



WAVELENGTHS

American Chiropractic Registry of Radiologic Technologists

ACRRT

May 2013

PRESIDENT'S MESSAGE:

The year 2012 has passed quickly.

We look forward to serving your chiropractic radiology needs in 2013.

John Miller DC DACBR
ACRRT Board President

RADIATION EXPOSURE FROM AIRPORT SCANNERS

Full-body imaging scanners have been deployed at US airport - on a small scale - since 2007. After the "Underwear Bomber" incident in Detroit in December of 2009, the TSA has been busy deploying hundreds of scanners in an effort to scan every passenger. Here is a side-by-side comparison:

Scanner Type	Millimeter Wave	Backscatter X-Ray
Device Image	 <small>wikipedia.org</small>	 <small>epic.org</small>
Radiation Type	Non-ionizing	Ionizing
Energy Source	24 - 30 GHz Microwaves (EHF)	X-rays
Scan Radiation Levels	Approx. 0.013 mW/cm ²	Less than 10 microrems (TSA) Army tests show: 6.7 microrems - eye & skin dose 11.2 microrems
How does it work?	A machine beams Extra High Frequency (EHF) radio waves over the body and the reflected energy is analyzed to create an image.	Instead of transmitting X-rays through the body, these backscatter rays are reflected back to detectors to create an image.
Safety issues	No known health risk. Millimeter Wave (MMW) Therapy used for medical treatment in Europe at levels < 10 mW/cm ² .	2 peer-reviewed studies estimate 6 to 100 travelers could potentially develop cancer.
U.S. Deployment	Atlanta, Baltimore, Denver, DCA, Dallas, Houston, Newark, Minneapolis, San Francisco	Boston, JFK, LAX, ORD, San Antonio, Seattle, St. Louis, San Diego

There are now 478 scanners at 78 airports around the country. The TSA (Transportation and Security Agency) plans to install 250 more of the Millimeter Wave scanners by 2014.

There is much debate in the field about how little - or whether any - radiation used by the back-scatter machines is safe.

What is new?

We hope you continue to enjoy the ACRRT newsletter.

Please forward comments and suggestions to:

fldacbr@gmail.com.

Study Guides Available

Study guides can be purchased for \$75.00 (including shipping and handling) through the ACRRT office.

Please send a check or money order to:

ACRRT
52 Colfax Street
Palatine, IL 60067

You can order your Study Guide online using Paypal. (service fee applies)

Go to www.acrrt.com and click on the Study Guide.

Any questions?
Call (847) 705.1178

Inside this issue:

AIRPORT SCANNERS	1
What is EHF?	2
uwaves vs. mmwaves	2
DIGITAL CORNER	2
RECERTIFICATION	3
CASE CHALLENGES	3
2013 MEMBERSHIP	3

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What is EHF?

Extremely High Frequency is the highest radio frequency band, a form of electromagnetic radiation. EHF runs the range of frequencies from **30 to 300 gigahertz**, above which electromagnetic radiation is considered to be low (or far) infrared light, also referred to as terahertz radiation, or T-rays.

Radio waves in this band have wavelengths from one to ten millimeters, giving it the name millimeter band or millimeter wave, sometimes abbreviated MMW or mmW.

What is the difference between Millimeter Waves and Microwaves?

The microwave spectrum of radio waves is between **300 MHz (0.3 GHz) and 300 GHz**. Millimeter waves refer to a sub-set of the microwave spectrum: **30 GHz to 300 GHz**, which is the EHF spectrum.

THE DIGITAL CORNER

Commonly used image manipulation and enhancement functions:

1. Window level - by digitally altering the window and level, the brightness and contrast of the image can be changed.
2. Annotations - PACS systems have the ability to annotate text or graphics onto the screen. Adding digital R and L markers will not stand up to a legal challenge as these can be digitally altered.
3. Flip and rotate - the image can be used to orient the image according to the doctor's preferences.
4. Pan, zoom and magnify - questionable areas can be increased in size for optimal radiographic evaluation.

Perks of being over 40...

1. Kidnappers are not very interested in you.
2. In a hostage situation you are likely to be released first.
3. No one expects you to run into a burning building.
4. People call at 9 PM and ask, "Did I wake you?"
5. People no longer view you as a hypochondriac.
6. There is nothing left to learn the hard way.
7. Things you buy now won't wear out.
8. You can eat dinner at 4 P.M.
9. You can live without sex but not without glasses.
10. You enjoy hearing about other peoples operations.

REFERENCES:

1. <http://www.propublica.org/special/scanning-the-scanners>.
2. <http://www.propublica.org/new-army-study-says-radiation-from-airport-body-scanners-is-minor>
3. <http://ps.Columbia.edu/news/airport-scanner-radiation-how-much-too-much>



CASE CHALLENGES

2 Different Patients with Braids



Fig. 1 - Cervical - AP - LC View

What are your observations?

Answer at end of newsletter.

Fig. 2 - Cervical Spine Exam

What are your observations?

Answer at end of newsletter.

RECERTIFICATION PROGRAMS — 2013

While prior approval of all programs is required, it is impossible for us to maintain all dates, places and faculty of all program presentations.

It is suggested that you contact your state chiropractic association or nearest chiropractic college for information on programs available in your area.

Applications for program approval are being received on nearly daily basis.

All dates of presentations are subject to change:

FLORIDA CHIROPRACTIC ASSOCIATION

Contact: FCA
Phone: 407 . 290 . 5883
www.fcachiro.org

NCCA

X-ray Recertification (6 hours) June & Dec. 2012
Charlotte, NC
Contact: Heather Wrenn, Education Director
Phone 919 . 832 . 0611
www.ncchiropractic.com

ACRRT

EXECUTIVE HEADQUARTERS

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You will need to send a check for

Membership Dues

and continuing education certificate prior to

December 31, 2013.

Go to www.acrrt.com for further information.

Self Instructed Readings (SIRs) - Available now for those needing six (6) hours of continuing education.

These are articles that you have 30 days to read, answer corresponding questions and return to our office for credit.

SIRs are available for \$25.00 per hour or \$150.00 for the required six (6) hours.

Please contact our office: 847 . 705 . 1178 to order.

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TO:

EXECUTVE DIRECTOR'S MESSAGE ...

Dear members,

While a certificate of attendance for a course that you attended for CE's is necessary, please include an outline of the subject matter and topics that were presented. The subject matter for the courses that you attend has to directly deal with your position and function as an X-ray technologist. Without an outline or syllabus of the course material, your CE's will be pended until additional information is received. I recommend that you submit the course outline **PRIOR** to attending the program for ACRRT approval.

Note: The advent of this year brought prolonged extreme cold temperatures and moisture in contrast to last year. Let me remind you that X-ray film and electronic equipment can be damaged by excess moisture caused by the condensation of humid air entering your facility. A small but effective dehumidifier set to extract the excess moisture, but not to create an overly dry and electrostatic atmosphere, is advised.

Have an eventful and safe summer.

Dr. L. Pyzik

ACRRT Executive Director

ANSWERS to CASE CHALLENGES

Fig. 1 - The majority of the vertebrae are seen on the frontal view.

Fig. 2 - Patient shows multilevel spina bifida (C6-T1) - partially obscured by the braids.

Whenever possible, have hair braids up and out of the way of the area of interest.