

# HOLIDAY SAFETY ALERT

## SmartPhones, “Smart” Watches and Wi-Fi Toys Expose Your Child to Radiation

Thinking of giving your child their first cellphone this holiday? A virtual reality gaming system, “smart” watch or cool Wi-Fi toy? Think again. Smartphones and Wi-Fi toys could pose serious health and safety risks.

While Wi-Fi enabled toys, “smart” watches and some cell phones are marketed specifically for children, parents are often unaware that these devices emit radiofrequency radiation, also known as microwaves. Numerous studies have found that low levels of non-ionizing wireless radiation from cell phones and other microwave transmitting Wi-Fi devices can have harmful effects, indicating that wireless devices pose serious health risks, especially for children.

### EXAMPLES OF HOLIDAY TOYS THAT COME WITH MICROWAVE RADIATION INCLUDE:

- **Cell Phones and Smartphones...and yes even children's smartphones** expose children to microwave radiation. The instruction manuals state, “this equipment generates, uses and can radiate radio frequency energy.”
- **Smartwatches: The Apple Watch** carries a fine print warning that the user keep a distance of 1 cm from the antenna, while the same device is touted as “wearable.” But what parent gives their kid an Apple Watch and tells them not to rest their head on their arms—as that would create body contact with the watch?
- **Virtual Reality headsets** often require the user to strap a phone in front of their face, placing a radiation emitting device close to the eyes.
- **Wi-Fi and cell phone connected dolls** use Wi-Fi and speech recognition technology to engage in two-way dialogue, but because that function requires a wireless Internet connection, your child's new friend is also a microwave-emitting radio device that can save and send information back to the company.
- **Tablets** are marketed to children starting at infancy, yet tablets emit microwave radiation when they are wirelessly connected to the internet; exposures can be reduced by only giving the tablet to children when it's on airplane mode after first downloading movies or games.
- **Wireless Gaming Systems:** Video gaming system consoles have wireless antennas and most **instruction manuals state**, “this equipment should be installed and operated with at least 20cm (8 in) and more between the radiator [the console] and person's body (excluding extremities: hands, wrists, feet and legs).
- **Drones:** Drones have wireless antennas and sometimes use smartphones to communicate.

Because smartphones, smart toys and other smart home devices—the so-called “Internet of Things”—have become ubiquitous in our daily lives, we rarely think about how this technology works. But it's not holiday magic—it's microwave radiation. In fact, all wireless devices, from smartphones to Wi-Fi and connected stuffed animals, are two-way microwave radios that send and receive a type of non-ionizing electromagnetic radiation also called radio frequency (RF) radiation or microwaves.

Many **doctors** are concerned about how this daily exposure will affect children's health in the long term. Before buying your child a Wi-Fi toy or their first cell phone this holiday, be sure you know these facts. Learn more at [EHTrust.org](http://EHTrust.org).



# WI-FI AND SMARTPHONE FACT SHEET

## 1. New Studies Find Microwave Radiation from Smartphones Could Cause Brain Cancer

The landmark \$25 million **U.S. NIH/NIEHS National Toxicology Program** study found long-term daily exposure to cell phone radiation led to cancers of the brain and heart nerve in male rats, as well as **DNA damage**. **Studies in humans** who used cell phones close to their heads for over 10 years develop the same types of cancers.

## 2. Smartphone Radiation Is Linked to Brain Damage, ADHD, Fertility Problems and More

Compliance with government guidelines generally has been presented as “safe” and so cell phones and wireless devices are assumed as safe by the public. However, peer reviewed studies show that very low radiation intensities, far far below regulatory government limits, can cause serious damage to health. Even though this radiation is less energetic than x-rays, it can induce a range of damage.

A Yale Medicine study **found** that prenatally exposed mice **showed** increased hyperactivity, impaired memory and abnormal brain development. This study is one of **many** that have linked wireless radiation to impacts such as **damaged brain cells, altered brain activity, memory problems, headaches** and **sleep problems**. Numerous **studies** indicate that **cell phone** and **Wi-Fi radiation** damage sperm. **Connections** between electromagnetic exposure and **autism and ADHD** have led **doctors to advise** reducing exposure. More than 140 physicians, scientists and educators signed the **BabySafe Project’s Joint statement** emphasizing that pregnant women reduce cell phone radiation exposure due concerns about impacts of exposure to prenatal brain development.

## 3. Virtual Reality with Smartphones Exposes The Eyes To Microwaves and Is Linked To Eyesight and Balance Problems in Children

Smartphones are placed in virtual reality (VR) headgear to take children on adventures to faraway places, but when **researchers** evaluated the wireless radiation exposure, they **found** the highest radiation intensities were to the eye and frontal lobe of the brain as phones are positioned in front of the face. Safety testing was never done for such repeated exposures to the eye.

Even without smartphone radiation, VR technology is linked to visual problems in children due to the headgear placement in front of the eyes. A recent **Leeds University** study **found** a 20-minute VR game led to eyesight and balance problems in children. Understanding that children’s eyes are more vulnerable, VR headgear **instructions** usually warn that the headgear should not be used by children under the age of 13 because “watching videos or playing games with the [a VR headset] may affect the visual development of children.” Both **eye doctors** and **scientists** who study cell phone radiation are issuing warnings.

## 4. Cell Phones Were Never Tested for Long-Term Safety nor for Use by Children

Cell phones were never pre-market tested for long-term safety. Safety limits for cell phone radiation were set 20 years ago, based on 30-year-old science, using a model of a large adult male. After a **Government Accountability Office report** recommended a review of U.S. human exposure guidelines, the FCC **opened** a docket and many scientists submitted expert **comments** calling current standards “inadequate” to protect children. Parents assume they are buying devices and toys that have been deemed “safe,” but no U.S. health agency has ever completed a systematic evaluation of the health risks of wireless radiation. Cell phone companies **inform** their shareholders that wireless devices may pose a financial risk, and most insurance companies **exclude damages** from exposure to cell phone radiation due to their **evaluation** of this type of radiation as high risk.

## 5. Makers of “Smart” Toys, “Wearables” and Cell Phones Issue Fine Print Warnings That Are Impossible to Follow

All cell phones have **fine print warnings** advising that users maintain a specific separation distance between the phone and the body. Manufacturers radiation test the phone at this distance.

For example, the **LG G6 Manual** on page 158 states, “To comply with FCC RF exposure requirements, a minimum separation distance of 0.39 inches (1.0 cm) must be maintained between the user’s body and the back of the phone.” Are children remembering to place their phones in their pockets with the back of the phone facing out?

Many wireless toys also warn about keeping a safe distance from the device. For example, there is an internet-connected watch that **Verizon says**, “you and your kid can be happy about.” But would you be happy about strapping a device on your kid’s wrist that has a **fine print warning** in the manual recommending “a minimum separation distance of 0.39 inches (1cm) must be maintained between the user’s mouth (face) and the front of the device”? The Apple Watch also carries a **fine print warning** that the user keep a distance of 1 cm from the antenna, while the same device is touted as “wearable.” But what parent who gives their kid an Apple Watch tells them not to rest their head on their arms—as that would create body contact with the watch?

Many video gaming system consoles also **state to users**, “this equipment should be installed and operated with at least 20 cm (8 in) and more between the radiator and person’s body (excluding extremities: hands, wrists, feet and legs). Many laptops also state that the antennas should be about 8 inches from the body. Do you know where the antenna is on your child’s device?

# WI-FI AND SMARTPHONE FACT SHEET

## 6. When Cell Phones Are Tested In Contact With The Body, The Radiation Violates Government Safety Limits

Last year, France **released** the results of their cell phone radiation measurements on hundreds of cell phones after pressure from a French physician making **headline** news. The **test results** found that when the phones were tested in body contact positions, up to 90% of the phones exceeded radiation limits, some over 3 times the European limits and over 9 times the equivalent US limits. This means most phones could allow 3 to 9 times the allowable radiation into your body. The French test results apply to phones sold all over the world because the situation is the same in every country. Manufacturers do not have to test phones or wireless devices in positions of body contact.

So when a child rests a phone on their leg to watch a video, or lies in bed with the phone on their chest streaming music, their body could be absorbing radiation at levels far higher than government limits.

## 7. The World Health Organization Classified The Microwave Radiation In Smartphones As A Possible Carcinogen in 2011 and Current Evidence Indicates It Is A Human Carcinogen.

In 2011, the World Health Organization's International Agency for Research on Cancer (WHO/IARC) **classified** radio frequency as a Class 2B Possible Carcinogen. However, because of the newly released National Toxicology Program (NTP) findings and several other studies published since then, **long-time advisors** to the WHO/IARC **conclude** that this radiation should be regarded as a human carcinogen causing glioma—the same type of brain cancer that affected Senators Ted Kennedy and John McCain.

Surgeons have published **case reports** of unusual cancers in young women who have stored a cell phone in their bras. The tumors were located directly under the areas where the antennas of the phones were stored.

## 8. The American Academy of Pediatrics Recommends Families Reduce Exposure To Children and Has Called on the Federal Government to Tighten Wireless Radiation Limits.

Children have thinner skulls, smaller heads and higher water content in their developing tissues. As a result, cell phone radiation penetrates deeper and more intensely into a child's brain when compared to an adult. According to the World Health Organization's International Agency for Research on Cancer, "in children using mobile phones, the average deposition of RF energy may be two times higher in the brain and up to ten times higher in the bone marrow of the skull." **The American Academy of Pediatrics** reiterated this fact and children's unique vulnerability in their letters calling on the Federal government to tighten cell phone radiation exposure limits.

After the results of the National Toxicology Program results were made public, the American Academy of Pediatrics issued a **press release** recommending that parents "limit use of cell phones by children and teens" and **issued** ten steps to the public to reduce cell phone radiation exposure.

## 9. The California Department of Public Health Just Issued Public Health Advice To Reduce Exposure To Cell Phone Radiation.

The released **guidance** from California to reduce exposure to radiofrequency radiation from cell phones made **headline national news** last week and cautions that "children may be more at risk" because they will be exposed to cell phone radiation for a "lifetime." The Department states, "laboratory experiments and human health studies have suggested the possibility that long-term, high use of cell phones may be linked to certain types of cancer and other health effects, including: brain cancer and tumors of the acoustic nerve and salivary glands, lowered sperm quality and inactive or less mobile sperm, headaches and effects on learning and memory, hearing, behavior and sleep."

The Connecticut Department of Public Health has also issued advice to reduce cell phone radiation as has **Consumer Reports**. Last year the **Maryland State Children's Environmental Protection Council** issued recommendations to reduce radiofrequency radiation in public school classrooms. Several **medical organizations internationally** and over a **dozen countries** recommend children minimize wireless phone exposures.

## 10. Even When "Sleeping," Smartphones/Toys/Watches Emit Radiation

A phone might be sitting quietly on your nightstand, in your pocket, or tucked into the waistband of your yoga pants, but it is always radiating. Apps are updating, texts are incoming and notifications are arriving. The phone is always "checking in" with pulsed microwaves several times per second to the nearest cell tower. Likewise, Wi-Fi toys are always checking in with the Wi-Fi router even when they are not being used. Each time a device makes that connection near your body, you are exposed to pulsed radiation.

Cell phone regulations were set decades ago and the way people are using phones has dramatically changed. At that time, adults used phones with belt clips and Wi-Fi was non-existent. Long term safety testing was not done. Research to understand the risk to children was not done.

# SCIENTIFIC IMAGING OF WI-FI AND CELL PHONE

## Children Are More Vulnerable

### VIRTUAL REALITY: SCIENTIFIC IMAGING OF CELL PHONES IN VR POSITION SHOWS RADIATION INTENSITY INTO THE BRAIN OF CHILDREN

Published research on cellphones close to the eye and brain of a child in VR positions finds higher microwave radiation exposures to the eyes. This imaging also shows radiation dose into the brain. These simulations employed an anatomically based model of a six year old and generated estimates of how the young brain absorbs cell phone radiation.

[Powerpoint Presentation: Smartphone in Virtual Reality Research on cell phones in VR Position](#)

### RESEARCH CONFIRMS THAT CELL PHONE RADIATION IS ABSORBED DEEPER INTO CHILDREN'S BRAINS.

Because children's skulls and bones are thinner and their brains and bodies contain more fluid, they will naturally absorb more cell phone microwave radiation. These simulations were run through a sophisticated computer system that the U.S. Food and Drug Administration (FDA) currently applies to evaluate medical devices. Multiple research studies confirm the higher absorption of microwave radiation into deeper structures in the young brain than into older individuals. **In these images the lighter colors represent a higher SAR and the darker colors are a lower SAR. SAR is a measure of cell phone radiation intensity and absorption into the body called Specific Absorption Rate.**

### WIRELESS TABLETS EXPOSE BRAINS TO MICROWAVE RADIATION.

Wireless tablets have several transmitting antennas that emit regular pulses of radiation unless the Wi-Fi is turned off. Although the tablet is not touching a child's head, the radiation penetrates into a child's brain.

### CELL PHONES AND OTHER WIRELESS DEVICES EMIT MICROWAVE RADIATION THAT DAMAGES SPERM AND THE TISSUE OF THE TESTES.

Evidence from experimental research, epidemiological studies and in vitro (cells) laboratory, and in vivo (animal) studies shows that the radio frequency radiation exposure from wireless devices is associated with reduced sperm count, reduced sperm motility and concentration, damaged sperm DNA, altered sperm cell structure, and increased erectile dysfunction.

### Scientific Imaging Videos

[Published Research on Wi-Fi Radiation](#)  
[Published Research on Brain Development](#)  
[Published Research on Cell Phone Radiation](#)

### RESEARCH STUDIES

Clegg et al., "Building Science and Radiofrequency Radiation: What makes smart and healthy buildings." Building and Environment, 2019

Miller et al., "Cancer epidemiology update, following the 2011 IARC evaluation of radiofrequency electromagnetic fields (Monograph 102)." Environmental Research, Volume 167, 2018

Fernández et al., "Absorption of wireless radiation in the child versus adult brain and eye from cell phone conversation or virtual reality." Environmental Research, 2018

Gandhi OP, Morgan LL, De Salles AA, Han YY, Herberman RB, Davis DL. (2012). "Exposure limits: the underestimation of absorbed cell phone radiation, especially in children." Electromagn Biol Med. 31(1), 3451.

Carlberg, Michael and Lennart Hardell. "Evaluation of Mobile Phone and Cordless Phone Use and Glioma Risk Using the Bradford Hill Viewpoints from 1965 on Association or Causation." BioMed Research International, vol. 2017, 2017.

Lerchl, Alexander, et al. "Tumor promotion by exposure to radiofrequency electromagnetic fields below exposure limits for humans." Biochemical and Biophysical Research Communications, vol. 459, no. 4, 2015, pp. 585-90.

Avenidaño, C., et al. "Use of laptop computers connected to internet through Wi-Fi decreases human sperm motility and increases sperm DNA fragmentation." Fertility and Sterility, vol. 97, no. 1, 2012, pp. 39-45.

Aldad, Tamir S., et al. "Fetal radiofrequency radiation exposure from 800-1900 Mhz-rated cellular telephones affects neurodevelopment and behavior in mice." Scientific Reports, vol. 2, no. 312, 2012.

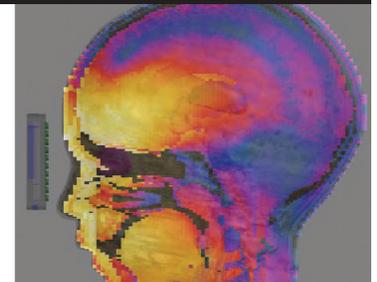
Bas, O., et al. "Chronic prenatal exposure to the 900 megahertz electromagnetic field induces pyramidal cell loss in the hippocampus of newborn rats." Toxicology and Industrial Health, vol. 25, no. 6, 2009, pp. 377-84.

Kim, Ju Hwan, et al. "Long-term exposure to 835 MHz RF-EMF induces hyperactivity, autophagy and demyelination in the cortical neurons of mice." Scientific Reports, vol. 7, 2017.

West JG, Kapoor NS, Liao S, Chen JW, Bailey L, Nagourney RA. (2013). "Multifocal Breast Cancer in Young Women with Prolonged Contact between Their Breasts and Their Cellular Phones." Case Reports in Medicine. Volume 2013, Article ID 354682.

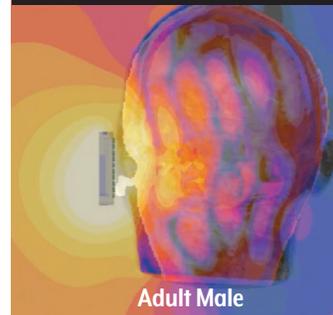
Atasoy, Halil I., et al. "Immunohistopathologic demonstration of deleterious effects on growing rat testes of radiofrequency waves emitted from conventional Wi-Fi devices." Journal of Pediatric Urology, vol. 9, no. 2, 2013, pp. 223-9.

### Radiofrequency Exposure at Eye Plane of 6-Year-Old Child. Smartphone Placed in Cardboard Simulation Position



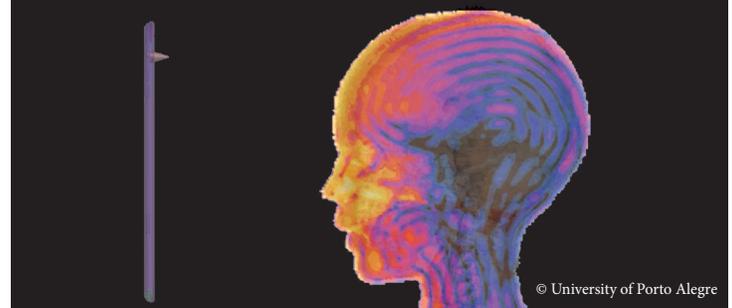
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### Cell Phone Radiation Into The Brain



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### Wi-Fi Tablet Penetrating Into The Brain Of A 6-Year-Old Child



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# FAMILY FACT SHEET

## Reducing Exposures at Home

### 1. Hold Off on the Cell Phone for Your Child

Hold off on a wireless phone *for your child as long as you can*. Instead, consider a digital camera that takes video. If your child likes to talk on the phone, choose a corded landline phone with a dedicated line *instead of a cell phone*. If you are going to splurge, consider an experiential gift, like taking your child and their best friends all out for a special dinner and concert or play.

### 2. Model Healthier Tech Habits

Familiarize yourself with the American Academy of Pediatrics recommendations on reducing cell phone radiation in your family. For example, keep the phone away from your head by using speakerphone. Do not use or carry phones in your pocket, and keep them away from your body. Take care when a child is in your arms not to use a cell phone or wireless tablet/computer near their body. Educate yourself about the times when radiation intensity is highest such as when streaming video, when traveling in a car or when the signal is poor. Minimize use of a phone under these conditions and talk to your children about why.

### 3. Invest in a Corded Landline at Home

Your children can make voice calls on a *corded* home phone. Remember, even cordless landline phones emit radiation *just like cell phones*. A cordless phone base is always on and transmitting, even when you are not making a call. Swap your cordless phone for a corded home phone. Forward cell phones to your home or office line when possible.

### 4. Airplane Mode On, Wi-Fi Off and Bluetooth Off Whenever Possible

Airplane mode with Wi-Fi OFF and Bluetooth OFF turns off the wireless antennas inside a device, stopping microwave transmissions. Every computer, laptop, tablet or wireless transmitting device has a function key or switch in the settings that disables the Wi-Fi transmitters, and one that disables Bluetooth as well. Whenever you intend to hand a child a Wi-Fi or Bluetooth enabled device, remember to turn on airplane mode, and to separately disable Wi-Fi and Bluetooth connections. Try to turn devices to these settings whenever possible, and teach your kids to do the same.

### 5. Connect Your Smartphone and Wireless Device with Cords

You can easily connect many phones, tablets and computers to the internet without microwave exposures. Most wireless devices have a USB, lightning or ethernet port so you can *plug it in* for wired internet access. Many devices can be hardwired to the internet by simply getting a few accessories and adapters. Whenever you purchase electronics, choose a device that connects with wires, not Wi-Fi.

### 6. Power Off When Not in Use

Remember: wireless devices continuously check in with their networks whenever they plugged in or turned on. You can easily decrease your family's first- and second-hand radiation exposure by turning off wireless networks and devices whenever you are not actively using them, such as while you sleep. Turning off wireless devices and their related gear—for example, printers, gaming, entertainment, and computer systems and accessories—when not in use by powering them off also saves significant energy and makes all around good sense. Plug these devices into a power switch so you can easily turn them off. This is often the first step people take as they work on swapping out wireless with corded connections.

### 7. Get Electronics Out of The Bedroom

Do not let your children use a cell phone or tablet in bed. Be aware that the blue **light from screens and wireless radiation can seriously impact our sleep**, so be sure to power off all screens and electronics at least an hour before bedtime. Many newer TVs, gaming systems, and computers also have wireless radiation emissions even if you are not using them, so it is best to remove them from the bedroom and completely disconnect them from their power source. Keep screens and electronics in family areas. *Instead of sleeping with your cell phone, get a battery-powered alarm clock for your nightstand. This removes the temptation to "quickly" check the phone.*

There have also been reports of fires from exploding electronics and charging cell phones. Teenagers will rest electronics on their bed, unaware that the soft cushions block airflow to the battery and cause the device to heat up. Be aware that chargers generate other types of electromagnetic fields that are also linked to health issues. Always charge cell phones and tech devices outside the bedroom, on a table or countertop.

### 8. Children Should Not Use Virtual Reality with Transmitting Smartphones

Children's brains are not fully myelinated and eyes absorb radiation readily due to their high water content. Placing a two-way microwave radiating device directly in front of young eyes is not recommended. Considering the myriad of safety risks that VR poses for children, consider entertainment alternatives like watching a great family movie on a non-wireless screen.

## RESOURCES ON REDUCING EXPOSURE

The American Academy of Pediatrics Letter In Support of The Cell Phone Right To Know

Doctor's Advice on Cell Phone Radiation: [English](#), [Spanish](#), [Greek](#), [Finnish](#), [Turkish](#), [Italian](#)

Postcard with American Academy of Pediatrics Recommendations, [English](#), [Spanish](#)

What Parents Need to Know About Wireless Radiation and How to Practice Safe Technology

BabySafe Project: "Reduce Your Wireless Exposure" [English Brochure](#), [Spanish Brochure](#)

[More Printable Resources](#) from Environmental Health Trust

New Jersey Education Association "[Minimize health risks from electronic devices](#)"

[Article](#), [PDF of Recommendations](#)

"[Practice Prevention A Quick Guide to Avoiding EMFs](#)" by Cindy Sage and Nancy Evans for the Collaborative on Health and the Environment EMF Working Group

C4ST Factsheets: [Wireless Safety Tips](#), [Presentation Reducing Exposure 101](#),

[Easy steps you can take to minimize your exposure](#)

# Epic Holiday Toy Recommendations

## Tried and True Gifts For Children

**Tickets** to a game, movie, music concert or play.

**Classic toys** such as yoyo, kite, play cash register, kaleidoscope, dominos, dartboard, juggling balls and magic sets.

**A bike and helmet, a go-kart, another ride-on toy.**

**Musical instruments** such as xylophone, egg shakers, tamborine, wooden flute, recorder, harmonica, guitar, keyboard or drum set.

**A cool battery-powered alarm clock.**

**Host a party** for your child to go out to a special dinner/movie/activity with friends.

**Personalized gifts** such as a photo of your child with their friends on a personalized mug or t-shirt.

**T-Shirt or cap** specially ordered with a saying/logo from their favorite sports team, musical, or band.

**Magazine subscription** on a subject that interests your child.

**A good old fashioned boom box with radio and MP3 player** (without Wi-Fi and without Bluetooth).

**Make a donation** to a cause they care about, a local food bank, or sponsor a animal.

**Do It Yourself (DIY) Kits and Theme Baskets** filled with something your child is interested in sparks your child's creativity.

- *Cake decorating, baking, building a birdhouse* — you can put together a DIY kit with items from grocery or hardware stores that will spark hours of creativity.
- *Baking DIY:* specially shaped cake pan and unique cookie cutters, cookbook, baking ingredients, personalized apron, and special serving plate.
- *Birdhouse DIY:* birdseed, birdhouse kit, binoculars, and bird identification book.
- *Dinosaur DIY:* book about dinosaurs, kit for assembling a dinosaur skeleton
- *Art Basket:* colored pencils with a sharpener, specialty markers, splurge on fancy colors like gold and silver, watercolor paints and brushes, drawing paper, art sketchpad and watercolor paper
- *Paper Craft, Origami Basket:* new scissors, specialty scissors, colorful decorated paper, cardstock paper, glue, glue sticks, origami paper, origami instruction book.
- *Gardening:* gardening book, gift certificate for seeds, containers and pots, or take it a step further with a salad table or wood for raised planting bed.

**Make a Photo Album** with pictures of family and friends they will cherish for years to come.

**Animal/Insect Identification Guides** are picture books that children love pouring over to identify all kinds of animals — from dogs to spiders to birds to dinosaurs.

**For Younger Children**, dolls, books, puzzles and building blocks are tried and true. They love small figures to play with in a dollhouse, fire station, castle or far away land. Consider dress-up clothes or a doctor kit. Children play for hours inside a pop-up play tent, house or car. Less is more and the simpler the toy, the more the child can imagine. There's no need for a toy to have a built-in voice or Smartphone/Bluetooth connection, because children will imagine the back and forth conversation.



# MEDICAL RECOMMENDATIONS ON CELL PHONES AND WIRELESS

## Compilation of US & Recent International Guidance

### International EMF Scientist Appeal

In 2015, the [International EMF Scientist Appeal](#), now signed by over 225 scientists from 41 nations, including the USA, was submitted to the United Nations, World Health Organization and U.N. Member Nations urging the development of more protective guidelines for EMF encouraging precautionary measures, and calling for education of the public about health risks, particularly risks to children and fetal development.

### The American Academy of Pediatrics Recommendations To Families About Cell Phones

AAP Healthy Child.org Webpages: [Cell Phones](#), [Cell Towers](#), [Press Release AAP Letter in Support of the Cell Phone Right to Know Federal Legislation](#)  
[AAP Policy: Media Use by Children Under 2 Years](#)  
[AAP Policy: Children, Adolescents & the Media](#)

- Avoid carrying your phone against the body like in a pocket, sock, or bra. Cell phone manufacturers can't guarantee that the amount of radiation you're absorbing will be at a safe level.
- When talking on the cell phone, try holding it an inch or more away from your head.
- Use text messaging when possible, and use cell phones in speaker mode or with the use of hands-free kits.
- Make only short or essential calls on cell phones.
- If you plan to watch a movie on your device, download it first, then switch to airplane mode while you watch in order to avoid unnecessary radiation exposure.
- Avoid making calls in cars, elevators, trains, and buses. The cell phone works harder to get a signal through metal, so the power level increases.
- Remember that cell phones are not toys or teething items.

### California Department of Health Guidelines on How to Reduce Exposure to Radiofrequency Energy from Cell Phones

[Press Release](#), [PDF of Cell Phone Guidance 12/2017](#)

"Laboratory experiments and human health studies have suggested the possibility that long-term, high use of cell phones may be linked to certain types of cancer and other health effects, including: brain cancer and tumors of the acoustic nerve and salivary glands, lowered sperm quality and inactive or less mobile sperm, headaches and effects on learning and memory, hearing, behavior and sleep."

"What about children? Children may be more at risk for harm from exposure to RF energy because: RF energy can reach a larger area of a child's brain than an adults brain. A child's brain and body grow and develop through the teen years. During this time, the body may be more easily affected by RF energy and the effect maybe more harmful and long lasting."

### Cyprus Medical Association, Vienna Austrian Medical Chamber & Cyprus National Committee on Environment and Children's Health signed the Nicosia Declaration in 2017 with 16 practical recommendations which include:

- Children and teenagers under the 16 should carry mobile phones for emergencies only.  
Internet access via a hardwired connection such as a LAN does not emit
- radiation. It is fast and secure. Constantly radiating DECT cordless phones, Wi-Fi access points, data sticks, and LTE modems should be avoided!

### INTERNATIONAL

[Cyprus Medical Association](#)  
[Athens Medical Association](#)  
[Vienna Medical Association](#)  
[Child and Youth Service Geneva Switzerland](#)  
[Bioinitiative Working Group 2012](#)  
[EMF Scientist Appeal](#)

### WATCH

[CNN Sanjay Gupta](#)  
[PBS Investigates Cell Phone Safety: Part 1](#)  
[PBS Investigates Cell Phone Safety: Part 2](#)  
[CBC Report](#)  
[ABC Catalyst Documentary](#)  
[The Today Show](#)  
[Canada AM](#)

### READ

[Consumer Reports](#)  
[American Academy of Pediatrics](#)  
[Maryland State Children's Environmental Protection Council](#)  
[Connecticut Department of Health](#)  
[The California Medical Association](#)  
[Santa Clara Medical Bulletin Article](#)  
[Dr. Martha Herbert](#)  
[Dr. Lennart Hardell](#)  
[Dr. Martin Pall](#)  
[Doctors Letters on Wi-Fi](#)  
[Medical Recommendations](#)

### FACTSHEETS & PRINTABLES

[Doctor's Advice on Cell Phone Radiation: English, Spanish, Greek, Finnish, Turkish, Italian](#)  
EHT FactSheets:  
[What Parents Need to Know About Wireless Radiation](#)  
American Academy of Pediatrics Recommendation  
[Protect The Ones You Love Card: English, Spanish](#)  
C4ST Factsheets:  
[Wireless Safety Tips](#)  
[Presentation Reducing Exposure 101](#)  
[Easy steps you can take to minimize your exposure](#)  
[BabySafe Project for Pregnant Women: "Reduce Your Wireless Exposure" English Brochure, Spanish Brochure](#)  
New Jersey Education Association:  
["Minimize health risks from electronic devices" Article, PDF of Recommendations](#)