

Electromagnetic Radiation (EMR) from Consumer Products

Reducing Your Exposure - 101



Reducing Your Exposure

101

Steps you can take today to reduce your exposure to wireless radiation

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Defining the issue

- It is now known that 'ionizing' radiation (i.e. x-rays) are biologically harmful. This was not established until long after the introduction and mass adoption of x-ray technology.
- Today, our exposure to a different type of radiation (non-ionizing) is growing exponentially.
- 'Non-Ionizing' Electromagnetic Radiation (EMR) comes in many forms in our homes and places of work, including:
 - Cell phones
 - Baby monitors
 - Cordless phones
 - WiFi routers
 - Smart metres – electric, gas and water
- More and more studies are emerging that suggest that non-ionizing radiation is also biologically harmful - these studies challenge the aged theory that only ionizing radiation is harmful
- Most people are unaware of the potential harm, yet are dependent on their technology
- There is a percentage of the population that is sensitive to EMR with serious health affects, though they may not yet know that EMR is the cause

How to reduce your exposure to wireless radiation from consumer products

1. Ideally, eliminate devices that radiate, and opt for safer (wired) products
2. Minimally, reduce exposure levels by increasing distance between yourself and radiating devices, or opting for devices that radiate less
3. Alter usage habits to decrease exposure (IE turning off WiFi at night when not needed)

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Most common products/devices that subject us to wireless radiation

- WiFi (routers and wireless devices)
- Cordless Phones
- Baby Monitors
- Cell Phones
- Smart Meters

*** Examples of other wireless products/devices **not** covered in this 101 guideline:**

Game consoles, wireless printers, wireless televisions, security cameras, home automation, media streaming devices, microwave ovens, bluetooth devices, handheld games, wireless speakers and headphones, smart appliances - *more information on how to reduce exposure from these technologies coming soon!*

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Reducing Your Exposure WiFi Routers

- **WiFi routers**

- Use only wired connections
 - be sure to also disable wireless function on your router and computers - some router brands have a wireless on/off button
 - disable WiFi on iPads, iPods etc when Internet is not needed
- If wired connections are not an option, here are some tips to minimize exposure from a wireless connection:
 - place the router as far away as possible from high-occupancy areas of your home (especially bedrooms) and office.
 - purchase a router that allows you to turn off the 'wireless' function with the push of a button, and be sure to turn off when not in use (often marketed as an 'energy saving' feature)
 - unplug the wireless router at night... use a 'light timer' to have it automatically shut off, and turn on again at certain times.
 - If possible, turn down the broadcast power of the wireless router (some models allow for this in their advanced setup features)



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Reducing Your Exposure Cordless Phones

- Use a corded phone whenever possible
- If you must own a cordless phone, opt for an older analog model (i.e. 900Mhz CT1) - These original cordless phones differ from the digital/pulsed radiation from today's phones and did not radiate while not in use (most of today's models radiate 24/7, even while the phone is sitting on the base). These older analog models can typically be found on eBay.com - search for "900Mhz cordless phone"
- Some newer models of cordless phones are emerging that have an 'eco' function which disables/reduces the radiation while not in use.
- Ask your neighbours to get rid of their cordless phones—for their health and wellbeing too, of course—because very often the radiation emitted by cordless phone bases reaches out 50-100 feet, which means a neighbour's radiation could be in your space.
- Anyone who insists on having a cordless phone should locate the base far away from everyone, and at bedtime unplug the power to all cordless phone components (or use a light timer to turn the phone off and on automatically at set times)



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Reducing Your Exposure Baby Monitors

- Use wired alternatives such as a 2-way wired intercom system similar to the one featured in the picture below (search eBay for “wired baby monitor”)



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Reducing Your Exposure Cell Phones

○ Places to Avoid Usage

- everywhere, if you can.. otherwise:
- turn them off or place in “Air Plane” mode when not in use.
- do not use them inside cars, planes, or other metal objects that even remotely resemble the inside of a microwave oven.
- avoid use when the signal is low (less than 3 bars) as the phone will increase it's output (radiation) to compensate
- do not use within 30 feet of children.
- do not keep a cell phone near your body (in a pocket, bra etc)

○ How to use, when you have to:

- a text message is better than a call
- for calls, avoid holding a cell phone to your head, instead:
 - Use an “AirTube” headset (<http://lifebluetube.com/>)
 - Use speakerphone and set the phone on a desk
 - Do not use bluetooth (wireless) headsets.
 - Wired headsets are arguably better than a phone pressed to your head, but still carry radiation up to, (and into) your ear.



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Reducing Your Exposure Cell Phones (continued)

- **How to use, when you have to (con't):**
 - If you must use a phone while driving, look for a phone that has an option to connect to an external antenna that can be placed outside of the car (i.e. Samsung Galaxy S2, SkyRocket)
 - Keep conversations brief.
 - Hang up and call back from a corded landline
 - Check voicemail messages from a corded landline.
 - For a low monthly fee (for example \$3), unlimited call forwarding is usually available. This means that a cellphone user can push a few buttons on their cellphone to forward the cellphone to whatever corded landline is handy and then turn their phone completely off. When ready to leave that location, the cellphone user simply pushes a few buttons to UNforward their cellphone.
- **Cell phone radiation facts:**
 - the radiation is greatest while the phone is ringing, or dialing - just before the call begins)

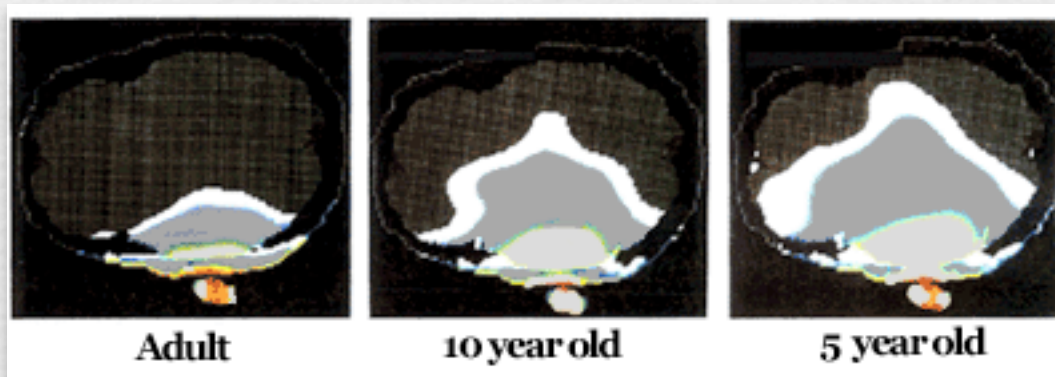


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Reducing Your Exposure Cell Phones and Children

- Cell phone radiation and children:
 - Children are not simply little adults.
 - Radiation penetrates much deeper into a child's head, as their skulls are much softer than an adult skull. The image below shows how far the radiation penetrates through the skull in an adult, versus a 10 year old, and a 5 year old.



- Do not allow children to use a cell phone except for emergencies. The developing organs of a fetus or child are the most likely to be sensitive to any possible effects of exposure to electromagnetic fields (ADVICE FROM UNIVERSITY OF PITTSBURGH CANCER INSTITUTE BASED ON ADVICE FROM AN INTERNATIONAL EXPERT PANEL)



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Reducing Your Exposure Smart Meters

- Smart meters are being aggressively rolled out in municipalities across the country
 - Some municipalities allow you to choose to keep your existing (safe) meter - sometimes in exchange for a small monthly fee
 - ensure that meters are not located near bedrooms, or other areas of high occupancy (such as a home office)



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Tips to reduce your exposure - next steps

- Be even more cautious, and take steps to reduce your exposure to radiation from the following products where possible...
 - Media “streaming” devices such as Apple TV
 - Tablets/handheld devices (such as iPads/iPods etc)
 - Video game consoles and controllers
 - Handheld gaming devices
 - Wireless televisions
 - Wireless printers
 - Wireless (bluetooth) keyboards and mice
 - Wireless speakers and headphones
 - Wireless security cameras
 - Smart appliances
- When shopping for new products, avoid purchasing equipment in the list above that has an ‘always on’ WiFi or bluetooth signal. Opt instead for devices that are not wireless, or that have a wireless feature that can be disabled