Payment Adjustment program to employees who are making the transition from salaried to hourly payroll due to the change in the federal Fair Labor Standards Act regulations, according to the UM System Human Resources website.

The adjustment is an interest-free payment for employees who may experience financial hardship as a result of the change to the FLSA mandate. The payment amount would be the difference in the employee’s net pay from September to October, rounded to the next whole dollar. Amounts less than $60 are eliminated. The payment will be dispersed in November and must be repaid by April 2017.

The changes to the Fair Labor Standards Act are meant to ensure overtime protections for workers, according to the Guidance for Higher Education Institutions on Paying Overtime under the Fair Labor Standards Act, a document provided by the Wage and Hour Division of the United States Department of Labor.

“I think in the long run it will have a positive effect because the nature of the job is to work long hours and when you are working and living in the same environment, that takes a toll on your body,” the former hall coordinator said. “I think that the fact that this change, this regulation, is trying to prevent that will be helpful. But I think in the short term, for this next year or the next two years, it’s going to be very hard on the current hall coordinators and the current staff as well.”
Columbia Family Medical Group finalizes affiliation with MU Health

An affiliation between Columbia Family Medical Group and University of Missouri Health Care, which UM curators learned about two weeks ago, became official Wednesday, formalizing a relationship that dates back four decades.

The decision to affiliate with MU Health followed several years of discussion about ways collaboration could improve the quality of patient care while meeting new government and insurance standards to hold down costs, said George Prica, medical director at Columbia Family Medical Group.

In a private setting, Prica said, meeting the new mandates to use electronic medical records and technology as a key part of preventing disease and keeping patients healthy “becomes more difficult if not impossible.”

“A lot of doctors are being asked to become clerical workers” to perform record-keeping and business management duties, Prica said, rather than providing “eye-to-eye, direct contact” with patients. An affiliation with MU Health will include access to the “robust electronic health record system” established by Cerner Corp.

Prica said Columbia Family Medical Group physicians have had teaching duties and clinical instruction roles with MU Health’s academic medical center during the group’s 40 years of practice. Prica, who has been with the group for 37 years, said it has had affiliation discussions “on and off” for 20 years with both Boone Hospital Center and MU Health.

Columbia Family Medical Group physicians and staff will continue to serve patients at 303 N. Keene St. MU Health will establish a separate corporation for the affiliation with the group, which will continue to have privileges at Boone Hospital Center but also at University Hospital, MU Women’s and Children’s Hospital, and other MU Health facilities.

“Although they are in essence buying us out, so to speak, we maintain the ability to maintain our particular culture, autonomy and decision-making,” Prica said.

Prica now will report to MU Health CEO Mitch Wasden, and MU Health will be involved in managing the group, which has six physicians — five of whom earned their medical degrees from the MU School of Medicine — a nurse practitioner and a physician’s assistant, along with 32 other health professionals and support staff.
MU Health employs more than 500 university physicians, including about 70 family and community medicine providers.

The MU Health system’s expansion plans were part of Wasden’s presentation to UM curators at their Oct. 6 meeting in Kansas City. Wasden presented information that MU Health had already affiliated with Columbia Family Medical Group and Fulton Family Health. Just days later, MU Health spokeswoman Mary Jenkins said the information presented to curators was incorrect but she would not say whether MU Health was negotiating affiliation agreements with those practices or other independent medical providers.

The expansion plan fits in with an anonymous memo circulating at least since spring that outlined a conversation among MU Health and Anthem Blue Cross and Blue Shield executives about ways MU Health could become “the Mayo of the Midwest” by bringing private practice physicians under the MU Health umbrella.

MU Health and Anthem officials have not acknowledged or commented on the memo.

University of Missouri Health System, an academic health center, comprises four entities: MU Health, the MU School of Medicine, the Sinclair School of Nursing and the School of Health Professions. MU Health operates more than 50 outpatient clinics.

In a news release announcing the affiliation with Columbia Family Medical Group, Wasden said the health system’s goal “is to build on Columbia’s already-excellent reputation as a destination for primary care.”

“This affiliation will allow both Columbia Family Medical Group and University of Missouri Health Care to create new opportunities to collaborate, improve and promote high quality care for patients in central Missouri,” Wasden said.

MU Health affiliated with Columbia Surgical Associates in 2014. Last week, five general surgeons at the surgery practice announced they will no longer operate at Boone Hospital as of Dec. 1 and will use only MU Health operating rooms for inpatient general surgical procedures.
Two medical groups modify ties to local hospitals


Columbia, MO - **Within one week, two separate announcements have been made about medical groups adding or modifying their affiliations with Boone Hospital Center. Both groups are aligning with University of Missouri Health Care.**

A portion of the first group will sever ties with Boone Hospital from Columbia Surgical Associates. Beginning December 1, the group's five general surgeons will only perform inpatient surgical procedures at University Hospital. CSA's vascular surgeons will continue to use Boone Hospital facilities. The group will also continue to perform outpatient procedures at its own surgical center located at 3223 Bluff Creek Drive in Columbia.

The second group modifying their ties to Boone is the Columbia Family Medical Group. They are creating an affiliation with UM Health. That group is comprised of eight physicians, one nurse practitioner, a physician assistant, and 32 other support staff members. CFMG has provided medical care for 40 years here in central Missouri. The release stated the decision would allow both UM Health and the group new opportunities to collaborate, and improve on the high quality health care both entities already provide. CFMG will continue to see patients at its current clinic location at 303 Keene St., Suite 301. The new affiliation will begin immediately.
MU Communications Professor Explains Prevalence of Negative Campaign Ads

Generated from News Bureau expert pitch

Watch the story: http://mms.tveyes.com/PlaybackPortal.aspx?SavedEditID=6da0a84f-28b0-4a7d-bd87-37940ac307eb

Leading Cause of Hunter Injury is Falling from Tree Stands According to MU Health

Watch the story: http://mms.tveyes.com/PlaybackPortal.aspx?SavedEditID=e7cdf651-b53c-4a9b-932f-8b588a36039b

Story ran on the following stations:
KGET- Bakersfield, CA
KPVI- Idaho Falls, ID
WBBJ- Jackson, TN
KEYC- Mankato, MN
COLUMBIA — If you don't filter your drinking water, you might want to give it some serious thought.

Columbia's drinking water contains 1.3 parts per billion of chromium-6 and 0.0499 parts per million of trihalomethane, both associated with cancer.

Chromium-6 and chlorine-chloramine disinfection cycles have been making news lately due to a report by the Environmental Working Group, which called for stricter chromium-6 regulations, and a widely circulated September Facebook post by environmental activist Erin Brockovich that named Columbia as a city with dangerously high levels of trihalomethane because of its use of chlorine for disinfecting drinking water.

The Missourian looked into both issues. Here's what we found.

**Chromium-6**

Columbia's water tested at 1.3 parts per billion, placing the city above many major metropolitan areas across the U.S., including Omaha, Nebraska, Los Angeles, Chicago, Oklahoma City, Washington, D.C., New York, Denver and Dallas to name a few. Kansas City's Chromium 6 level at 2.5 parts per billion is above Columbia's, but St. Louis falls below.

Boone County's average chromium-6 level, on the other hand, is 0.174 parts per billion.

Missouri water is below the legal limit of 100 parts per billion for total chromium — both chromium-3 and chromium-6. But California scientists think that the limit should be lower, according to an Environmental Working Group report.
California Department of Public Health scientists believe the limit for chromium-6 alone should be 0.02 parts per billion, or 50 times less than what the Environmental Protection Agency deems safe.

Although both types of chromium can occur naturally, and chromium-3 is an essential human nutrient used to process sugar, proteins and fat, chromium-6 is toxic. When consumed in large quantities, it can cause lung cancer, liver damage, reproductive problems and developmental harm, according to the report.

It is manufactured for use in steelmaking, chrome plating, manufacturing dyes and pigments and preserving leather and wood.

Environmental Working Group estimates if regulations go unchanged, chromium-6 will cause more than 12,000 cases of cancer by the end of the century. But the solution — stricter regulation — isn't cheap. California's Department of Public Health estimates treating its state's water alone to meet 10 parts per billion would cost $20 million a year.

Missouri's Department of Natural Resources keeps track of total chromium levels and doesn't see a problem with the state's data, department spokesman Tom Bastian said.

The original total chromium level, which is still followed, was established by the EPA in 1991. According to the agency's website, it is reviewing data from a 2008 study and will reassess the level once that's done. The website was last updated in 2015.

**Chlorine-chloramine disinfection**

Brockovich posted on her Facebook page in September about Columbia Water and Light "burning out" the drinking water:

By "burning out" she means using chlorine to disinfect the city's drinking water. When she talks about Columbia Water and Light turning "the ammonia back on to hide the true test results," she is referring to the department switching from chlorine to chloramine (chlorine plus ammonia) to disinfect the water.
Columbia Water and Light usually uses chlorine for four months and then uses chloramine for the rest of the year, spokeswoman Connie Kacprowicz said. The Missouri Department of Natural Resources provides guidance to the city in its disinfection process.

**Chlorine and chloramine are two of the most commonly used disinfectants, said Enos Inniss, an MU assistant teaching professor in civil and environmental engineering. The two are used to minimize waterborne disease. The two chemicals do their job.**

"Chlorine is very potent," he said.

But it forms byproducts. So does chloramine. The byproduct Brockovich is concerned with is trihalomethane — usually measured as total trihalomethane (TTHM) — which has caused cancer in lab animals, according to the Water Research Center.

As far as its effect on humans, Inniss said, that depends on the length of exposure.

If trihalomethane levels increase for only a couple weeks out of the year, Inniss said it is worth it. Chlorine helps reduce nitrate levels, a potential byproduct of chloramine disinfection.

Exposure to nitrates can cause methemoglobinemia, cancer, disruption of thyroid function and birth defects. The EPA's limit of nitrates in water is 10 parts per million.

Chloramine is the normal disinfectant used in Columbia water. Once nitrate levels become too high, though, chlorine is used. Once the nitrate numbers decrease, chloramine is reintroduced.

The primary use of disinfectants, Inniss said, is to ensure the water remains safe and disease free until it reaches the customers. Once it gets to your fridge or sink faucet, they aren't needed any more. That's what water filters are for, he said.

As far as regulations go, Inniss said residents have an important voice if they want to use it. But education comes first.

"Once you know those answers, then you can make decisions," he said.