

LIGHTNING DATA CENTER MINUTES

August 9, 2024

ST. ANTHONY HOSPITAL, LAKEWOOD, COLORADO

Monthly Quote: "I was trying to scream but was unable to scream." - Daniel Sharkey, as quoted by ABC News, July 18, 2024.

Members present: Clark, Crow, Yarnell, Stemple, Morse and Brewer. Meeting began at 11:45 AM and ended at 12:55 PM.

1. The LDC is accepting donations, either as cash or check. If you donate via check, please make your check payable to Steve Clark at 755 S. Clinton Street, #2A; Denver, CO 80247. He will cash the check and keep the cash holdings specifically for the LDC. When the LDC incurs expenses, Steve will pay for services rendered through his bank account using the cash from LDC's cash holdings. A log will be maintained detailing the inflow and outflow of monies. LDC currently has \$347.00 in cash.
2. Activity on the LDC website under the medical tab has been paused indefinitely as there are some issues that need to be addressed. The remainder of the website is still fully functional.
3. Carl Swanson found an article detailing a lightning strike to a construction truck in Security, Colorado. On Friday, July 19 2024, a construction truck on a job site with a worker inside was strike twice within 10 minutes. The lightning blew out some tires on the truck. The worker was "shaken" and "nervous" according to his mother. The worker said: "...it sounded like a bomb..." and then there was smoke. EMTs examined the worker and found him to be otherwise okay.
4. Two teenagers were hit by lightning while camping in a tent in their backyard in Country Squire Lakes, Indiana. One is an 18 year old male and the other is a female who is 9 months pregnant. Both were taken to a hospital and were listed in serious but stable condition. The baby was okay also. Thanks to Robert Gift to calling this to our attention.
5. Daniel Sharkey, a teenager in Altamonte Springs, Florida was hit by lightning on July 15, 2024 while doing yard work for a neighbor. He was running a weed eater by some trees and the next thing he knew, he was face down on the ground near the sidewalk. Neighbors quickly came to his aid. He knew he had been knocked unconscious and initially thought it might be heat stroke.
6. Barbara Brewer, the mother of Jacob who was struck by lightning while vacationing in Florida (LDC Minutes, December 2020), gave us a update on Jacob's condition and posed a few questions. Jacob continues his slow recovery. Nerves are starting to work again, albeit slowly. There still is a gap between the knee and the foot of one of his legs. Jacob is presently working with a coach in an effort to continue the strengthening of his muscles.

Her question was: “Is a high CPK level common with lightning strikes?” She said a CPK level of 200 was considered high and Jacob’s level was 19,000. Dr. Phil Yarnell joined the meeting after Barbara left. He said high CPK levels are common with lightning strikes. He also said physicians know that extreme CPK values imply severe muscle damage and that they can arise from any form of severe injury to the muscles and not just lightning or electric shock. He also said the return to "normal" values is dependent on the severity of muscle damage and also proper kidney function. If the kidneys are functioning at a diminished capacity, the CPK values will be slower to return to normal values. We were joined mid-meeting by Michael Morse, a biomechanical engineer. He said a CPK level of 200 is elevated, but is not indicative.

Barbara would like to correspond with other lightning survivors to discuss CPK levels. If you want to reach out to her, her email address is: barbbrewer@gmail.com.

7. Barb Stemple is in preliminary discussions with the Granby library to do a lightning presentation sometime next spring and invited LDC to join in.
8. Barb mentioned an electric shock survivor at an annual Lightning Strike & Electric Shock Survivors International conference who came into contact with an electrical source while standing on a ladder and he could not let go due to tetanic contraction. The ladder was kicked out from underneath him and he fell to the ground, his weight being the only way to separate him from the electric source. This led to a broader discussion of tetanic contraction.

Phil pulled some information on tetanic muscle contractions using AI. Here’s what he found. “Tetanic muscle contractions, which are strong and sustained contractions can occur with exposure to both AC and DC. AC is more likely to cause repeated muscle contractions because of the periodic current changes this can lead to a “gripping” effect where the person might be unable to let go of the source. The frequency of AC plays significant role in the type of muscle contraction. The 50 to 60 Hz current is particularly dangerous but what is it is within the range that can cause muscles to contract repeatedly leading to contractions. Direct current tends to cause a single strong muscle contraction at the moment of contact. Once the initial contraction occurs if the current continues, the muscles may remain contracted , this type of contraction can also be very dangerous because it can result in a sustained contraction that might prevent the person from pulling away from the current.”

9. Phil mentioned some items of interest from a lightning article in the Denver Post.
 - Per the National Lightning Safety Council, Colorado ranked third in the country for fatalities from 2006 to 2023 with 24 fatalities.
 - Per the National Weather Service, fishing accounted for the most fatalities from 2006 to 2023 with 41 fatalities.
 - The National Parks Service noted people should not take cover in caves or underneath overhangs since lightning can travel through the rock.

10. LDC welcomes your questions. Please send them via e-mail to Steve Clark at sclarktoto@gmail.com. Your medical questions will be forwarded to Dr. Phil Yarnell for his review and will usually be taken up for discussion in the next month's meeting. Please be advised any questions posed are for the general consideration by the group and any answers given do not constitute a formal medical opinion. If a formal evaluation is requested, arrangements can be made directly with Dr. Yarnell. If you have a medical emergency, please call 911 or your local EMS.
11. Questions, comments, error notifications, and critiques of these minutes are welcome. Please send them to Steve Clark. Please keep the communications professional and respectful. They will be forwarded to the appropriate author(s) of the minutes and addressed accordingly.
12. LDC Disclaimer: These minutes do not represent official positions of the LDC or its members. They simply reflect the comments made at the meeting. Furthermore, the LDC does not implicitly or explicitly recommend or endorse any product or service. Any product or service presented in these minutes is done so for purposes of discussion and analysis. The merit (or lack thereof) is open for the consideration and review by the entire membership.
13. Next meeting: Friday, September 13, 2024, from 11:45 AM to 1:00 PM.

Respectfully Submitted,
Steven E. Clark, Consulting Meteorologist

Lightning Links

This is a monthly listing of periodicals, websites, and videos about lightning and allied areas from a variety of sources. A headline or description is listed, followed by the link. Please note that some of the links are perishable, which means you'll need to go to the source for the information.

Andrews, A., 2024: Truck Struck by Lightning Twice with Man Inside Near Colorado Springs. *KKTV*. July 19, 2024. Link: <https://www.kktv.com/2024/07/19/mans-truck-struck-not-once-twice-by-lightning-security-widefield-area-while-inside/>

Dean, J., 2024: "It Was Like a Big Bomb": Construction Vehicle Struck by Lightning Twice with Person Inside in Southern Colorado. *KKTV*. July 19 and 21, 2024. Link: <https://www.kktv.com/2024/07/21/it-was-like-big-bomb-construction-vehicle-struck-by-lightning-twice-with-person-inside-southern-colorado/>

Pereira, I., 2024: 2 Teens, Including 9-Month Pregnant Girl, Struck by Lightning in Indiana. *ABC News*. August 3, 2024. Link: <https://www.aol.com/2-teens-including-9-month-224134539.html>

GMA Team, M. Knox and C. Johnson, 2024: Teen Speaks Out From Hospital Bed After Surviving Lightning Strike. *ABC News*. July 18, 2024. Link: <https://abcnews.go.com/GMA/Living/teen-speaks-hospital-bed-after-surviving-lightning-strike/story?id=112058205>

Spencer, R., 2024: Summer Also Lightning Season; Here's How to Stay Safe. *Denver Post*. August 1, 2024. Link: https://mng-prod.auth0.com/login?state=hKFo2SA4cWoxLXE4Y3p4cG14TFZKcFFIZGJIU1AtTjVDODBzSqFupWxvZ2luo3RpZNkgMnlxcTdjUmt4M1hyeERBLWlUVE1HWmhWbHF6eFB6NlmjY2lk2SBoaVN3MEVqY2ZIN0NERnlDNDBST0JxWjlVdU9na01WOQ&client=hiSw0EjcfH7CDFyC40ROBqZ9UuOgkMV9&protocol=oauth2&response_type=id_token%20token&response_mode=form_post&redirect_uri=https%3A%2F%2Factivate.denverpost.com%2Fgateway%2Fgeneric.aspx%3Fpbid%3Dc861931d-b4c1-434c-b017-5a5c7751501f&scope=openid%20profile%20email&nonce=faa0dfa7-962f-469b-b0d1-08f2ab84dc0b

NOTE: This is an eNewspaper link and it requires a login.

A couple of randomly chosen citations on tetanic contraction.

M. Odell,
Electric Shocks and Electrocutation, Clinical Effects and Pathology,
Editor(s): Jason Payne-James, Roger W. Byard,
Encyclopedia of Forensic and Legal Medicine (Second Edition),
Elsevier,
2016,
Pages 419-427,
ISBN 9780128000557,
<https://doi.org/10.1016/B978-0-12-800034-2.00166-X>.
Link to abstract: <https://www.sciencedirect.com/science/article/abs/pii/B978012800034200166X>

Geibel, J., (Chief Editor), 2021: Electrical Injuries. Medscape. Updated May 26, 2021.
Link: <https://emedicine.medscape.com/article/433682-overview?form=fpf>