

**LIGHTNING DATA CENTER**  
**September 8, 2006**  
**Minutes**  
**St. Anthony Hospital, Denver, CO**

Quote of the Month:

“The word is the most powerful tool you have as a human; it is the tool of magic. But like a sword with two edges, your word can create the most beautiful dream, or your word can destroy everything around you.”

Don Miguel Ruiz, 1997 The Four Agreements

1. Meeting began at 11:30 am and adjourned at 1:20 pm.
2. Members present: Burrows, Cherington, Foley, Frank, R Gift, Y Gift, Hagedorn, Lilly, McDonough, Mullan, Nibbe, Rammelsberg, Stadtler, Wachtel, Wallace, Yarnell, and Zablocki.
3. One of the more tragic neurologic complications of lightning strikes is cerebral hypoxia following cardiac arrest. I brought the following article (abstracted in part here):
  - a. Bleck TP. Prognostication and management of patients who are comatose after cardiac arrest. *Neurol* 2006;67:556-7.

“Of the electrophysiologic studies tested, short-latency somatosensory evoked potentials (SSEPs) emerged as the most robust predictor of poor outcome: loss of the cortical response to median nerve stimulation (the N20 potential) carries an almost certain prognosis of death or poor functional recovery. However, the presence of N20 potentials does not automatically select a group who will do well bilateral absence of the N20 potential carried a dismal prognosis. There is accumulating evidence that patients who are comatose after resuscitation should immediately be treated to induce moderate hypothermia (core temperature 32 to 34 C) for 12 to 24 hours. Although EEG is less useful than SSEPs for prognostication, it is essential for the detection and management of status epilepticus.”

I brought the following article (abstracted in part here):

- b. Ferreri F, et al. Mobile phone emissions and human brain excitability. *Ann Neurol* 2006;60:188-196.

“As digital mobile phone technology is now used by more than 500 million people worldwide scientific interest in its potential impact on

human health .has significantly increased in recent years. The signal generated by the Global System for Mobile Communication (GSM) operates at frequencies around 900 MHz and is also the most commonly studied signal in the area of biological effects. Fifteen male volunteers attended. Motor Evoked Potentials were recorded before and at different times after exposure to the EMF. Results demonstrate that GSM-EMF modify brain excitability.”

4. We were fortunate to have guests (Holly Stadtler, Laura Rammelsberg, Lee Frank, and Tom) who were preparing a lightning TV program for National Geographic. Mike Foley reported that the group had visited Colorado sites where lightning strikes occurred this year. These sites included:
  - a. Castle Rock where a teen-ager was struck while mowing the lawn. He had an IPOD listening device on his head.
  - b. Granby where golfers where struck
  - c. Kremmling where golfers were struck.
5. Rick Burrows commented that he will work with the Administrative Committee and the committee chaired by Rick and Greg Stewart on plans to educate people hiking in the Colorado mountains on how to lower the risks of being struck by lightning. The group will seek guidance from Dr. Mary Ann Cooper, Ron Holle, and others.
6. We examined remarkable photographs of Mammatus cloud formations in South Africa. They were sent to us by Dr. Ryan Blumenthal. Bruce Paton brought similar photographs in the recent past.
7. The presentation today was: “A Case of Electrical Trauma and Choroidal Retina Findings.” The speakers were Gregory Zablocki and Dr. Curtis Hagedorn. Gregory is a senior at the University of Colorado. His major is molecular biology. He is interning with retinal surgeons, Dr. Hagedorn and Dr. Brady. The presentation was fascinating and outstanding. I can do justice to the address in these minutes. I shall write out the notes I took.

Anatomy of the eye –

Cornea

Lens

Vitreous Humor (Gelatin-like substance)

Retina

Retina – Cells – Bipolar and ganglion cells

Rods and Cones

Case report: 26 year old crane operator. Injured when boom contacted high tension lines (115,000 volts). He suffered serious injuries. He required surgical amputation of all four limbs. His ophthalmological

injuries included; posterior subcapsular cataract and pre-retinal fibrosis near the optic nerve.

Cataracts are known to occur after high voltage electrical trauma. The cataracts can develop within hours, days, and years after the event. It is possible that thermal effects are responsible for protein denaturation of the lens. No known reports of cataracts from electroconvulsive therapy.

Injury to the iris of the eye can result in a non-reactive pupil.

8. These minutes do not represent official positions of LDC. They simply reflect the comments of members at the meeting.
9. Next meeting: Friday, October 13, 2006 at 11:30 am in the Main Auditorium of St. Anthony Central Hospital.

Respectfully submitted,

Michael Cherington, MD