

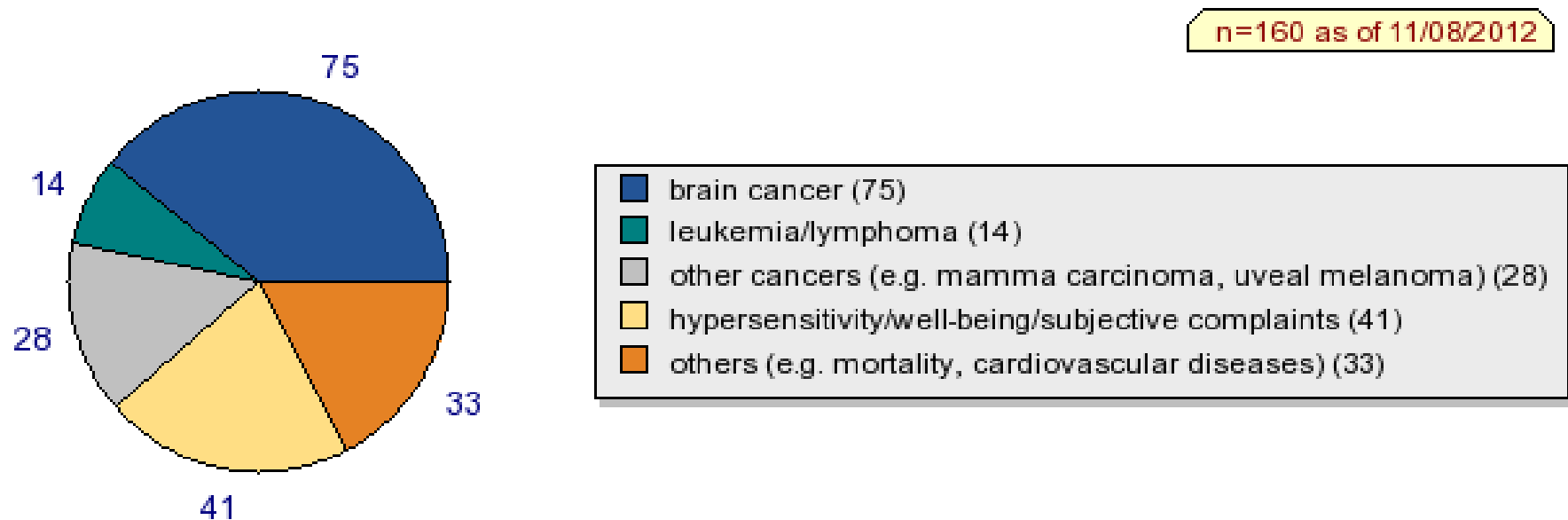


# Cellphone radiation risks—the case for precaution

National Press Club  
Ronald B. Herberman  
November 12, 2012

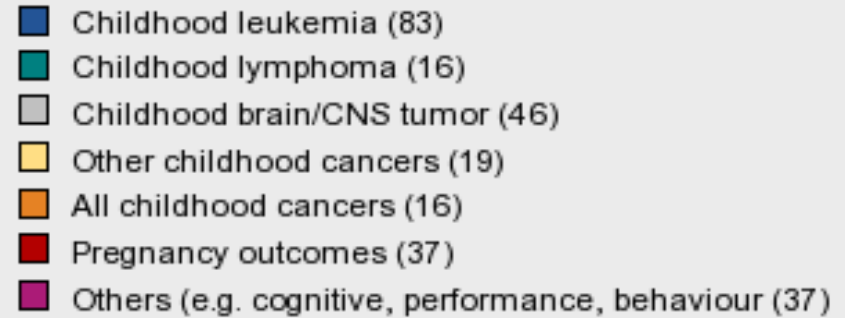
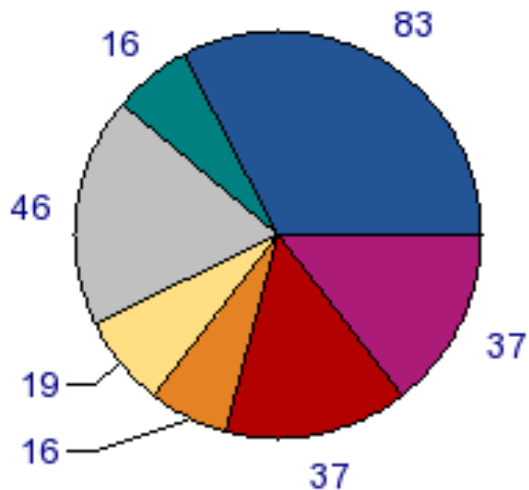
# There are few studies on cellphone radiation

Total number of epidemiological studies of cellphones and health (source: EMF Portal, 2012)

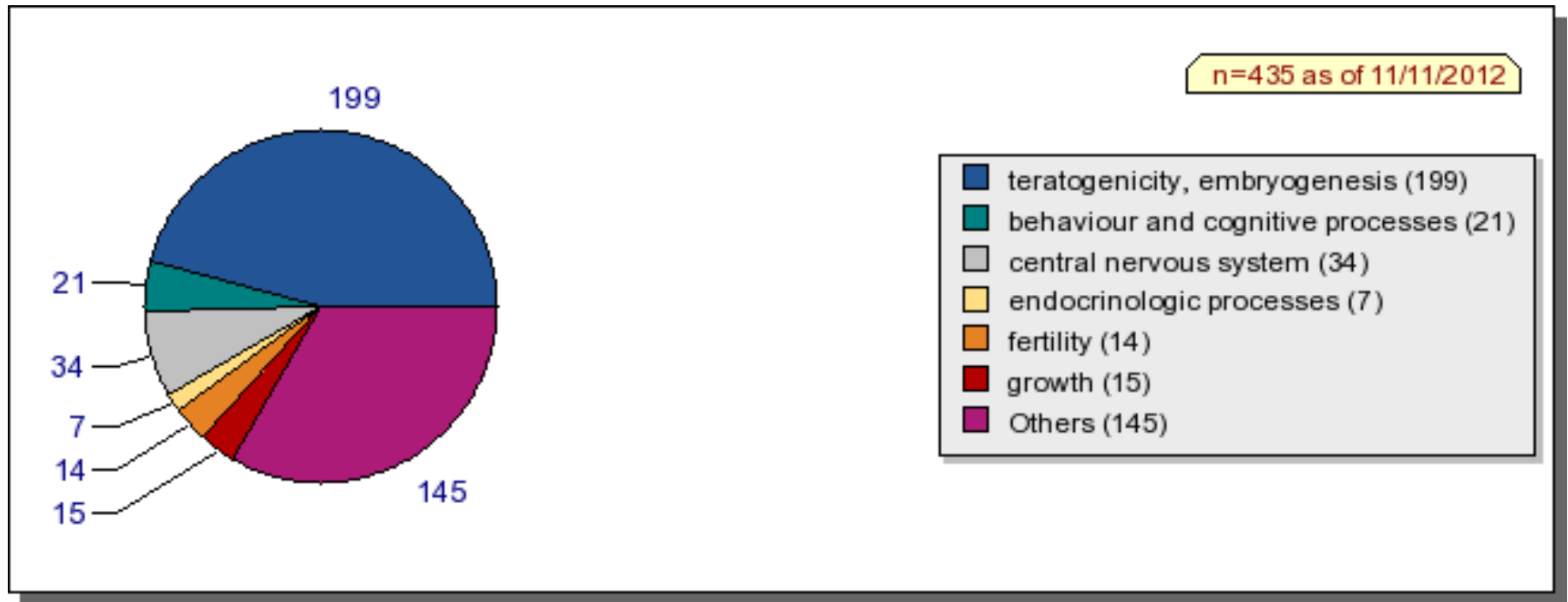


# Total number of studies of children's health and cellphones (EMF Portal, 2012 )

n=172 as of 11/11/2012



# Total number of studies of young animals (source: EMF Portal, 2012)



# Models of Brain/Body show that children are most exposed to radiation from cell phones

- Based on SAM with 11 pound head 220+ lbs weight
- 5.5 billion cellphone users are mostly smaller & younger

Cell phone standards are based on a heavy-set 6 foot+ tall man\

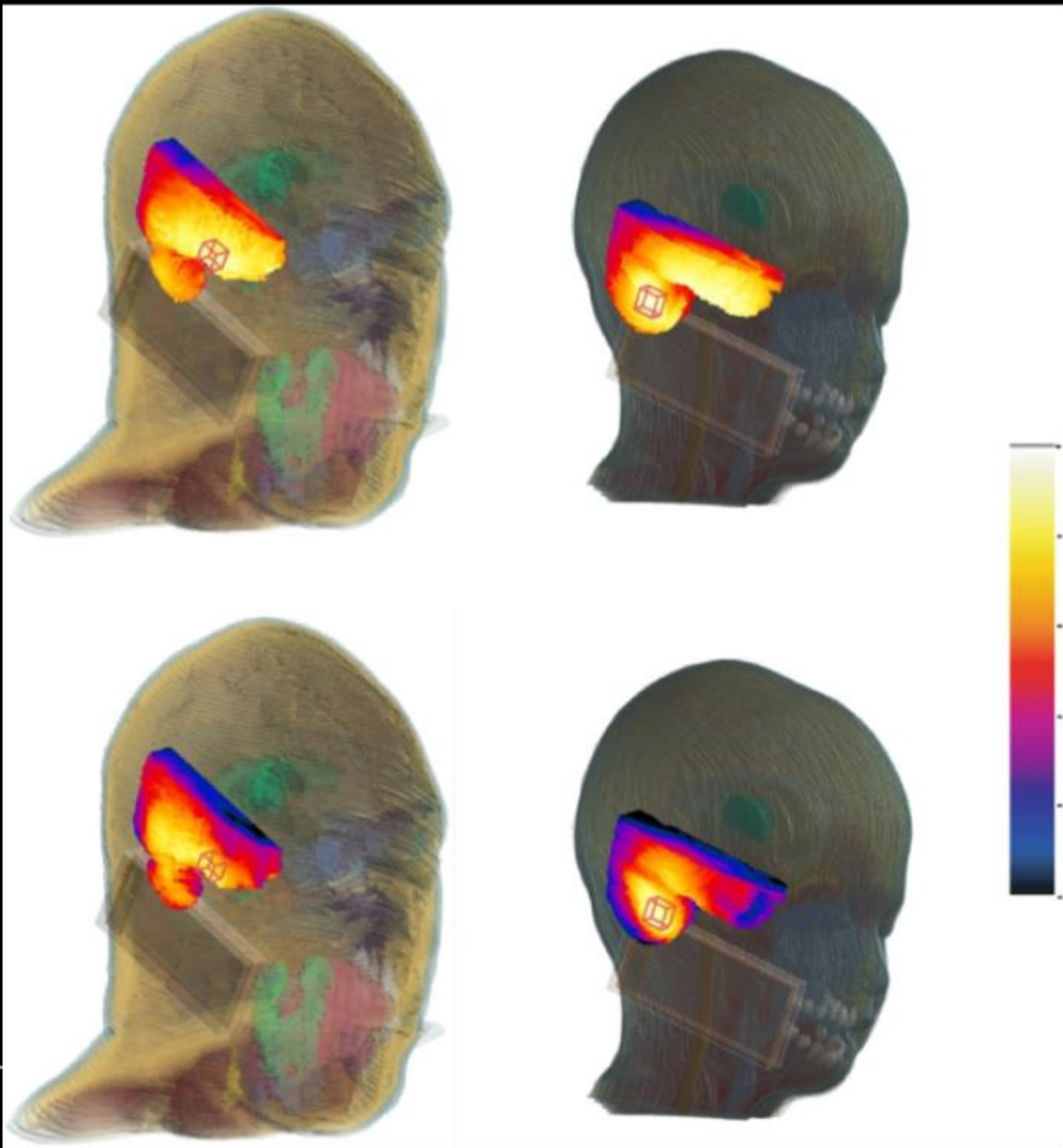
900 MHz the SAR maximum occurs in the center of the case

(w 15 mm spacer for 10 gm)

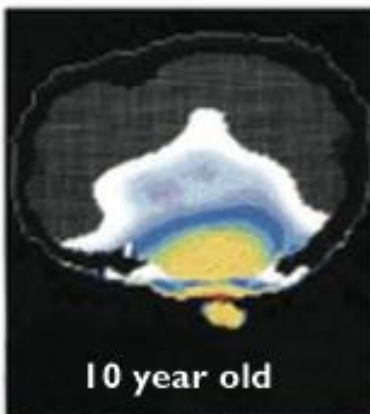
1800 MHz SAR max occurs at edge of case, Christ et al, 2010

Images courtesy of IT'IS, 2010

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# Who's Most At Risk?



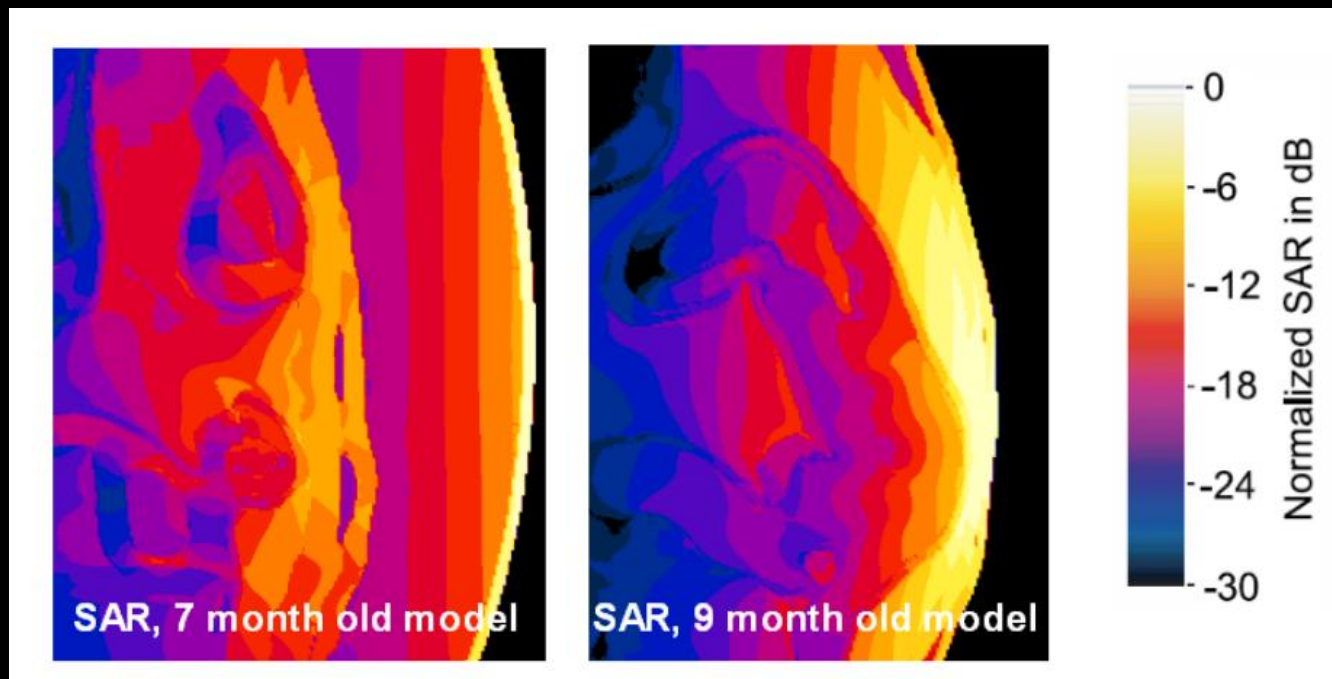
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These computer models from the University of Utah show how radio-frequency radiation from cell phones passes further into the brain of a child than that of an adult. Research that Dr. Om P. Gandhi and Dr. Devra Davis are currently working on indicates that children may be exposed to twice as much radio-frequency radiation from a cell phone as an adult.

*Do not take without permission*

Source: Brain graphics courtesy of Professor Om P. Gandhi, Univ. of Utah; photos from iStockPhoto.com

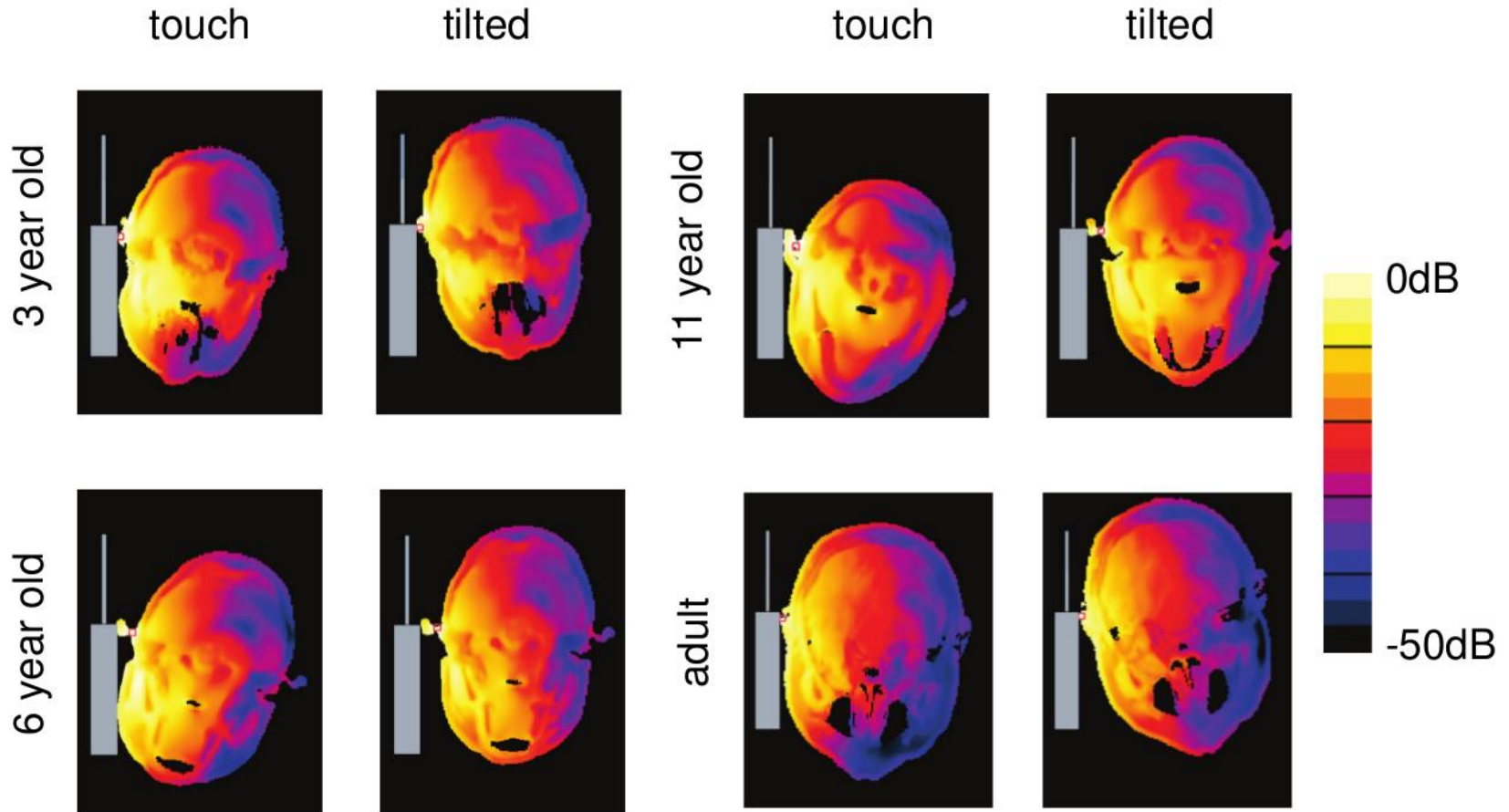
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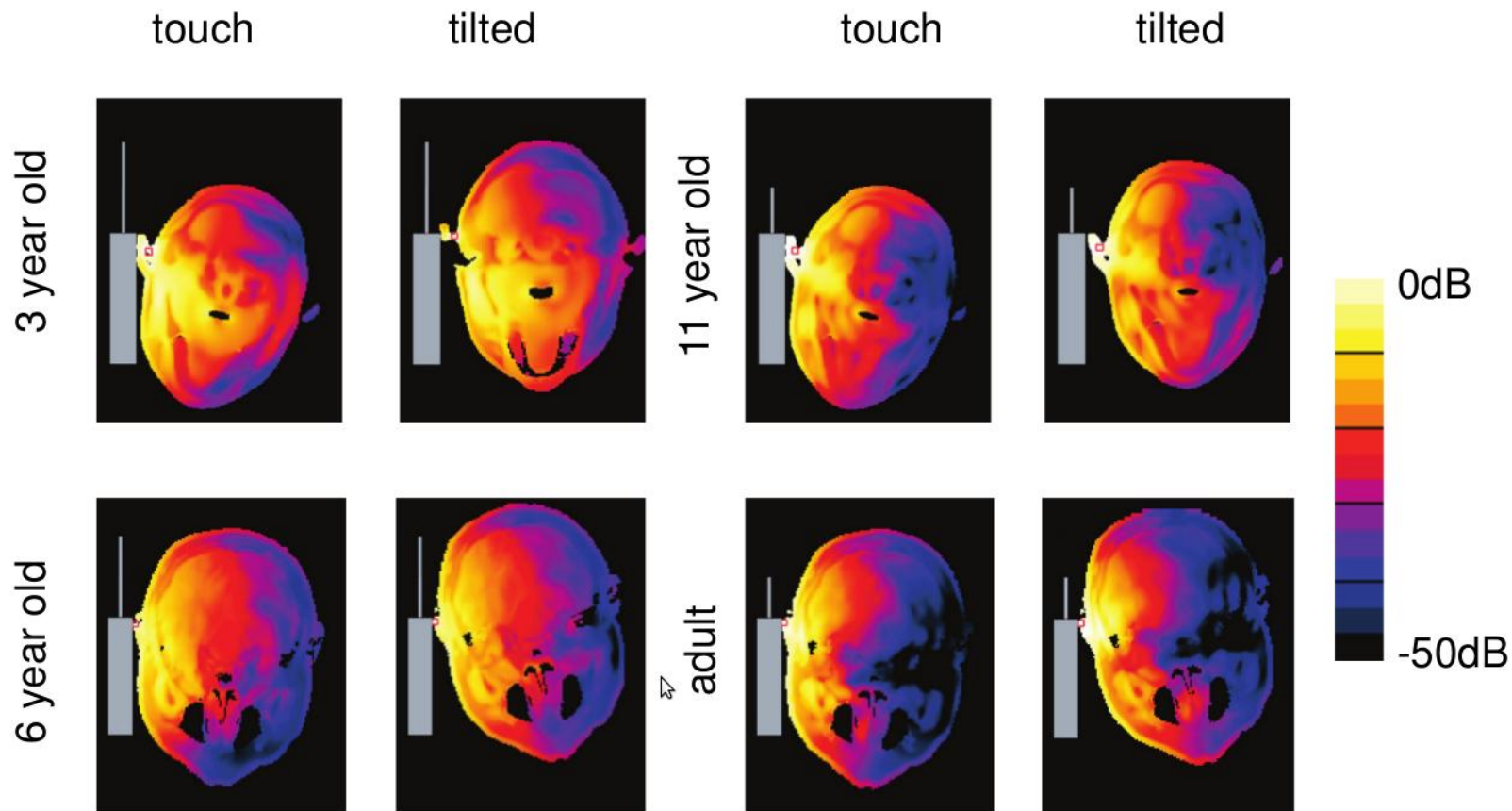
Normalized SAR for the mother and the fetus exposed to a dipole antenna in front of the abdomen (frequency is 450 MHz because of larger penetration depth (courtesy Andreas Christ and Niels Kuster, IT'IS, 2012))



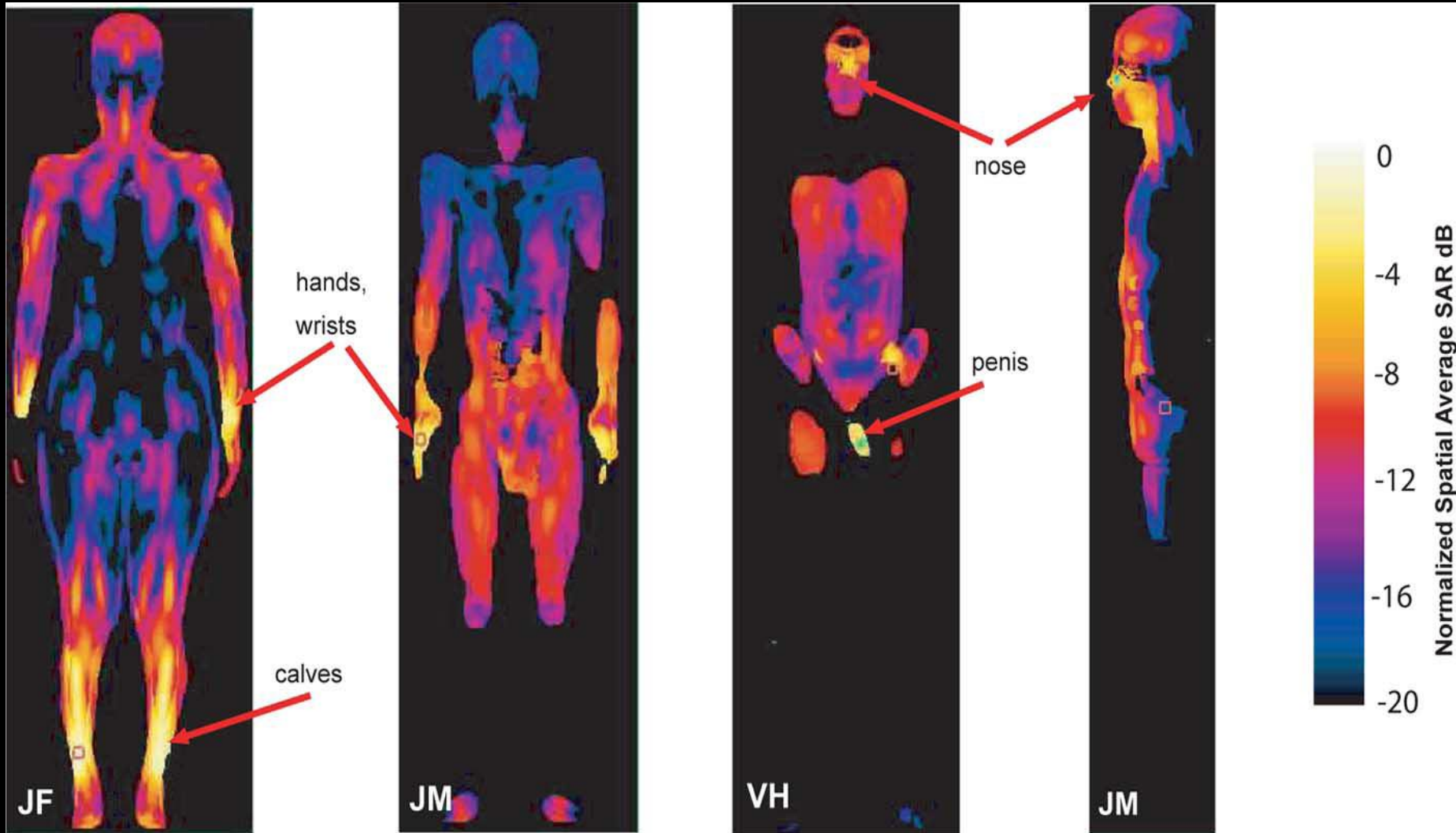
# SAR Distribution in the Head Models at 900MHz



# SAR Distribution in the Head Models at 1800MHz



# Penis gets highest exposure



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Workplace exposures, Gosselin et al, 2009 IEEE Transact.



# Precautionary Advice Issued by University of Pittsburgh Cancer Institute, 2008

- Use speakerphone
- Use earpieces
- Do not keep phone on body/in pocket
- Avoid use in areas of weak signals
- Protect abdomens--pregnant, adolescent and men wishing to become fathers
- France, Finland, Israel, and the European Environment Agency advise cellphone precautions

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