

Lightning Data Center
St. Anthony Hospital
Minutes
February 8, 2002

Quote of the Month:

"I left this meeting with an enormous sense of enthusiasm for our purposes and our group."

Michael Cherington, MD (from the minutes of our inaugural meeting on Feb. 7, 1992)

Those who attended that inaugural meeting in 1992 were: K Butzin, J Chambers, M Cherington, D Clark, R Coniglio, M Fulton, R Holle, R Larson, R Lopez, T Rudolph, P Vellman, C Wright.

Those present at our 2nd meeting: Chambers, Cherington, Collier, D Clark, S Clark, Estep, Holle, Langford, Larson, Lopez. Our name then was Lightning Task Force of Colorado.

1. Meeting began at 11:30 am and adjourned at 1:20 pm.
2. Members present: A Ballard, D Ballard, Becker, Bradley, Burrows, Cherington, Foley, Keen, Lammertse, Langford, Larson, Mains, McDonough, Olsen, Russon, Staelin, Swanson, Wachtel, Wallace, Wallin, Woodward.
3. I brought the following article from the literature (abstracted in part here):

Gluncic I, Roje Z, Gluncic V, Poljak K. Ear injuries caused by lightning: report of 18 cases. J Laryng Oto 2001;115:4-8.

"University Hospital Split during..1984-1999...18 patients...On admission all patients complained of severe pain, tinnitus and hearing impairment...tympanic membrane rupture in 12 patients. In all patients, the ruptures healed well, and restitution of the hearing function was achieved...All our patients exhibited neuropsychological symptoms of confusion, disorientation and transient retrograde amnesia...one patient in whom transient facial palsy occurred."

4. Carl Swanson brought photographs of a night ski that he had taken. He asked the question: What kind of plasma energy discharge is visible on the photograph? Carl also announced that there will be a special program, entitled Forces of Nature in March at the Denver Natural History Museum. Several persons will speak on lightning, including: Carl, Bob Glancy, and Phil Yarnell.
5. Our guest speaker today was Gilbert McDonough, MD. His topic: "Electrophysiology of Nerve, Muscle & Blood Vessels -- Relating to Lightning Injury". Gil trained in internal medicine and rheumatology at the University of Colorado. He served in the United States Navy.

Gil gave an outstanding presentation covering the important issues of nerve, muscle and cardiac electrophysiology. I cannot do justice to his talk by summarizing it here. I will transmit the notes that I took during his presentation.

- a. Cell membranes; sodium channels; nerve and muscle action potentials. Resting potentials.
- b. Injury to cells from electrical trauma -- With damage to cell membranes, water and electrolytes pore into the cell with subsequent abnormalities in depolarization and failure

- to generate action potentials.
- c. Muscle tissue have stores of oxygen and glucose nearby in the forms of myoglobin and glycogen.
 - d. Rigor mortis happens when calcium enters the cell and does not leave.
 - e. Lightning strikes cause depolarization of heart muscle resulting in cardiac arrest. Sinus rhythm can return spontaneously or after CPR. Technical electricity causes ventricular fibrillation.
6. On the occasion of our tenth birthday, we all partook of delicious carrot cake.
7. These minutes do not represent official positions of LDC. They reflect the comments of members present.
8. I notified our members that the April meeting will be held on the 3rd Friday of the month instead of our usual date, the 2nd Friday. Our guest speaker will be Gerard Berger of France. Please make the change in your calendars for the April meeting. The March meeting will be held at the usual date, the 2nd Friday (March 8).
9. Next meeting will be held at 11:30 am on Friday, March 8, 2002 in the Main Auditorium of St. Anthony Central Hospital. Rick Russon will be our speaker. His topic will be: Atmospheric Electricity Affects on Aircraft.

Respectfully submitted,

Michael Cherington, MD