



## City Council Meeting Minutes

Vancouver City Hall | Council Chambers | 415 W. 6th St.  
PO Box 1995 | Vancouver, WA 98668-1995  
[cityofvancouver.us](http://cityofvancouver.us)

Anne McEnerney-Ogle, Mayor • Bart Hansen • Ty Stober • Erik Paulsen • Sarah J. Fox • Diana H. Perez • Kim D. Harless

**May 5, 2025**

**Workshops: 4:00-6:00 p.m.**

Vancouver City Hall - Council Chambers - 415 W 6th Street, Vancouver WA

*The City Council Meeting was held on 5/5/2025 at 4:00 PM in the Vancouver City Hall, Council Chambers 415 West 6th Street, Vancouver, WA 98660.*

*Workshops were conducted in person in the Council Chambers of City Hall. Members of the public were invited to view the meeting in person, via the live broadcast on [www.cvtv.org](http://www.cvtv.org) and CVTV cable channels 23 or HD 323, or on the City's Facebook page, or [www.facebook.com/VancouverUS](http://www.facebook.com/VancouverUS).*

*View the CVTV video recording, including presentations and discussion, for workshops at:*

[https://www.cvtv.org/vid\\_link/37869?startStreamAt=0&stopStreamAt=7320](https://www.cvtv.org/vid_link/37869?startStreamAt=0&stopStreamAt=7320)

**Economic Development Strategy Budget Discussion**

(Approximately 30 minutes)

Chris Harder, Deputy Economic Development Director,  
[chris.harder@cityofvancouver.us](mailto:chris.harder@cityofvancouver.us)

*Staff led Council through a discussion of the Economic Development Strategy Budget Discussion.*

***Councilmembers Hansen, Stober and Paulsen attended the workshop remotely.***

**Equity and Inclusion Update**

(Approximately 45 minutes, to immediately follow the previous workshop)

Nicole Chen, DEI Business Partner, Lisa Brandl, Deputy City Manager,  
[Nikki.Chen@cityofvancouver.us](mailto:Nikki.Chen@cityofvancouver.us), [lisa.brandl@cityofvancouver.us](mailto:lisa.brandl@cityofvancouver.us)

*Staff led Council through a discussion of the Equity and Inclusion Update.*

***Councilmembers Hansen, Stober and Paulsen attended the workshop remotely.***

**Districting Survey Results**

(Approximately 45 minutes, to immediately follow the previous workshop)

Aaron Lande, Program and Policy Development Manager,  
aaron.lande@cityofvancouver.us

*Staff led Council through a discussion of the Districting Survey Results.*

***Councilmembers Hansen, Stober and Paulsen attended the workshop remotely.***

### **Council Dinner / Executive Session Re: Real Estate Negotiations (30 minutes)**

*Mayor McEnery-Ogle announced the Council would be entering into executive session from 6:00-6:30 p.m. to discuss Real Estate Negotiations.*

### **Regular Council Meeting**

6:30 PM

Vancouver City Hall - Council Chambers - 415 W 6th Street, Vancouver WA

*This meeting was conducted as a hybrid meeting with in person and remote viewing and participation over video conference utilizing a GoToMeeting platform. Members of the public were invited to view the meeting in person, via the live broadcast on [www.cvtv.org](http://www.cvtv.org) and CVTV cable channels 23 or HD 323, or on the City's Facebook page, [www.facebook.com/VancouverUS](http://www.facebook.com/VancouverUS). Public access and testimony on Consent Agenda items and under the Community Forum were also facilitated in person and via the GoToMeeting conference call.*

*Vancouver City Council meeting minutes are a record of the action taken by Council. To view the CVTV video recording, including presentations, testimony and discussion, for this meeting please visit:*

[https://www.cvtv.org/vid\\_link/37871?startStreamAt=0&stopStreamAt=2765](https://www.cvtv.org/vid_link/37871?startStreamAt=0&stopStreamAt=2765)

*Electronic audio recording of City Council meetings are kept on file in the office of the City Clerk for a period of six years.*

### **Pledge of Allegiance**

### **Call to Order and Roll Call**

*The regular meeting of the Vancouver City Council was called to order at 6:30 p.m. by Mayor McEnery-Ogle. This meeting was conducted as a hybrid meeting, including both in person and remotely over video conference.*

***Present:*** Councilmember Harless, Councilmember Perez, Councilmember Fox, Councilmember Hansen, Mayor McEnery-Ogle

***Absent:*** Councilmember Paulsen, Councilmember Stober

***Motion by Councilmember Perez, seconded by Councilmember Fox, and Yes: 5, No: 0, Abstaining: 0, to excuse Councilmembers Paulsen and Stober. Absent from vote: Councilmember Paulsen, Councilmember Stober.***

***Councilmember Hansen joined the meeting remotely.***

## **Approval of Minutes**

### **Minutes - April 28, 2025**

***Motion by Councilmember Hansen, seconded by Councilmember Fox, and Yes: 5, No: 0, Abstaining: 0, to approve the April 28, 2025 Meeting Minutes. Absent from vote: Councilmember Paulsen, Councilmember Stober.***

## **Proclamations**

### **Small Business Week**

*Mayor McEnery-Ogle read and presented a proclamation to Kyle Todd, Certified Business Advisor of Small Business Development Center WSUV, proclaiming May 4-10, 2025, as Small Business Week.*

### **Small Business Month**

*Mayor McEnery-Ogle read and presented a proclamation to Kimberly Quiroz, Senior Business Developer, Hispanic Metropolitan Chamber, proclaiming May 2025, as Small Business Month.*

### **National Day of Awareness for Missing and Murdered Indigenous Women and Persons**

*Mayor McEnery-Ogle read and presented a proclamation to Duana Ricks-Johnson, Colville/ Lakes Tribal Member, MMIWP Advocate/Speaker, proclaiming May 5, 2025, as National Day of Awareness for Missing and Murdered Indigenous Women and Persons.*

## **Community Communication**

This is the place on the agenda where the public is invited to speak to Council regarding any matter on the Agenda not already scheduled for Public Hearing. (Separate instructions are provided for offering testimony on Public Hearing when applicable.) This includes the option to testify about Workshops. Members of the public addressing Council are requested to give their name and city of residence for the audio record. Speakers are to limit their testimony to a total of three minutes for all items combined.

*Mayor McEnerny-Ogle opened Community Communication and received testimony from the following community members regarding any matter on the agenda not scheduled for a Public Hearing:*

- *Kimberlee Goheen Elbon, La Center, WA*
- *Carmen DeLeon, Vancouver*
- *Wynn Grcich, Vancouver*
- *Kelsey Huwaldt, Battle Ground, WA*

*There being no further testimony, Mayor McEnerny-Ogle closed Community Communication.*

### **Consent Agenda**

The following items will be passed by a single motion to approve all listed actions and resolutions. There will be no discussion on these items unless requested by Council. If discussion is requested, the item will be moved from the Consent Agenda and considered separately – after the motion has been made and passed to approve the remaining items.

***Motion by Councilmember Fox, seconded by Councilmember Harless, and Yes: 5, No: 0, Abstaining: 0, to approve Items 1-6 on the Consent agenda. Absent from vote: Councilmember Paulsen, Councilmember Stober.***

#### **1. Release of Sanitary Sewer Easement – Stone’s Throw Planned Unit Development Phase 1**

##### **Staff Report: 091-25**

Request: On Monday, May 5, 2025, authorize the City Manager, or designee, to sign the attached easement release.

Sheryl Hale, Engineering Manager, sheryl.hale@cityofvancouver.us

***Motion approved the request.***

#### **2. Contract Amendment - On-Call Sanitary Sewer Collections Planning and Design - C-100983 and C-100988**

##### **Staff Report: 092-25**

Request: On Monday, May 5, 2025, authorize the City Manager, or designee, to finalize and execute amendments to Professional Services Agreements C-100983 with Consor, and C-100988 with Jacobs, to increase the not to exceed value to \$2,000,000 for the 5-year life of each contract.



Sheryl Hale, Engineering Manager, sheryl.hale@cityofvancouver.us

***Motion approved the request.***

**3. Contract Amendment - New Public Works Operations Campus - TCF Architecture - C-101028**

**Staff Report: 093-25**

Request: On Monday, May 5, 2025, authorize the City Manager, or designee, to enter into a professional services contract amendment with TCF Architecture of Tacoma, WA for the continuation of design services and addition of construction administration in an amount not to exceed \$11,896,620.

Jason Olson, Capital Projects Project Manager,  
Jason.Olson@cityofvancouver.us

***Motion approved the request.***

**4. Contract Award - McFarlane's Bark for Yard Debris and Leaves Receiving and Processing Services - C-101949**

**Staff Report: 094-25**

Request: On Monday, May 5, 2025, authorize the City Manager, or designee, to finalize and execute contract (C-101949) with McFarlane's Bark for Yard Debris and Leaves Receiving and Processing Services for as-needed yard debris and leaves receiving and processing services for five years effective June 1, 2025, not to exceed \$1,750,000.

Julie Gilbertson, Solid Waste Supervisor, Elizabeth Erickson, Solid Waste Management Analyst, Joshua Francis, Procurement Specialist,  
julie.gilbertson@cityofvancouver.us,  
elizabeth.erickson@cityofvancouver.us,  
joshua.francis@cityofvancouver.us

***Motion approved the request.***

**5. 2025-2029 Vancouver Commute Trip Reduction Plan**

**AN ORDINANCE** of the City of Vancouver, Washington relating to the City of Vancouver Commute Trip Reduction Plan as identified in Chapter 18.12 Vancouver Municipal Code (VMC) and by the Growth Management Act through RCW 36.70A.110 and by the Washington Clean Air Act through RCW 70A.15.4020, amending VMC 18.12.030 to adopt the 2025 – 2029 Vancouver Commute Trip Reduction Plan; providing for severability and an effective date.

**Staff Report: 095-25**

Request: On Monday, May 5, 2025, advance the ordinance after first reading and on Monday, May 12, 2025 adopt the ordinance at a public hearing.

Olivia Kahn, Transportation Demand Management Coordinator, Kate Drennan, Transportation Planning Program Manager, olivia.kahn@cityofvancouver.us, kate.drennan@cityofvancouver.us

***Mayor McEnerny-Ogle read the title of the ordinance into the record.***

***Motion approved the request.***

**6. Approval of Claim Vouchers**

Request: Approve claim vouchers for May 5, 2025.

***Motion approved claim vouchers in the amount of \$8,316,339.32.***

**Communications**

**A. From the Council**

**B. From the Mayor**

**C. From the City Manager**

Property Tax Program

*Holly Hill, Program Outreach Coordinator, Clark County Assessor's Office, discussed the Property Tax Program.*

**Adjournment**

**7:15 p.m.**

DocuSigned by:

*Anne McEnerny-Ogle*

6C89D9089EC5424...

Anne McEnerny-Ogle, Mayor

Attest:

DocuSigned by:

*Natasha Ramras*

493E940414AE4BD...

DocuSigned by:

*Anne McEnerny-Ogle*

6C89D9089E15424...  
Natasha Ramras, City Clerk

The written comments below are those of the submitter alone and are not representative of the views of CVTV or the City of Vancouver, its elected or appointed officials, or its employees.

**From:** [City of Vancouver, WA](#)  
**To:** [City Council](#)  
**Subject:** Submission: Contact City Council  
**Date:** Monday, April 28, 2025 8:26:32 PM

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# Contact the City Council

|   |
|---|
| <b>Name</b>   |
| Leah Perkel   |
| <b>Email</b>  |
| [REDACTED]  |
| <b>Phone</b>  |
| [REDACTED]  |
| <b>Address</b>  |
| [REDACTED]<br>Vancouver 98663<br>United States<br><a href="#">Map It</a>  |
| <b>Subject</b>  |
| Share an Opinion of a City project or Initiative  |
| <b>Choose Recipient</b>   |
| All the Council   |
| <b>Message</b>  |
| <p>I was listening to tonights city council workshop meeting. I feel strongly that we need to move to 6 districts and 1 at large (the mayor). When I ran for City council in 2023 I spoke with voters at the doors all across the city. And several area's have no representation. For example the area of 112th Ave and Fourth plain commons. And it's more expensive to run city wide then by districts. If we had districts we could have people run who would represent to better represent their communities. It's is very popular amongst the voters.</p> |

**From:** [Dollar, Sarah](#)  
**To:** [Dollar, Sarah](#)  
**Subject:** FW: Benefits of Districts  
**Date:** Thursday, May 1, 2025 10:11:02 AM

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## Testimony

**Sarah Dollar** | Executive Assistant to the City Council  
*Pronouns: She/Her/Hers*  
CITY OF VANCOUVER, WASHINGTON  
City Manager's Office (CMO)  
**Primary (Cell):** 360-624-2949 | **Desk:** 360-487-8641  
[www.cityofvancouver.us](http://www.cityofvancouver.us)

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**From:** Monica Zazueta <[REDACTED]>  
**Sent:** Thursday, May 1, 2025 7:10 AM  
**To:** City Council <council@cityofvancouver.us>  
**Subject:** Benefits of Districts

**CAUTION:** This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Mayor and Council Members,

I am writing to express my strong support for transitioning Vancouver City Council to a district-based representation model. This change is vital as it will enhance local representation, accountability, and civic engagement across our growing and diverse city.

Districts offer benefits, including:

1. **Localized Representation:** Council members focused on specific neighborhoods can better address the unique challenges and needs of their communities.
2. **Increased Civic Engagement:** When residents know they have a dedicated representative, they are more likely to participate in local governance.
3. **Diversity of Perspectives:** A district-based system encourages candidates from varied backgrounds, resulting in richer discussions and more representative decision-making.

There are already recommendations from the charter review committee, a survey, and past community discussions that support this transition.

I urge the City Council to declare its intent to establish six districts, initiate a redistricting commission, and place an amendment to the City Charter on the next ballot.

By supporting this shift, we can ensure that all Vancouver residents have a voice in their local government. Thank you for considering this important change.

Sending you all the best energy for your day,

(My Signature )

~You must always be willing to truly consider evidence that contradicts your beliefs, and admit the possibility you may be wrong. Intelligence isn't knowing everything, it's the ability to challenge everything you know. Let's all give up our fear as a justification for not to take action because we are the creators of our reality.

Sending healing vibes  
Monica Zazueta Tabor  
Concerned Mum



Sharing energy,

1.

Doughnut Economics 7 Ways to Think Like a 21st Century Economist  
by Kate Raworth

Free digital copy of the book,

<https://fenix.tecnico.ulisboa.pt/downloadFile/845043405579281/Raworth%20%282017%29%20Doughnut%20Economics.pdf>

2.

29 minute video explaining Doughnut Economics

"How radical ideas can turn into transformative practice. Stockholm impact week 2023"

<https://youtu.be/qwyzsAWRMcw?si=Hut8czYBLqAjOBpb>

3.

Nate Hagens: "Episode 100 - The Great Simplification"

<https://youtu.be/GocuMZX3hls?si=impadsCjN-aGZzk0>

**From:** [City of Vancouver, WA](#)  
**To:** [City Council](#)  
**Subject:** Submission: Contact City Council  
**Date:** Thursday, May 1, 2025 7:37:41 PM

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# Contact the City Council

|  |
|--|
| <b>Name</b>  |
| Kevin Hart   |
| <b>Email</b>   |
| [REDACTED]   |
| <b>Phone</b>   |
| 3609099760   |
| <b>Address</b>   |
| [REDACTED]<br>Vancouver 98661<br>United States<br><a href="#">Map It</a>   |
| <b>Subject</b>   |
| Share an Opinion of a City project or Initiative   |
| <b>Choose Recipient</b>  |
| All the Council  |
| <b>Message</b>   |
| Please oppose city council districting. Dividing Vancouver by geography risks segregation and weakens citywide accountability. Our current at-large system ensures all voters can choose leaders who represent the whole city. Cities like Los Angeles and Seattle show how districting can lead to division, inequity, and political silos. Vancouver is an inclusive city—let's keep it united and ensure every resident's voice counts equally. |



**From:** [Janet Landesberg](#)  
**To:** [City Council](#)  
**Subject:** Testimony in favor of Districts for City Council Workshop On May 5  
**Date:** Thursday, May 1, 2025 9:25:53 PM

You don't often get email from [REDACTED]. [Learn why this is important](#)

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## Why the City Council needs to put districts on the November 2025 Ballot

As a member of the Charter Review Committee, we made several presentations to City Council regarding the need to create districts. At the center of this premise was good governance as set forth in National Civic League Model City Charter, 9<sup>th</sup> Edition, dated November 1, 2021. Because of the size of the city, Vancouver is too large to continue to elect its city counselors and mayor in a citywide election. As we look to become the second largest city in the state through annexation, Vancouver must become more “democratic” and create districts. Our subcommittee proposed a districting charter amendment with 4 districts and 2 at large city councilors. We opined that this might have a better chance with a council with 4 people (including the mayor) who live in close proximity to each other. Kicking the can down the road has been the council’s history regarding districting with three charter review committees. Last year a city council committee was created to study this further and funded a professional survey of citizens. These citizens, who responded to the survey, want districts. It’s time to stop kicking the can down the road. Given the size of the city and the increased costs to mount a campaign, the city should create 6 districts. In the previous city council race, only one candidate (Sarah Fox) had a competitive challenge to her position.

As I stated during my presentation, it is my opinion that the City of Vancouver might face a Voter’s Rights challenge because of its continued use of its archaic manner to vote for its leaders. The sound bites from the dais regarding the resistance to districting appear to center on self-preservation of your seat or that of your colleague. The point is to plan for the future of the city—not your next election.

Sincerely,

Janet Landesberg

**From:** [Kelsey Huwaldt](#)  
**To:** [City Council](#)  
**Cc:** [David Zilavy](#); [Judith Perez Keniston](#)  
**Subject:** May 5 meeting comments  
**Date:** Friday, May 2, 2025 9:28:02 AM

You don't often get email from [REDACTED]. [Learn why this is important](#)

**CAUTION:** This email originated from outside of the City of Vancouver. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello. We'd like to invite you to the Clark Communities Bicycle and Pedestrian Advisory Committee's Policymakers event on May 30 from 9 a.m. to noon to discover our local bicycle and pedestrian facilities and learn about planned and future facilities designed to close gaps and correct safety concerns. This ride strives to create a shared vision for a SAFE, accessible, cohesive, and inclusive active transportation future. Policymakers, community leaders, law enforcement officers, health advocates, transportation planners and engineers are invited to experience Clark County on a bike (or by bus). Mayor Anne is joining us on the mobility tour and councilor Sarah Fox will be joining the bike ride, but we'd like to have each of you join us. You can learn more and sign up at [https://rtc.wa.gov/events/policymakers\\_event/](https://rtc.wa.gov/events/policymakers_event/).

I'm also going to plan on attending the meeting to offer this invite, but wanted to submit this electronically so you all could have the link. Thank you.

Kelsey Huwaldt  
Clark County Bicycle and Pedestrian Advisory Committee  
Learn more about BPAC: <https://clark.wa.gov/community-planning/bicycle-and-pedestrian-advisory-committee>

**From:** [Wynn Grcich](#)  
**To:** [Rebecca Messinger](#)  
**Cc:** [Harris, Rep. Paul](#); [Victorialeeferrer@gmail.com](mailto:Victorialeeferrer@gmail.com); [City Council](#)  
**Subject:** Measles  
**Date:** Tuesday, April 29, 2025 2:05:23 PM

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<https://t.me/DrJudyMikovitsHealthSecrets>. Please send to council members and Melnick. Put on public record and confirm that you did. Thanks from Wynn

## CV19 Bioweapon/Vax Beginning of Transhumanism – Karen Kingston, Greg Hunter

1 message

Wynn Grcich, Vancouver Wed, Jun 7, 2023 at 5:50 AM

## CV19 Bioweapon/Vax Beginning of Transhumanism – Karen Kingston, Greg Hunter

<https://rumble.com/v2sk82q-cv19-bioweaponvax-just-beginning-of-transhumanism-karen-kingston.html>

Karen Kingston is a biotech analyst and former Pfizer employee who understands complicated medical and biological contracts. Kingston warns the mRNA technology in the CV19 bioweapon injections is just the beginning of forcing a transhuman agenda onto an unsuspecting public. If the technology (which is also called a "synthetic pathogen") in the CV19 bioweapon/vax is not stopped, there would be "no flesh would be saved" as Jesus warned more than 2,000 years ago. In a new Substack post, Kingston contends mRNA technology is a weapon of mass destruction and explains, "When I put that headline up that mRNA technologies, Neuralink or Neural Lace, which is the injectable form of Neuralink, are both weapons of mass destruction and transhumanism, this is to do non-human genetic editing to the human genome as well as to integrate bio-digital technology with humans. Those are not my words. Those are Dr. Robert Malone's words during a Glenn Beck interview. This is where he said mRNA technologies are a suite of technologies for the purposes of transhumanism. . . . The reason why I say these are weapons of mass destruction is James Clapper, who is a former Lt. General with the U.S. Airforce and served in the intelligence community under President Clinton, stated that the gene editing mRNA technology are weapons of mass destruction. Because once you make permanent changes to the to a species genome, that's to the extinction of that species. It doesn't matter if it is plants, animals or human beings themselves."

Kingston goes on to say, "What we are breaking today is Covid 19 and the Covid 19 injections have a lot of neurological harmful effects. That's because they are neural weapons as well . . . That's the breaking news here. These CV19 injections include the Neural Lace technology. . . . Even Covid itself was a nanotechnology attack. It was not a virus. It is this lipid nanoparticulate matter. . . . With Covid, people lost their sense of taste and smell. . . . That is a nervous system attack. So, that would have to be a neuroweapon attack. People also have brain fog and fatigue. These are neurological symptoms of being attacked with a neural weapon. So, not only are the CV19 injections bioweapons, chemical weapons and technology weapons, they are also neural weapons. . . . This is complete experimentation on civilians without informed consent, and what the technologies are and potential outcomes of those technologies is by definition biowarfare. It's in violation of the Geneva Convention. It's in violation of the bioweapons convention. It's in violation of the international code for military justice. It's in violation of the 5<sup>th</sup> and 14<sup>th</sup> Amendments. Pfizer, Moderna and the other manufacturers are very guilty of unleashing weapons of mass destruction on global civilians."

Kingston also talks about mRNA technology referred to as synthetic biology that dark powers want to put in your food, water and even the air you breathe. Kingston will tell you how to stay clear of this destructive technology, and how to fight it too by taking things like Ivermectin. Kingston also discusses the need for a mass wakeup to the transhuman agenda using synthetic biology and mRNA. Kingston thinks if enough people can wake up and understand what is happening, this is the best way to bring it to a stop.

In closing, Kingston says, "This is really important for people to understand and that is synthetic biology is changing the entire landscape of our world. . . . When they hijack the photosynthesis process of plants, and that is what they are doing, instead of producing oxygen and glucose, the plant is producing these new proteins which are weaponized. We will decrease the oxygen levels of all current biological lifeforms. So, it's destroying the environment. This is directed evolution and transhumanism. It's not just a war against humanity, it's a war against all of God's creation and all biological lifeforms."



## Zinc Cuts COVID Death Risk by 40%

Analysis by Dr. Joseph Mercola

✓ Fact Checked

November 28, 2022

### STORY AT-A-GLANCE

- > Patients who tested positive for COVID-19 — including 190 outpatients and 280 hospitalized patients — received either oral zinc or a placebo twice daily for 15 days
- > Those taking zinc had a nearly 40% lower rate of death and admission to the intensive care unit (ICU)
- > Those in the zinc group had, on average, a 3.5-day shorter hospital stay while their symptoms resolved 1.9 days sooner than those who received a placebo
- > Research published in 2020 demonstrated that zinc is crucial to immune system function and deficiency can raise your risk of severe COVID-19 illness
- > Zinc has antiviral properties and acts as an immunomodulator; it also inhibits RNA synthesis and viral replication, while deficiency is associated with reduced natural killer cell function

It's estimated that 1 in 3 Americans is deficient in at least 10 minerals, zinc included.<sup>1</sup> Not only does this put them at risk of chronic diseases such as heart disease and diabetes,<sup>2</sup> but it may increase risk of death or a hospital stay from COVID-19 if you're infected.<sup>3</sup>

Zinc has been acknowledged as an essential mineral for human health since the 1970s.<sup>4</sup> It's the second most abundant trace mineral found in the human body,<sup>5</sup> but your body cannot store it very well, so you need to consume foods with zinc every day to meet your body's needs. More than 300 enzymes in your body require zinc for normal function,<sup>6</sup>

and it's well-recognized for its role in immunity and normal immune system development.<sup>7</sup>

During the pandemic, the late Dr. Vladimir Zelenko treated thousands of COVID-19 patients using a combination of hydroxychloroquine (HCQ), azithromycin and zinc sulfate,<sup>8</sup> with great success.

However, the use of zinc for SARS-CoV-2 was a topic routinely flagged by COVID fact checkers as "misinformation," so word didn't really get out about its potential as an anti-COVID agent. Now, research once again shows zinc's promise for keeping people healthy if they get COVID.

## **Zinc Twice a Day Treats COVID-19**

A team of researchers with Fattouma Bourguiba University Hospital in Tunisia set out to determine zinc's efficacy in treating adults with COVID-19. "Like in many other diseases, regulation of white blood cell production using immuno-nutrition is a novel concept that could be applied to COVID-19," they noted. "Some molecules and nutrients such as zinc play central roles in keeping the function and integrity of the immune system."<sup>9</sup>

They conducted a randomized, double-blind, placebo-controlled trial, during which patients who tested positive for COVID-19 – including 190 outpatients and 280 hospitalized patients<sup>10</sup> – received either oral zinc or a placebo twice daily for 15 days. Those taking zinc had a nearly 40% lower rate of death and admission to the intensive care unit (ICU). They also had shorter hospital stays and cut the number of days needed for their symptoms to resolve.<sup>11</sup>

Specifically, mortality after 30 days was 6.5% in the zinc group compared to 9.2% in the placebo group. ICU admission rate was 5.2% in the zinc group and 11.3% in the placebo group. Further, those in the zinc group had, on average, a 3.5-day shorter hospital stay while their symptoms resolved 1.9 days sooner than those who received a placebo.<sup>12</sup>

The beneficial effects of zinc were seen even in subgroups of patients, including those under 65, people with comorbidities and those who needed oxygen therapy at the start



# A Prospective Study of Spontaneous Abortion: Relation to Amount and Source of Drinking Water Consumed in Early Pregnancy

Shanna H. Swan,<sup>1</sup> Kirsten Waller,<sup>1</sup> Barbara Hopkins,<sup>1</sup> Gayle Windham,<sup>1</sup> Laura Fenster,<sup>1</sup>  
Catherine Schaefer,<sup>2</sup> and Raymond R. Neutra<sup>1</sup>

In 1992, we published four retrospective studies, conducted primarily within a single California county, which found higher spontaneous abortion rates among women who drank more tapwater than bottled water in early pregnancy. The current prospective study extends that investigation to other water systems. Pregnant women from three regions in California were interviewed during their first trimester. Multivariate analyses modeled the amount and type of water consumed at 8 weeks' gestation in each region in relation to spontaneous abortion rate. In Region I, which was within the previous study area, the adjusted odds ratio (OR) comparing high ( $\geq 6$  glasses per day) consumption of cold tapwater with none was 2.17 [95% confidence interval (CI) = 1.22-3.87]. Furthermore, when women with high cold tapwater and no bottled water consumption were compared with those with high bottled water and no cold tapwater consumption, the adjusted odds

ratio was 4.58 (95% CI = 1.97-10.64). Conversely, women with high bottled water consumption and no tapwater had a reduced rate of spontaneous abortion compared with those drinking tapwater and no bottled water (adjusted OR = 0.22; 95% CI = 0.09-0.51). Neither tap nor bottled water consumption altered the risk of spontaneous abortion in Regions II and III. Although controlling for age, prior spontaneous abortion, race, gestational age at interview, and weight somewhat strengthened the association in Region I, the distribution of these confounders did not vary appreciably across regions. This study confirms the association between cold tapwater and spontaneous abortion first seen in this county in 1980. If causal, the agent(s) is not ubiquitous but is likely to have been present in Region I for some time. (*Epidemiology* 1998;9:126-133)

Keywords: spontaneous abortion, drinking water, tapwater, bottled water.

In 1992, a single issue of this journal reported a series of retrospective studies in which the risk of spontaneous abortion was examined in relation to the source and amount of drinking water consumed during early pregnancy.<sup>1-3</sup> These studies included subjects residing primarily in a single California county, who became pregnant between 1980 and 1987. Study designs differed (two cross-sectional,<sup>1,2</sup> one case-cohort,<sup>2</sup> and two case-control<sup>1,3</sup>), but all had retrospective assessment of water exposure. The strongest associations were seen in the two cross-sectional studies, in which considerable publicity made subjects aware of the study hypothesis. Data from four studies were consistent with a 10-50% greater

risk of spontaneous abortion in women who drank tap (or mostly tap) water compared with those who drank no tapwater.<sup>4</sup> One smaller study in the same county did not find this association, although its power was limited.<sup>5</sup> Two accompanying commentaries<sup>6,7</sup> and a discussion on sources of bias and confounding<sup>8</sup> proposed recall bias as a likely explanation.

The current study was conducted to extend this investigation to a later time period and to different water systems, as well as to eliminate recall bias by using a prospective design. We selected three regions in California, representing a range of water systems, for study. Here, we present region-specific results on spontaneous abortion risk by amount and source of drinking water. No analysis of water constituents or water companies is given here; an analysis of chlorination by-products and spontaneous abortion risk in this dataset is published separately.<sup>10</sup>

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Editors' note: See related editorial on page 113 of this issue.

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## Subjects and Methods

### STUDY REGIONS AND POPULATIONS

The study population was recruited between January 1990 and September 1991. Collaboration with the Division of Research of the Kaiser Permanente Medical

## Review

## Developmental Fluoride Neurotoxicity: A Systematic Review and Meta-Analysis

Anna L. Choi,<sup>1</sup> Guifan Sun,<sup>2</sup> Ying Zhang,<sup>3</sup> and Philippe Grandjean<sup>1,4</sup><sup>1</sup>Department of Environmental Health, Harvard School of Public Health, Boston, Massachusetts, USA; <sup>2</sup>School of Public Health, China Medical University, Shenyang, China; <sup>3</sup>School of Stomatology, China Medical University, Shenyang, China; <sup>4</sup>Institute of Public Health, University of Southern Denmark, Odense, Denmark

**BACKGROUND:** Although fluoride may cause neurotoxicity in animal models and acute fluoride poisoning causes neurotoxicity in adults, very little is known of its effects on children's neurodevelopment.

**OBJECTIVE:** We performed a systematic review and meta-analysis of published studies to investigate the effects of increased fluoride exposure and delayed neurobehavioral development.

**METHODS:** We searched the MEDLINE, EMBASE, Water Resources Abstracts, and TOXNET databases through 2011 for eligible studies. We also searched the China National Knowledge Infrastructure (CNKI) database, because many studies on fluoride neurotoxicity have been published in Chinese journals only. In total, we identified 27 eligible epidemiological studies with high and reference exposures, end points of IQ scores, or related cognitive function measures with means and variances for the two exposure groups. Using random-effects models, we estimated the standardized mean difference between exposed and reference groups across all studies. We conducted sensitivity analyses restricted to studies using the same outcome assessment and having drinking-water fluoride as the only exposure. We performed the Cochran test for heterogeneity between studies, Begg's funnel plot, and Egger test to assess publication bias, and conducted meta-regressions to explore sources of variation in mean differences among the studies.

**RESULTS:** The standardized weighted mean difference in IQ score between exposed and reference populations was -0.45 (95% confidence interval: -0.56, -0.35) using a random-effects model. Thus, children in high-fluoride areas had significantly lower IQ scores than those who lived in low-fluoride areas. Subgroup and sensitivity analyses also indicated inverse associations, although the substantial heterogeneity did not appear to decrease.

**CONCLUSIONS:** The results support the possibility of an adverse effect of high fluoride exposure on children's neurodevelopment. Future research should include detailed individual-level information on prenatal exposure, neurobehavioral performance, and covariates for adjustment.

**KEY WORDS:** fluoride, intelligence, neurotoxicity. *Environ Health Perspect* 120:1362–1368 (2012). <http://dx.doi.org/10.1289/ehp.1104912> [Online 20 July 2012]

A recent report from the National Research Council (NRC 2006) concluded that adverse effects of high fluoride concentrations in drinking water may be of concern and that additional research is warranted. Fluoride may cause neurotoxicity in laboratory animals, including effects on learning and memory (Chioca et al. 2008; Mullenix et al. 1995). A recent experimental study where the rat hippocampal neurons were incubated with various concentrations (20 mg/L, 40 mg/L, and 80 mg/L) of sodium fluoride *in vitro* showed that fluoride neurotoxicity may target hippocampal neurons (Zhang M et al. 2008). Although acute fluoride poisoning may be neurotoxic to adults, most of the epidemiological information available on associations with children's neurodevelopment is from China, where fluoride generally occurs in drinking water as a natural contaminant, and the concentration depends on local geological conditions. In many rural communities in China, populations with high exposure to fluoride in local drinking-water sources may reside in close proximity to populations with low exposure (NRC 2006).

Opportunities for epidemiological studies depend on the existence of comparable population groups exposed to different levels

of fluoride from drinking water. Such circumstances are difficult to find in many industrialized countries, because fluoride concentrations in community water are usually no higher than 1 mg/L, even when fluoride is added to water supplies as a public health measure to reduce tooth decay. Multiple epidemiological studies of developmental fluoride neurotoxicity were conducted in China because of the high fluoride concentrations that are substantially above 1 mg/L in well water in many rural communities, although microbiologically safe water has been accessible to many rural households as a result of the recent 5-year plan (2001–2005) by the Chinese government. It is projected that all rural residents will have access to safe public drinking water by 2020 (World Bank 2006). However, results of the published studies have not been widely disseminated. Four studies published in English (Li XS et al. 1995; Lu et al. 2000; Xiang et al. 2003; Zhao et al. 1996) were cited in a recent report from the NRC (2006), whereas the World Health Organization (2002) has considered only two (Li XS et al. 1995; Zhao et al. 1996) in its most recent monograph on fluoride.

Fluoride readily crosses the placenta

(Registry 2003). Fluoride exposure to the developing brain, which is much more susceptible to injury caused by toxicants than is the mature brain, may possibly lead to permanent damage (Grandjean and Landrigan 2006). In response to the recommendation of the NRC (2006), the U.S. Department of Health and Human Services (DHHS) and the U.S. EPA recently announced that DHHS is proposing to change the recommended level of fluoride in drinking water to 0.7 mg/L from the currently recommended range of 0.7–1.2 mg/L, and the U.S. EPA is reviewing the maximum amount of fluoride allowed in drinking water, which currently is set at 4.0 mg/L (U.S. EPA 2011).

To summarize the available literature, we performed a systematic review and meta-analysis of published studies on increased fluoride exposure in drinking water associated with neurodevelopmental delays. We specifically targeted studies carried out in rural China that have not been widely disseminated, thus complementing the studies that have been included in previous reviews and risk assessment reports.

## Methods

**Search strategy.** We searched MEDLINE (National Library of Medicine, Bethesda, MD, USA; <http://www.ncbi.nlm.nih.gov/pubmed>), Embase (Elsevier B.V., Amsterdam, the Netherlands; <http://www.embase.com>), Water Resources Abstracts (Proquest, Ann Arbor, MI, USA; <http://www.csa.com/factsheets/water-resources-sci-c.php>), and TOXNET (Toxicology Data Network; National Library of Medicine, Bethesda, MD, USA; <http://toxnet.nlm.nih.gov>) databases to identify studies of drinking-water fluoride and neurodevelopmental outcomes in children. In addition, we searched the China National Knowledge Infrastructure (CNKI; Beijing, China; <http://www.cnki.net>) database to identify studies published in Chinese journals only. Key

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Supplemental Material is available online (<http://dx.doi.org/10.1289/ehp.1104912>).

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The authors declare they have no actual or potential competing financial interests.



# Fluoride in Drinking Water Increases Toxicity of Aluminum

Posted: July, 2001

In 1994, the New York Times reported a scientific study that revealed that aluminum and fluoride in water could be responsible for the alarming increase in Alzheimer's Disease and senile dementia.

This confirmed the long-held suspicion of environmental writer George Glasser that fluoride has the ability to react with other toxic minerals in drinking water. Serious drug interactions are common in medicine, and for years Glasser has badgered various US government agencies to investigate this specific interaction between fluoride and other substances.

"Aluminum sulfate (alum) is used to clarify drinking water and I could see the possible relationship with Alzheimer's-like dementia," said Glasser. "In 1999, the US Environmental Protection Agency finally reviewed three studies carried out by scientists at Binghamton University in New York. The scientists reported 80% death rates, kidney damage and brain damage in rats exposed to half of one milligram of aluminum fluoride complexes in a liter of drinking water. This is less than half of the amount of fluoride which is added in fluoridation schemes.

Finally, the National Toxicology Program was asked to commission studies to determine the extent of neurotoxic damage from aluminum in drinking water, particularly stressing the fluoride interaction."

Last October, a Report by the National Institutes of Environmental Health Sciences (NIEHS) acknowledged that fluoride has been observed to have synergistic effects on the toxicity of aluminum.

"I was particularly pleased when the US Environmental Protection Agency report by Urbansky and Schock on the toxicity of lead and fluoride in drinking water confirmed that fluoride complexes with other substances in the water. They also acknowledged that most drinking water contains a substantial amount of fluoro-aluminum complexes. This should be a warning to dentists who hold with the simplistic notion that fluoride only affects teeth and is perfectly safe in drinking water."

According to the NIEHS Report, most water treatment processes result in increased levels of aluminum in the finished drinking water.

It stated that fluoridation will result in aluminum fluoride complexes which will enhance neurotoxicity, or that fluoride itself will enhance uptake and synergise the toxicity of the aluminum.

Other studies have shown that in the presence of fluoride, aluminum leaches out of cookware. Boiling fluoridated tap water in an aluminum pan leached almost 200 parts per million (ppm) of aluminum into the water in 10 minutes.

Leaching of up to 600 PPM occurred with prolonged boiling. Different releases of aluminum depend upon the composition of the pan and the type of food being cooked.

Using non-fluoridated water showed almost no leaching from aluminum pans.

Glasser is frustrated that the Report recommended further studies. "There are more than 40,000 studies on fluoride in the scientific literature. How many more do they need? The



## Zinc Cuts COVID Death Risk by 40%

Analysis by Dr. Joseph Mercola

✓ Fact Checked

November 28, 2022

### STORY AT-A-GLANCE

- > Patients who tested positive for COVID-19 — including 190 outpatients and 280 hospitalized patients — received either oral zinc or a placebo twice daily for 15 days
- > Those taking zinc had a nearly 40% lower rate of death and admission to the intensive care unit (ICU)
- > Those in the zinc group had, on average, a 3.5-day shorter hospital stay while their symptoms resolved 1.9 days sooner than those who received a placebo
- > Research published in 2020 demonstrated that zinc is crucial to immune system function and deficiency can raise your risk of severe COVID-19 illness
- > Zinc has antiviral properties and acts as an immunomodulator; it also inhibits RNA synthesis and viral replication, while deficiency is associated with reduced natural killer cell function

It's estimated that 1 in 3 Americans is deficient in at least 10 minerals, zinc included.<sup>1</sup> Not only does this put them at risk of chronic diseases such as heart disease and diabetes,<sup>2</sup> but it may increase risk of death or a hospital stay from COVID-19 if you're infected.<sup>3</sup>

Zinc has been acknowledged as an essential mineral for human health since the 1970s.<sup>4</sup> It's the second most abundant trace mineral found in the human body,<sup>5</sup> but your body cannot store it very well, so you need to consume foods with zinc every day to meet your body's needs. More than 300 enzymes in your body require zinc for normal function,<sup>6</sup>

and it's well-recognized for its role in immunity and normal immune system development.<sup>7</sup>

During the pandemic, the late Dr. Vladimir Zelenko treated thousands of COVID-19 patients using a combination of hydroxychloroquine (HCQ), azithromycin and zinc sulfate,<sup>8</sup> with great success.

However, the use of zinc for SARS-CoV-2 was a topic routinely flagged by COVID fact checkers as "misinformation," so word didn't really get out about its potential as an anti-COVID agent. Now, research once again shows zinc's promise for keeping people healthy if they get COVID.

## **Zinc Twice a Day Treats COVID-19**

A team of researchers with Fattouma Bourguiba University Hospital in Tunisia set out to determine zinc's efficacy in treating adults with COVID-19. "Like in many other diseases, regulation of white blood cell production using immuno-nutrition is a novel concept that could be applied to COVID-19," they noted. "Some molecules and nutrients such as zinc play central roles in keeping the function and integrity of the immune system."<sup>9</sup>

They conducted a randomized, double-blind, placebo-controlled trial, during which patients who tested positive for COVID-19 – including 190 outpatients and 280 hospitalized patients<sup>10</sup> – received either oral zinc or a placebo twice daily for 15 days. Those taking zinc had a nearly 40% lower rate of death and admission to the intensive care unit (ICU). They also had shorter hospital stays and cut the number of days needed for their symptoms to resolve.<sup>11</sup>

Specifically, mortality after 30 days was 6.5% in the zinc group compared to 9.2% in the placebo group. ICU admission rate was 5.2% in the zinc group and 11.3% in the placebo group. Further, those in the zinc group had, on average, a 3.5-day shorter hospital stay while their symptoms resolved 1.9 days sooner than those who received a placebo.<sup>12</sup>

The beneficial effects of zinc were seen even in subgroups of patients, including those under 65, people with comorbidities and those who needed oxygen therapy at the start

control for years have died within weeks of a stage IV cancer following vaccination.

Molecular biologists examined several vials of the COVID-19 “vaccine” and found thousands of fragments of foreign DNA — most likely from the cells used to grow the virus. This was reported at the time, and the study has been repeated, with new researchers finding the exact same thing: thousands of bits of foreign DNA in each vaccine vial.

They also found a promoter/enhancer gene for the SV40 cancer virus in each of the vials.

Research has demonstrated that DNA fragments from vaccines can be incorporated into a person’s DNA and be transmitted to their offspring.

Even the mRNA producing the spike protein (the toxic part of the virus) has been shown to be incorporated into an injected person’s DNA, thus producing the deadly spike protein, possibly for a lifetime. That would also enable it to be transmitted to the person’s offspring.

In another comprehensive study based on 325 autopsy studies reported in the medical literature, Dr. James Lyons-Weiler (a friend of mine) along with nine other experts representing many scientific fields looked for a possible connection to the COVID vaccine as a cause of death. They found most of the deaths occurred within one week after getting the injection. The most common cause of death was cardiovascular (49 percent).

The other common causes of death included:

- Hematological (17 percent)
- Respiratory (11 percent)
- Multiple organ system failure (7 percent)

Some 73.9 percent of the deaths (240) were deemed to be secondary to the injection. Three or more organ systems were involved in 21 cases.

The average time between the injection and death was 14.3 days.

Why wasn’t the “vaccine” pulled at that point as being too dangerous? In the past, a vaccine — especially if it was a new design — was withdrawn even after a few deaths were reported.

Why did the Centers for Disease Control and Prevention (CDC) do everything in its power to

prevent any autopsies from being performed on the deceased? The pathologists were literally screaming to do them.

Autopsies are the best way to discern the various aspects of a new disease or infection.

The refusal to perform autopsies was not caused by a fear that the pathologists would get infected, as none were shown to be linked to autopsying these cases.

In my opinion, there were two reasons for the

CDC’s decision. First, with the actual infection, they didn’t want proof that most of the deaths were caused by the CDC protocol all hospitals were told to follow — not the virus itself. Second, they didn’t want anyone having proof that many died as a result of neglect by the hospitals.

With the vaccines the motivation was different. They didn’t want proof that these “vaccines” were killing people, though that is exactly what the autopsies showed.

Now we have proof, and we have proof that the authorities and the mainstream media hid the truth about

virtually every aspect of this sordid episode.

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**‘Studies have shown that by the third injection with a COVID vaccine, a person’s immune system is virtually destroyed.’**

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## COQ10 Improves Heart Function

Coenzyme Q10 is a naturally occurring substance found in every cell in the body. Without it, we would all die. Objective studies of cardiac output, stroke volume, ejection fraction, and cardiac index showed improvement with CoQ10 treatment.

Most studies have focused on patients with mild to moderate congestive heart failure, but one found that giving 100 mg of CoQ10 a day to advanced heart failure patients improved symptoms in 82 percent of the patients.

Another finding was equally impressive: Two years after CoQ10 therapy, the survival rate was 62 percent — compared to 25 percent for patients receiving conventional medical treatment.

There is no question that using higher doses — such as 350 mg to 600 mg three times a day — would produce even better results. The best thing about CoQ10 is that there are no side effects; it is completely safe in any amount. ■

soaked in arsenic to protect the wood from insects. Unfortunately, the lumber is often still wet when the arsenic is applied, and workers handling it can become seriously contaminated.

Arsenic is a serious poison that can cause cancer. Safer lumber is soaked in boric acid (borate) instead of arsenic.

The same can be said for termite protection. If the soil making up the foundation is mixed with boric acid, it will kill the termites and protect the house.

Eating organically grown food has been shown to dramatically lower these pesticide residues in children. All vegetable and fruits should be thoroughly washed with a vegetable wash before consuming.

### Curing *H. Pylori* With Natural Compounds

Infection with *Helicobacter pylori* bacteria, which is common around the world, is a common cause for both malignancy of the stomach and ulcers of the duodenum.

It is also considered to be the most common association with gastric lymphoma and adenocarcinoma of the stomach, a fatal disease.

In developing countries, it has been estimated that most children are infected with *H. pylori* by the age of 10. The rate varies in developed countries, but it has been estimated to affect 30 percent of the U.S. population.

The relationship between *H. pylori* and several diseases — including encephalopathy and heart disease — remains controversial. Some people feel that the strain of *H. pylori* is important. Others think the age of infection is what matters.

Most people are infected before age 10, and carry the organism without any effects.

The infection has been shown to be associated with gastric and duodenal ulcers, as well as adenocarcinomas and lymphomas of the stomach. There is a weaker association with:

- Heart disease
- Atherosclerosis
- Diarrhea
- Encephalopathy

Inflammation caused by *H. pylori* accounts for most of its symptoms, especially cases of cancer.

Treatment by a gastroenterologist generally involves prescription of several antibiotics and repeated tests to see if the infection has been eliminated. It can be quite difficult to get rid of an *H. pylori* infection.

In addition to the major problems caused by *H. pylori*, the infection can also lead to iron-deficiency and anemia. That's because the bacteria cause a slow gastric bleeding and utilize iron from the diet and blood.

In addition, *H. pylori* bacteria are encased in a biofilm that protects it against many commonly prescribed antibiotics. Some flavonoids, such as nano-bacopa, work to destroy this biofilm.

Other plant extracts shown to be effective against *H. pylori* include:

- Baicalein
- Nano-Triphala (from One Planet Nutrition)
- Liposomal apigenin
- Nano-berberine
- Liposomal luteolin

Oregano oil also kills the organism and can be mixed with the other plant extracts. It is taken as two capsules with meals.

Meanwhile, nano-curcumin has been found to exercise a twofold effect on *H. pylori* infections, reducing the stomach inflammation caused by the infection, and directly inhibiting the bacteria.

In addition, butyrate promotes healing of the stomach and duodenum.

### Update on the COVID 'Vaccines'

Studies have shown that by the third injection with a COVID vaccine, a person's immune system is virtually destroyed. This occurs because a factor called IgG4 is drastically increased by these injections, and IgG4 suppresses immunity.

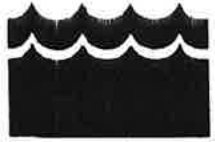
This explains why so many people who have been "vaccinated" have suffered from multiple bouts with COVID-19 and other infections, including bacterial pneumonia.

It also explains, in part, the emergence of what are called "turbo" cancers — the appearance of fatal, stage IV cancers within weeks or even days of injection. Pathologists all over the world have stated that they've never seen cancers grow this fast (hence the turbo label).

In addition, people who have had their cancer under



**SPECIAL  
REPORT:  
WATER**



# Water Everywhere But Not a Lot That's Recycled

*Lawyers examining draft policy target liability, standards and accountability*

**BY LINDA RAPATTONI**  
Daily Journal Staff Writer

SACRAMENTO — Imagine flipping a switch to spray your lawn with water that you had flushed down the toilet a few months earlier, or filling a drinking glass with water with which you had showered.

Municipal water districts and sellers of recycled water would like to see this kind of thing happen in California, where a growing population and global warming are straining dwindling water supplies.

As state lawmakers began tackling water storage and supply problems in a special session of the Legislature last week, lawyers were examining a draft recycled-water policy at a State Water Resources Control Board workshop.

Attorneys for recycled water suppliers say their chief concern is liability. Lawyers for environmental groups, on the other hand, want to see accountability.

Under current law as interpreted by a couple of court cases, as long as water purveyors comply with the most recent water quality standards, they cannot be held liable for damages for water later found to be unhealthful in *Hartwell v. Superior Court* and *In re Groundwater Cases*.

But under the draft recycled-water policy, providers would face a much tougher standard, strict liability. That kind of liability does not require a showing of negligence or intent to harm.

"In my view, and it is shared by many lawyers who work for water agencies, that is not the law right now, and it is not good policy to have that sort of scheme," said David Aladjem, who specializes in water issues at **Downey Brand** in Sacramento and represents the Association of California Water Agencies.

"If a water district complies with the Department of Public Health standards and they are still liable, that's an expansion of existing liability," Aladjem said. "And it's a liability where you have no idea what will happen in the future. If you were a water district, would you use recycled water if you had any choice? Your answer is no. It's not going to encourage the use of recycled water."

On the other side, Linda Sheehan, a lawyer and executive director of California Coastkeeper Alliance, a nonprofit environmental group advocating for clean water, said the state should be ensuring recycled water doesn't pose health problems from now.

"Folks generating recycled water want to be able to use it and are frustrated because they want to use it freely," Sheehan said. "We have to make sure it's clean enough for all uses. Just because a human can drink it doesn't mean a fish can swim in it. We don't want to create a problem like MTBE, where we didn't think these things through ahead of time."

MTBE, or methyl-tertiary butyl ether, was added to gasoline in the 1990s to help it burn cleaner and lessen air pollution. Later, it showed up in groundwater.

Sheehan is critical of the draft of the recycling water policy. It focuses only on the drinking uses of recycled water, she said.

One thing water purveyors and most environmentalists agree on: California should recycle more of its water.

"Israel recycles 13 percent of its water, while we recycle just 2 percent," said Jeff Kightlinger, general manager of the Southern California Metropolitan Water District.

The state's Water Code not only recognizes recycled water as a valuable resource but also says



*"Just because a human can drink it doesn't mean a fish can swim in it," said Linda Sheehan, a lawyer and the executive director of California Coastkeeper Alliance, standing in front of Lake Merritt in Oakland, which is affected by East Bay Municipal Utility District's water recycling program.*

failing to use it could be unconstitutional.

Employing potable domestic water for purposes such as irrigating landscaping is an unreasonable use of water prohibited by the Constitution if recycled water is available as an alternative, according to Water Code Section 13550. The water would have to be offered at a reasonable cost and could not be harmful to plants or animals or degrade existing water quality, however.

The state's water agencies recycle 500,000 acre-feet of wastewater annually — almost three times what it did in 1970, according to the California Water Plan, an information and data bank for planning water uses. One acre-foot of water equals 326,000 gallons, enough to provide for two families in a year, according to the Association of California Water Agencies.

The state's goal is to recycle 1 million acre-feet by 2010.

It hopes to expand recycling so that water which is used for non-potable purposes like flushing a toilet or showering can go through three levels of treatment, then be pumped back into the ground for natural filtering.

By establishing statewide guidelines, the state water board hopes to promote more water recycling. Nine regional boards each have their own standards for water sources. Some say that makes it difficult to build new water recycling projects.

"We partnered up with the Upper San Gabriel Valley Water District to take some of the water from Los Angeles County and clean it up," Kightlinger said. "The project took 10 years to get through the process, and it's just watering a couple of parks. It's a very frustrating thing."

He said his agency strongly supports the water board's establishment of "good sound guidelines" encouraging the use of recycled water and helping to avoid jurisdictional battles.

At the same time, California and Texas are the only states in the nation without comprehensive groundwater regulations, according to Environment Now, a nonprofit environmental group.

Sheehan said that as long as new projects don't degrade current groundwater supplies, she's happy with avoiding jurisdictional battles.

Some water system officials believe "those boards with stringent requirements are being too stringent, and they would prefer a statewide consistent policy, meaning not as stringent," she said.

Sheehan thinks the draft recycled-water policy would tie local boards' hands.

"We need a policy that's thoughtful," she said. "We've degraded our existing water quality a lot already."

California Coastkeeper Alliance wants recycled water users to get a federal permit assuring compliance with the Clean Water Act in case recycled water unintentionally runs off into surface water. Recycled water advocates disagree.

"A federal permit kind of stops customers," said Roberta L. Larson, a Sacramento partner with **Somach, Simmons & Dunn**, who represents the Water Reuse Association. "They think, oh, I'm not sure if this really is good water. You're focusing on a nonproblem there for minor amounts of runoff."

The association is a nonprofit group that promotes water recycling, and its members include municipalities, water districts and agencies, federal and state agencies and various individuals.

Of even bigger concern, Larson said, is that a permit violation would open a violator to private-party lawsuits, unlike state law that regulates groundwater uses.

Environmental groups and recycled-water purveyors also disagree on the level of monitoring required to prevent degradation of groundwater. Recycled water has higher salinity levels than potable water.

Environment Now has tried to act as mediator in the dispute, said Josh Basofin, the group's freshwater program manager.

Mark Gold, president of Heal the Bay, said environmentalists were disappointed that the draft policy does not deal with the degradation issue.

"To be largely silent on it is not productive," said Gold, whose group focuses on clean water in Southern California and Santa Monica Bay.

The organization wants to see strict standards to trigger analyses of whether recycled water was degrading local groundwater supplies.

The Water Reuse Association believes that kind of analysis is not needed as long as recycled water users apply the water at proper rates set for the geology, Larson said.

Many of the disputes involve how to look at recycled water — whether it is an alternative supply or a waste product.

"Recycled water is in a no man's land as to what it is exactly," Larson said.

"We're just getting started with water recycling issues," she said. "There's not a lot of case law or litigation to draw from that. But, the more common recycled water becomes, the more there will be disputes." ■

bring with it future building permit stoppages.

Despite this new urgency, the state Senate on Oct. 9 failed to negotiate a unified ballot strategy to plug holes in the delta's delivery system after the debate fell apart along traditional party lines. The failure for now leaves the state without a plan to quickly react to future shortages, in the face of potentially massive threats to the water supply.

A further threat to water security in the state could include a future Wanger ruling on salmon and steelhead that could lead to further restrictions on the amount of water that can be pumped from the delta, said Rex Hime, president and chief executive officer of the **California Business Properties Association**.

Other threats, such as a sudden delta earthquake or the more gradual effects of climate change, also concern Hime.

"I'm not even talking about addressing future growth — we need to maintain our quality of life," he said. "We need new water for environmental purposes, to fix the flows in our streams. We need to mitigate for global warming."

**Dam Investment**

Preserving that way of life for the 25 million Californians who drink delta water means putting a measure on the ballot to fund infrastructure improvements — and that's where the dam broke during Oct. 9 legislative discussions.

Republicans insist the voters need to be presented with a proposal that includes billions of dollars in funding for new surface storage reservoirs, and the state should pay for the water it releases to meet environmental mandates.

"You cannot solve this problem with just conservation," said Sen. Dave Cox, R-Fair Oaks. "Sooner or later this Legislature has got to take the lead."

Meanwhile, Democrats back a proposal that focuses more on conservation and water recycling, and contains no specific funding for dams. They balked at the high level of state spending for dams that would benefit fewer water users, contending private or local government capital and user fees should be used to fund water projects.

"Who benefits from Sites, or Temperance Flat?" asked Perata, naming dams and reservoirs proposed to be built under the government's plan. "Whoever's going to benefit ought to step up and say, 'We'll give you \$2 an acre-foot.'"

Lawmakers needed to agree on a proposal by Oct. 16 to have that proposal appear on the February 2008 ballot. Instead, they have begun work to get two separate initiatives on the ballot, a prospect that worries Hime, who said he wants to see new funding for water storage.

"I can absolutely guarantee you, if there are two water initiatives on the ballot, it will go down to defeat," he said.

Lawmakers can still get a compromise measure on the February ballot, possibly as a supplement to the other measures. Perata said he wants a measure on the ballot to prove to the judge that California is trying to address its water woes. If the legislative attempt fails, the privately supported ballot measures likely would go on the ballot in November 2008, well after this water year comes to a close in September.

Last year's water year closed Oct. 1, ranking as the state's 18th-driest year on record. Department of Water Resources scientists who track precipitation and runoff said water storage in 2006-07 was at 84 percent of normal as of August, and noted that precipitation was at 62 percent of normal.

A dry year could bring a flood of new, potentially harmful legislation, according to Debra Carlton, senior vice president of legislative affairs at the **California Apartment Association**. A water shortage could set the stage for introduction of new development restrictions in California.

"I think we'll probably see more bills limiting water and growth in California," she said.

developers can't construct large projects unless there's sufficient water available. Past measures sought to apply those restrictions to smaller projects or other types of development than those covered by the law, she said.

One bill pending in the Legislature, Senate Bill 821, by Sen. Sheila Kuehl, D-Santa Monica, originally applied the water provisions to smaller subdivisions, but was amended to require state researchers to study whether to apply the measure to smaller subdivisions. Debate over the matter could restart when the California Legislature reconvenes in January 2008.

Kuehl also wrote the 2001 law, Senate Bill 221, which requires assessment of water supply before the construction of residential projects larger than 500 dwelling units.

SB221 in turn could provide new fodder for entitlement-process challenges to these large-scale developments during the current water shortage, according to Ray E. McDevitt, partner in the public agency section at **Hanson, Bridgett, Marcus, Vlahos & Rudy LLP**. Under the terms of SB221, local jurisdictions assess whether they have sufficient water to meet residential needs.

Project opponents may begin challenging the adequacy of these water assessments, according to McDevitt, who has helped agencies craft their assessments. The water shortage could prompt challenges to new projects, in addition to the usual California Environmental Quality Act challenges to the adequacy of a projects' environmental-impact assessment. The assessments also could lead to challenges from developers, the attorney predicted, as more and more communities tell the developers they don't have enough water.

"There's no doubt there will be friction," he said.

But courts traditionally have sided with the local governments in these types of cases — just as they historically have protected jurisdictions' right to institute building moratoria in the event of a water shortage, he said.

"Courts are more likely to side with the analysis if it was done right," he said.

**Climate Change Water Bill Return Likely**

As McDevitt readies his defense, Assemblywoman Lois Wolk, D-Davis, plans to reintroduce legislation requiring consideration of climate change in all water supply and water quality planning. Wolk also expects to propose streamlining delta oversight, an idea that could lessen regulatory red tape in the Sacramento and San Joaquin areas.

"I want to take a second look at governance in the delta," she said. "There are 220 agencies with some oversight there."

However, Wolk said she was not taking up an effort by environmentalists to mandate CEQA consideration of a project's emissions on water quality. Her measure only is supposed to set mandates for water agencies, not for projects.

The CEQA idea was suggested by Planning and Conservation League activists during a September joint State Water Resources Control Board and DWR meeting on climate change. Proposed in a Sept. 13 letter by Matthew Vander Sluis, PCL's climate change program manager, the idea could add a new facet to current CEQA discussions.

"[Water boards] should ensure that the environmental review includes alternatives analysis of various pollution prevention measures and compares the greenhouse gas emissions associated with each alternative," the activist wrote.

As state-level debates continue to unfold, advocates continue to seek new federal investment.

"We must renew federal investment in our nation's vital water and wastewater infrastructure, or risk reversing the public health, environmental and economic gains of the past three decades," Patrick J. Natale, executive director of the **American Society of Civil Engineers**, told Congress Sept. 18.

— E-mail Colleen\_Flannery@DailyJournal.com

**Legal Clouds Ahead for Water Users**

*Legislation, litigation pose development threats*

But water-sensitive building designs alone can't cure the delta, which provides water to about 25 million Californians. Visualizing themselves as architects of a potential solution, lawmakers and lobbyists — including representatives of the commercial building and multifamily sectors — are scrambling to fund billions in needed improvements.

The state's water future looks especially bleak after a September order from U.S. District court Judge Oliver Wanger cut back delta pumping, which the judge said endangers the delta smelt. The order has prompted several water agencies to warn of potential customer cutbacks.

"There could be, beginning as early as 2008, water rationing going on," said Senate President pro Tempore Don Perata, D-Oakland, who warned that rationing could



AP PHOTO/CHRIS PETERSON/REUTERS

**BY COLLEEN FLANNERY**  
CNEJ Staff Writer

**W**ith water rationing a possibility due to recent court rulings restricting delta conveyance, the coming year brings a wash of worry for delta-dependent water users and developers of large-scale projects.

It also brings new uncertainties on the legislative front, with a key 2008 vote looming, and a coming tide of potential legislation and litigation that could shape the state's water future for decades, lobbyists, lawmakers and lawyers say.

For many in the industry, early worries surfaced long ago in the form of client demands that building designs maximize water efficiency, according to Jeffrey Heller, president of **Heller-Manus Architects** in San Francisco. "There's real fear out there," he said.





# Wastewater may hold COVID-19 clues

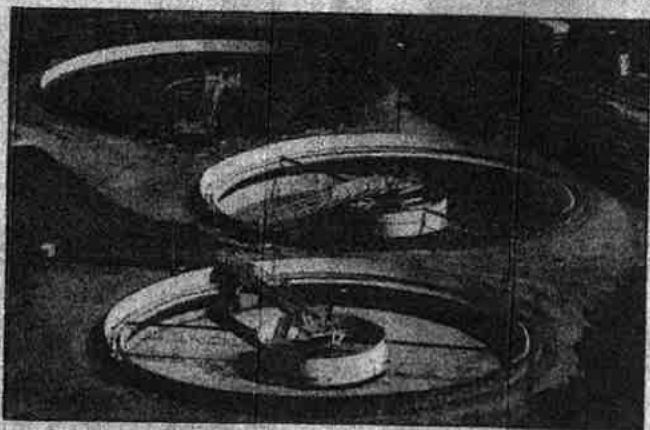
Vancouver part of pilot program that could supplement existing data on virus

By **CALLEY HAIR**  
Columbian staff writer

The prevalence of COVID-19 in Vancouver is now being tracked through a pilot program in which samples of wastewater are collected and tested for signs of the novel coronavirus.

Staff at the Marine Park and Westside wastewater treatment facilities are collecting sewage samples weekly. The samples are then sent to a laboratory at Arizona State University, where researchers test the city's influent for fragments of the virus's genetic information.

The conclusions that can be drawn from this information have their limitations, according to a statement released by the city earlier this week. Wastewater-based epidemiology is still a relatively new science, and traces of the virus in the city's sewer systems provide only a big-picture



The Columbian files

The city of Vancouver Westside Wastewater Treatment Plant, seen in July, is one of two local wastewater treatment facilities collecting samples of wastewater to send for testing for signs of the coronavirus.

WASTEWATER, Page A2

## COVID-19 in the Northwest

Number of confirmed cases and deaths as of Wednesday afternoon, with the change from the previous report:

|              | Cases  | Deaths |
|--------------|--------|--------|
| Clark County | 395    | 24     |
| Change       | 2      | 0      |
| Washington   | 17,512 | 975    |
| Change       | 182    | 13     |
| Oregon       | 3,416  | 134    |
| Change       | 58     | 4      |

SOURCES: State and local health departments, National Institutes of Health photo

## Wastewater

From Page A1

snapshot of the region.

But participation in the program could help the city determine the concentration of the virus in the community, including among people who are infected but do not present symptoms. The data will be used to supplement the metrics already tracked by Clark County Public Health.

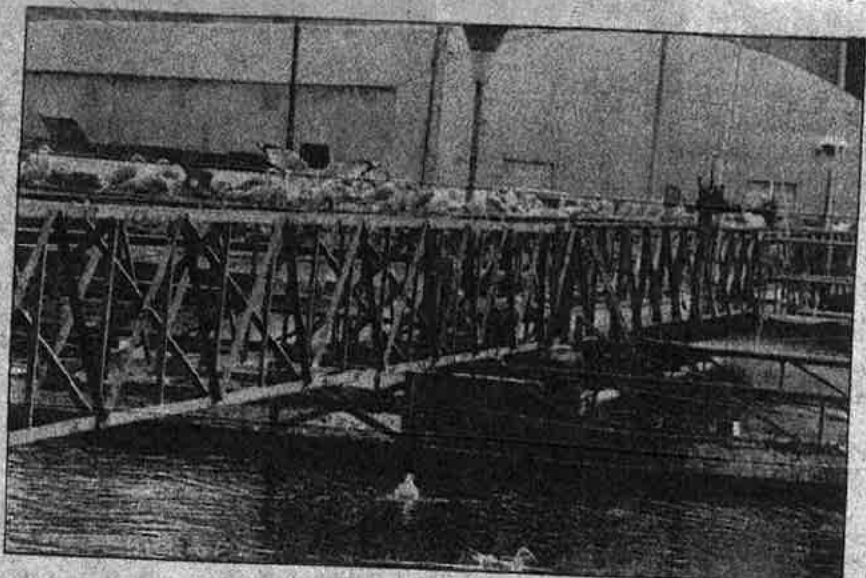
Vancouver is one of about a dozen cities across the country participating in the program through its wastewater facilities operator, Jacobs.

"It's very straightforward and simple," Frank Dick, the city's wastewater engineering supervisor, wrote in an email to The Columbian.

"Jacobs staff at city facilities, in the course of collecting daily influent samples, once a week will fill an additional half-liter sample container, label and seal it, and send it off to the ASU laboratory via qualified carriers," Dick wrote. "The sample is a community-wide representation."

According to an Arizona State University study published in *Science of the Total Environment*, wastewater-based epidemiology mines sewage samples for vital clues about human health. That applies to the coronavirus but also to other ailments that leave traces in human waste — drug use, diabetes and obesity, among others.

The Arizona State University lab uses a process called polymerase chain reaction testing in order to identify fragments of virus-associated RNA, the ribonucleic acid that carries the virus's genetic information.



The Columbian files

Seagulls congregate on a structure at the Westside Water Reclamation Facility, just off west Mill Plain Boulevard in Vancouver.

"Our results show that exclusive reliance on testing of individuals is too slow, cost-prohibitive and in most places, impractical, given our current testing capacity," Rolf Halden, one of two researchers who published the study, told *Science Daily*. "However, when preceded by population-wide screening of wastewater, the task becomes less daunting and more manageable."

In Vancouver, the pilot program will continue for at least a month, possibly longer, according to the city's media release. The gathered data will be shared with local public health officials.

Brent Bremmer, the director of product communications at Jacobs, said the company is still figuring out how and when that data will be re-

leased. "The format and time frame for data sharing is not yet established as sample collection and data gathering has just begun at most sites involved in the study," Bremmer said.

Jacobs operates nearly 100 wastewater facilities across the country, including the two in Vancouver. The city is one of 11 municipalities participating in the pilot program, though more are expected to join in.

Vancouver's sewer service area encompasses all but a small north-central sliver of the city. It also includes a few portions of the county's regional wastewater district along the city's northern border.

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Stew Peters: Dr. Bryan Andis  
Watch the Water



# EPA plan to study pesticides' effect on kids spurs backlash within agency

Poor families may join just to get the perks, staff fears

By Juliet Eilperin  
WASHINGTON POST

WASHINGTON — An Environmental Protection Agency proposal to study young children's exposure to pesticides has sparked a flurry of internal agency protests, with several career officials questioning whether the survey will harm vulnerable infants and toddlers.

The EPA announced this month that it was beginning a two-year investigation, partially funded by the American Chemical Council, of how 60 children in Duval County, Fla., absorb pesticides and other household chemicals. The chemical industry funding initially prompted some environmentalists to ques-

tion whether the study would be biased, and some rank-and-file agency scientists are now questioning whether the plan will exploit financially strapped families.

In exchange for participating for two years in the Children's Environmental Exposure Research Study, which involves infants and children up to age 3, the EPA will give each family using pesticides in their home \$970, some children's clothing and a camcorder that parents can keep.

EPA officials in states such as Georgia and Colorado sent e-mail messages to each other last week suggesting the study lacked safeguards to ensure that low-income families would not be swayed into exposing their children to hazardous chemicals in exchange for money and high-tech gadgetry. Pesticide exposure has been linked to neurological problems, lung damage and birth

defects. Suzanne Wuerthele, the EPA's regional toxicologist in Denver, wrote to her colleagues on Wednesday that after reviewing the project's design, she feared poor families would not understand the dangers associated with pesticide exposure.

"It is important that EPA behaves ethically, consistently, and in a way that engenders public health. Unless these issues are resolved, it is likely that all three goals will be compromised, and the agency's reputation will suffer," she wrote in an e-mail obtained by the Washington Post. "EPA researchers will not tell participants that using pesticides always entails some risk, and not using pesticides will reduce that risk to zero."

Troy Pierce, a life scientist in the EPA's Atlanta-based pesticides section, wrote in a separate e-mail: "This does sound like it goes against everything we rec-

ommend at EPA concerning use of (pesticides) related to children. Paying families in Florida to have their homes routinely treated with pesticides is very sad when we at EPA know that (pesticide management) should always be used to protect children."

Linda Sheldon, acting administrator for the human exposure and atmospheric sciences division of the EPA's Office of Research and Development, said the agency would educate families participating in the study and inform them if their children's urine showed risky levels of pesticides. She said it was crucial for the agency to study small children, because so little is known about how their bodies absorb harmful chemicals.

"We are developing the scientific building blocks that will allow us to protect children," Sheldon said, adding that the study design was reviewed by five in-

dependent panels of academics, officials of the Centers for Disease Control and Prevention, and representatives of the Duval County Health Department.

Families can remain in the study, even if they stop using pesticides, Sheldon said, as long as they were using them before the experiment started. It was unlikely that any family would volunteer for the study out of financial need, she added, because researchers will require parents to invest time in monitoring their children's activities and diet.

"Nobody can go into this study just for that amount of money," Sheldon said.

R. Alta Charo, a professor of bioethics at the University of Wisconsin at Madison's law and medical schools who co-wrote a National Academy of Sciences report last year on the use of pesticides for research, said EPA officials were struggling with how to balance the need to protect the

individual child's interests against the goal of pursuing a broader scientific agenda. While she said the agency's approach was reasonable, Charo said it does raise ethical questions.

"Where is the line between enticement and a godfather offer" that impoverished families would find hard to refuse? Charo said. "That is really troubling. We make these decisions over and over in public policy. This is one of those moments."

Several EPA officials, all of whom asked not to be identified for fear of retaliation, also questioned why the agency removed the study design and its recruitment flyer from the EPA's Web site once some scientists started to complain about the project. Sheldon said the agency is re-writing how it portrays the research.

"We removed it so we could modify it, so it would make more sense," she said.

# How to Protect Yourself Against Cancer With Food

The Weston A. Price Foundation

Once a rare disease, cancer is now widespread, affecting as much as one-third of the population. The rise in cancer in the West has paralleled the rise in factory farming and the use of processed foods containing vegetable oils and additives.

Orthodox methods for treating cancer (radiation and chemotherapy) do not prolong life. The best approach to cancer is prevention.

Traditional diets, containing animal and plant foods farmed by non-toxic methods, are rich in factors that protect against cancer. Many of these protective factors are in the animal fats.

Vegetarianism does not protect against cancer. In fact, vegetarians are particularly prone to cancers of the nervous system and reproductive organs.



**RANGE-FED CATTLE:** A good source of conjugated linoleic acid, a cancer-preventing fat. LOUISE MCCOY/THE EPOCH TIMES

## CANCER PROTECTION

These nutrients in whole foods are known to protect against cancer:

**Vitamin A.** Strengthens the immune system. Essential for mineral metabolism and endocrine function. Helps detoxify. True vitamin A is found only in animal foods such as cod liver oil; fish and shellfish; and liver, butter, and egg yolks from pasture-fed animals. Traditional diets contained 10 times more vitamin A than the typical modern American diet.

**Vitamin C.** An important antioxidant that prevents damage by free radicals. Found in many fruits and vegetables but also in certain organ meats valued by primitive peoples.

**Vitamin B6.** Deficiencies are associated with cancer. Contributes to the function of over 100 enzymes. Most available from animal foods.

**Vitamin B12.** Deficiencies are associated with cancer. Found only in animal foods.

**Vitamin B17.** Protects against cancer. Found in a variety of organically grown grains, legumes, nuts, and berries.

**Vitamin D.** Required for mineral absorption. Strongly protective against breast and colon cancer. Found only in animal foods such as cod liver oil, lard, shellfish, butterfat and organ meats from grass-fed animals, and egg yolks from grass-fed animals. Traditional diets contained 10 times more vitamin D than the typical modern American diet.

**Vitamin E.** Works as an antioxidant at the cellular level. Found in unprocessed oils as well as in animal fats like butter and egg yolks.

**Conjugated Linoleic Acid (CLA).** Strongly protective against breast

cancer. Found in the butterfat and meat fat of grass-fed ruminant animals.

**Cholesterol.** A potent antioxidant that protects against free radicals in cell membranes. Found only in animal foods.

**Minerals.** The body needs generous amounts of a wide variety of minerals to protect itself against cancer. Minerals like zinc, magnesium, and selenium are vital components of enzymes that help the body fight carcinogens. Minerals are more easily absorbed from animal foods.

**Lactic Acid and Friendly Bacteria.** Contribute to the health of the digestive tract. Found in old-fashioned lacto-fermented foods.

**Saturated Fats.** Strengthen the immune system. Needed for proper use of the essential fatty acids. The lungs cannot function without saturated fats. Found mostly in animal foods.

**Long-Chain Fatty Acids.** Arachidonic acid (AA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) help fight cancer on the cellular level. They are found mostly in animal foods such as butter, organ meats, cod liver oil, and seafood.

**Co-enzyme Q10.** Highly protective against cancer. Found only in animal foods.

## CARCINOGENIC

These compounds in processed foods can cause cancer:

**Trans Fatty Acids.** Imitation fats in shortenings, margarines, and most commercial baked goods and snack foods. Strongly associ-

ated with cancer of the lungs and reproductive organs.

**Rancid fats.** Industrial processing creates rancidity (free radicals) in commercial vegetable oils.

**Omega-6 Fatty Acids.** Although needed in small amounts, an excess can contribute to cancer. Dangerously high levels of omega-6 fatty acids are due to the overuse of vegetable oils in modern diets.

**MSG.** Associated with brain cancer. Found in almost all processed foods, even when "MSG" does not appear on the label. Flavorings, spice mixes, and hydrolyzed protein contain MSG.

**Aspartame.** Imitation sweetener in diet foods and beverages. Associated with brain cancer.

**Pesticides.** Associated with many types of cancer. Found in most commercial vegetable oils, fruit juices, vegetables, and fruits.

**Hormones.** Found in animals raised in confinement on soy and grains. Plant-based hormones are plentiful in soy foods.

**Artificial Flavorings and Colors.** Associated with various types of cancers, especially when consumed in large amounts in a diet of junk food.

**Refined Carbohydrates.** Sugar, high fructose corn syrup, and white flour are devoid of nutrients. The body uses up nutrients from other foods to process refined carbohydrates. Tumor growth is associated with sugar consumption.

Source: [westonaprice.org/modern-diseases/cancer/578-how-to-protect-yourself-against-cancer-with-food.html](http://westonaprice.org/modern-diseases/cancer/578-how-to-protect-yourself-against-cancer-with-food.html)

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By Thomas H. Maugh II Times Staff Writer

Texas researchers have found a possible link between autism and mercury in the air and water.



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Studying individual school districts in Texas, the epidemiologists found that those districts with the highest levels of mercury in the environment also had the highest rates of special education students and autism diagnoses.

The study does not prove that mercury causes autism, cautioned the lead author, Raymond F. Palmer of the University of Texas Health Science Center in San Antonio, but it provides a "provocative" clue that should be further investigated.

"Mercury is a known neurotoxin," said Dr. Isaac Pessah of UC Davis' MIND Institute, who was not involved in the study. "It's rather intriguing that the correlation is so positive," meaning that there was a strong, direct relationship between mercury and autism levels. "It makes one worry."

California has the highest environmental burden of mercury of any state in the country, and it also has what appears to be the highest rate of autism as well — although some critics attribute this perceived high rate to enhanced surveillance associated with the state's special education program.

Autism is a severe developmental disorder in which children seem isolated from the world around them. There is a broad spectrum of symptoms, but the disorder is marked by poor language skills and an inability to handle social relations.

The incidence of autism has grown dramatically over the last two decades, from about one in every 2,000 children to as high as one in every 166. Researchers have been hard-pressed to explain the increase, but many believe mercury to be the culprit.

The purported link between autism and mercury has been a subject of

intense debate. In the past it has centered primarily on the mercury-containing preservative thimerosal, which was once widely used in vaccines.

Many parents have argued that thimerosal causes autism because their children seemed to develop the neurological disorder shortly after they received childhood vaccinations.

That link has been largely discredited, and researchers are beginning to look at the potential effects of the metal from other sources.

Mercury is routinely released from power plants burning fossil fuels, and it spreads widely in air and water. Much of the fish consumed in some regions is contaminated with mercury. In California, gold mining was a big mercury source, and there are many mercury hot spots near mines and downstream, such as in Clear Lake.

In the new study, Palmer and his colleagues used Environmental Protection Agency ([news - web sites](#)) data about the release of mercury in 2001 in Texas' 254 counties and correlated that with the number of special education cases and autism diagnoses in the 1,200 school districts. Texas is fourth in the amount of mercury released into the environment annually, trailing California, Oregon and West Virginia.

The study, which will appear in the journal *Health & Place*, found that for every 1,000 pounds of mercury released into the environment, there was a 43% increase in special education services and a 61% increase in the autism rate.

The exception to the rule was Brewster County, which had a high autism rate but did not report significant mercury levels to the EPA. When Palmer investigated, however, he found that the county had been home to one of the largest mercury mines in the nation.

"Perhaps [the mercury] just stays in the environment forever. We don't know," Palmer said.

More work will be required to determine whether mercury is the agent that causes the disorder. Palmer is expanding his studies to look for historical correlations — attempting to determine, for example, if increases in the rate of autism over time can be associated with increases in mercury release.

Dr. Irva Hertz-Picciatto and her colleagues at the MIND Institute, meanwhile, have begun a potentially more definitive study in which they are measuring the levels of mercury and other toxic metals, such as cadmium and lead, in children with autism to see if they are higher than in healthy children. Results will be available in a couple of years.

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