



# Thinking Zinc — *Beesh Doot'izh Bantsáhákees*

*A study to assess how taking the recommended daily amount of zinc may help repair damage from harmful metals among Navajo Nation residents*



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Funding: NIH/NIEHS P42 ES025589 (UNM METALS)

This material was developed in part under cited research awards to the University of New Mexico. It has not been formally reviewed by the funding agencies. The views expressed are solely those of the speakers and do not necessarily reflect those of the agencies. The funders do not endorse any products or commercial services mentioned in this presentation.

May 11, 2018; revised Aug. 10, 2018

# Funding, Disclosures, Disclaimer, Approvals



## Funding:

**UNM METALS Superfund Research Program** – NIH/NIEHS  
1P42ES025589-01A1

**UNM Comprehensive Cancer Center** P30 CA118100 UNM

**UNM Clinical Translational Science Center** UL1TR001449

## Faculty/Presenter Disclosure:

**Faculty:** David Begay, PhD

## Relationships with commercial interests:

- **Grants/Research Support:** All funding through federal agencies, including NIH, CDC, EPA
- **Speakers Bureau/Honoraria:** None
- **Consulting Fees:** None
- **Other:** Employee of State of New Mexico

**Zinc Study Research Team:** Laurie Hudson, PhD, PI; Debra MacKenzie; PhD; Esther Erdei, PhD, MPH; Chris Shuey, MPH; Paul Robinson, MCRP; Erica Dashner-Titus, PhD; Floyd Baldwin Jr.; Sarah Henio-Adeky; Wilfred Herrera, MPA

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## Approvals:

*Human research is monitored and approved by UNM HSC Human Research Protections Office (HRPO), the New Mexico Cancer Care Alliance and the Navajo Nation Human Research Review Board (NNHRRB) as required by federal, state and Tribal law. **Approval of the zinc supplementation study discussed in this presentation is pending by the UNM (HRPO#: 18- XXX) and NNHRRB.***

# Acknowledgements



## UNM PIs

Johnnye Lewis, Ph.D.  
Matt Campen, Ph.D.  
David Begay, Ph.D.  
Adrian Brearley, Ph.D.  
Scott Burchiel, Ph.D.  
Jose Cerrato, Ph.D.  
Eszter Erdei, Ph.D.  
Joseph Galewsky, Ph.D.  
Melissa Gonzales, Ph.D.  
Laurie Hudson, Ph.D.  
Ji-Hyun Lee, Ph.D.  
Jim Liu, Ph.D.  
Debra MacKenzie, Ph.D.

## SRIC

Chris Shuey, MPH  
Paul Robinson, MCRP  
Sarah Henio-Adeky  
Floyd Baldwin  
Wilfred Herrera

## IEI

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## Stanford University

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## External Advisory Board

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Bhramar Mukherjee, PhD

**Thank you to the communities  
who have contributed and supported this  
work!**

- Laguna Pueblo
- And the Navajo communities of
  - Red Water Pond Road
- Blue Gap-Tachee Chapter and Tachee Uranium Concerns Committee

**Our funders:**

- NIEHS
- UNM College of Pharmacy
- UNM Comprehensive Cancer Center

*Additional leveraged support for METALS:NIH/OD UG3 OD023344 (NBCS/ECHO) (Lewis/MacKenzie)  
CDC U01 TS000135 (NBCS) (Lewis/MacKenzie)  
NIEHS & NIMHD P50ES026102 (Native EH Equity) (Lewis/Gonzalez)  
USEPA 83615701 (Native EH Equity Center)  
R01 ES026673 (Campen)  
1R01ES021100 (ViCTER supp Hudson)  
IRACDA ASERT Training Award R01ES026673  
NM EPSCoR #IIA-1301346 & NSF CAREER 1652619 (Cerrato Corrales)*

Research reported here was supported by the National Institute of Environmental Health Sciences of the National Institutes of Health under Award Number **P42ES025589**. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.



## Zinc Bantsáhákees THINKING ZINC



Mending a broken strand

### Research volunteers needed

We are conducting research to understand if taking the daily recommended level of zinc protects our bodies from the effects of heavy metals in the environment.

#### To participate you are:

- 21-45 years of age
- Not dia 21-64 years
- Not allergic to zinc
- Not pregnant or nursing

#### You will:

- Have 4 study visits over 9 months
- Take a zinc supplement tablet
- Provide blood and urine samples
- Receive a gift card each visit

### INTERESTED?

For more information or to participate, send email to [info@src.org](mailto:info@src.org), call 877-545-6775, or visit [www.src.org/Zinc](http://www.src.org/Zinc)



## Thinking Zinc — *Beesh Doot'izh\* Bantsáhákees* [metal + blue (the one that is) + thinking about it]

- This study will be conducted in the Blue Gap-Tachee Chapter and Red Water Pond Road area of the Navajo Nation, 2018-2021
- Blue Gap-Tachee Chapter adopted resolution supporting its participation in the Zinc Study in October 2017
- Red Water Pond Road Community supported UNM METALS Center in 2014 and 2016, adopted a resolution of support in May 2018

*We are asking for community review and comment on these outreach and educational materials*

\*From “Code Talker” by Chester Nez and Judith Schiess Avila, 2011.



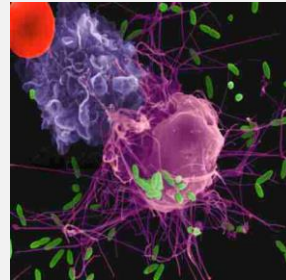
**We are concerned about exposure to some metals, especially uranium and arsenic, because they can damage your health. Here are some examples:**



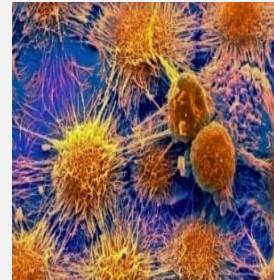
**Kidney disease**



**Cardiovascular  
Disease**



**Immune Disorders**



**Cancers**



**Skin Problems**




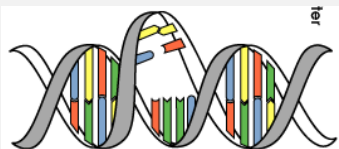
# Western Science Perspective

## How can metals affect DNA repair?




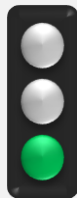
Normal repair function: "Go"

Zn  is necessary for the repair process



Repair function altered:  
"Stopped" or "Slowed"

As or U  disrupts the repair process by replacing zinc in key proteins



DNA repair function restored: "Go"

Zn  protects the key proteins from As or U  and restores the repair process





## Indigenous perspective

This painting shows how metals like uranium can damage DNA and cells, through the lens of a Native artist and biologist

Painting by Mallery Quetawki,  
Zuni Pueblo

## Indigenous perspective

This painting shows how DNA damage may be repaired, like re-stringing a broken bead strand. Zinc is necessary for this process.

Painting by Mallery Quetawki, Zuni Pueblo







# Why take zinc?



- In the right amounts, zinc — a metal that comes from Mother Earth — is an *essential nutrient* that promotes good health
- Studies have shown that many people do not get enough zinc in their diet to keep their body healthy, to achieve balance
- Taking a zinc pill is NOT a cure-all for all your ailments, and too much zinc may be harmful
- Taking a zinc supplement at the recommended daily allowance of 11 milligrams zinc per day is considered safe

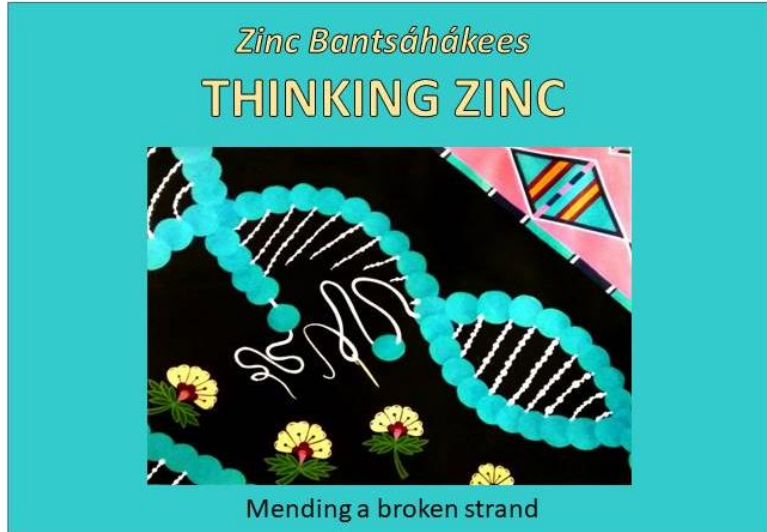
# Is zinc in our diets?

- Yes, but might not be in high enough amounts for everyone
- Some Navajo foods that have higher levels of zinc include:
  - Lamb
  - *Blue corn mush with juniper ash*
  - Pinon nuts
  - Chicken
  - Beef
  - Eggs





# Beesh Doot'izh Bantsáhákees Eligibility



## Research volunteers needed

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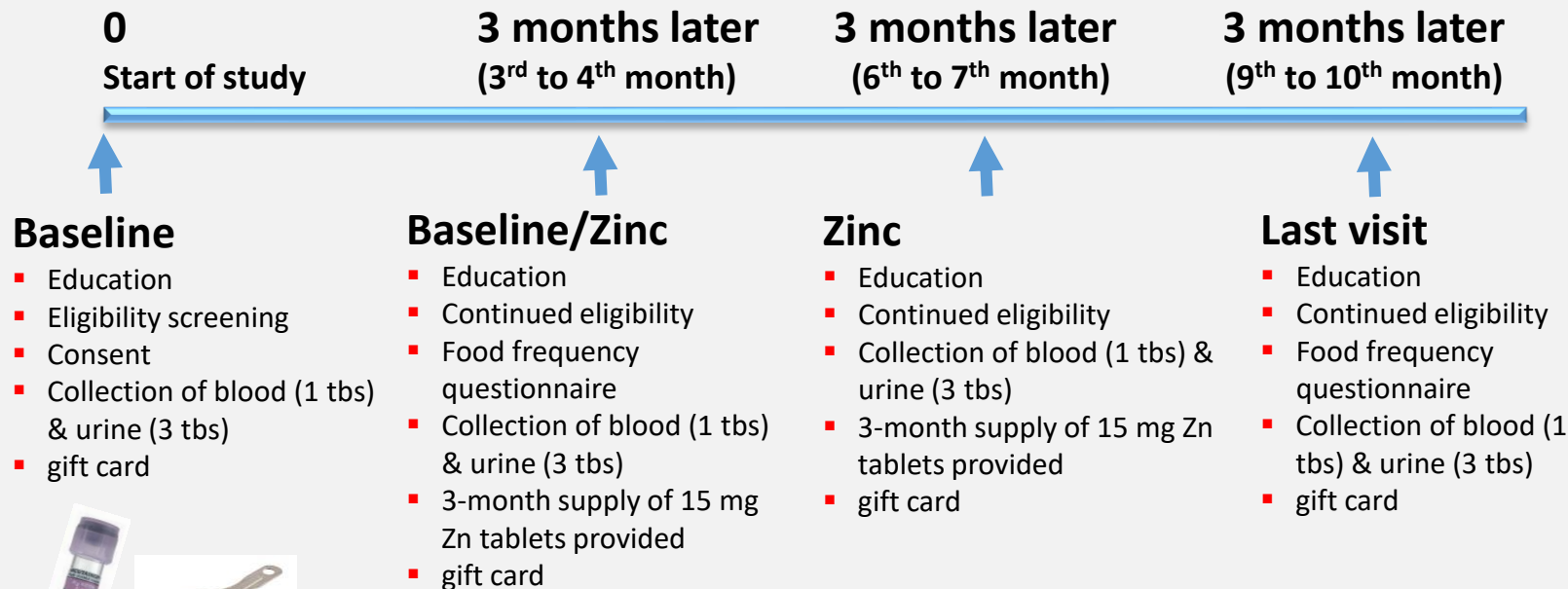
For more information or to participate, send email to [info@src.org](mailto:info@src.org), call 877-545-6775, or visit [www.src.org/Zinc](http://www.src.org/Zinc)



***We will begin outreach and education in Blue Gap-Tachee and Church Rock areas in Fall 2018***



# Thinking Zinc Study Timeline



1 tablespoon (tbs)

*Our staff will contact you during the study to remind you to keep taking your zinc tablets and to attend the next visit.*

# Ahéhee' – Thank You!

## Acknowledging Navajo Community Partners



**Blue Gap-Tachee Chapter, Tachee Uranium Concerns Committee** (Faith Baldwin, Sadie Bill, Christopher Nez, Helen Nez, Seraphina Nez, Aaron Yazzie)



**Red Water Pond Road Community Association** (Peterson Bell, Thompson and Rose Bell, Annie Benally, Grace Henio, Edith Hood, Tony Hood, Jacquelyn Bell-Jefferson, Teracita Keyanna, Larry J. King)



Floyd Baldwin, Jr., Sarah Henio-Adeky, Wilfred Herrera, Lynda Lasiloo, Teddy Nez, Sandy Ramone, Wm. Paul Robinson, Chris Shuey, Monique Tsosie, Maria Welch