

There is a worldwide industry trading on people's fears of electromagnetic fields (EMFs), by selling products offering protection from 'bad' radiation. Such products claim to work, for example, by resonating with your 'biofield', creating a shield against radiation or dissipating radiation.

When we talked to scientists and engineers, what they told us over and over was that EMFs from mobile phones, masts and Wi-Fi have not been shown to be bad for your health and these products are unnecessary. They objected to the way many of the websites selling these products not only exploited people's fears to make money but also exacerbate them by saying things like "deadly cancer causing radiation" or by preying on a mother's worry for her baby by specifically targeting the product to pregnant women.

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We got some scientists to have a look through a few of these products and here they explain what the problems with the claims are.

"The company that produces the Q-link pendants claims to have sold over 1,000,000 worldwide, so with prices varying between about US\$100 and \$1000 we're talking between 100million to 1billion dollar industry." *Dr Eric de Silva*

Claims made by these 'protective' products	Scientists' responses
<p>SAR Shield (antenna clip or sticker for mobile phone) – C\$19.99</p>	
<ul style="list-style-type: none"> • "Electromagnetic radiation EMF has been proven to be harmful". • " Safety is accomplished by dissipating deadly cancer causing electromagnetic radiation by up to 89%". • "This is achieved by attracting the radiation to the shield and then releasing it and re-attracting it and releasing it, basically making it bounce around the shield". • "SAR Shield does not cause noticeable reduction in signal strength".  <p>Source: www.sarshield.com</p>	 <p>For a mobile phone to communicate, it has to radiate signals to the nearest base station. If it could work adequately with its radiation reduced by 89% it already would. This reduction is claimed to not only protect the user of the phone, but also "anyone standing nearby" which can only mean that it absorbs the radiation in all directions from the phone. So it must cause a noticeable reduction in signal if 89% of the radiation from your phone is dissipated (although the claims are contradictory as it then says the radiation is released after 'bouncing' it). Even if only the outgoing signal is affected and the user of the shield can hear ok, it would be the person to whom you are talking to who would notice the difference.</p> <p><i>Professor Anthony Davies, electronic engineer</i></p>
<ul style="list-style-type: none"> • "The technology used in the SAR Shield is comparable to the electro-physical principles that make US Air force Stealth aircraft invisible to radar systems". <p>Source: www.sarshield.com</p>	 <p>A major aspect of the technology used in stealth aircraft is having a shape that causes incoming radar signals to bounce off at an angle. SAR shield claims to dissipate the radiation rather than reflect it, which is quite different and makes the comparison irrelevant. <i>Professor Anthony Davies, electronic engineer</i></p>

Aegis washing powder – US\$45 for 1lb

- AegisGuard™ Radiation Shields “deflect, or reflect, radiation away from the body”. “This technique is referred to as the Law of Reflection”.
- AegisGuard™ washing powder shields the wearer from “up to 99.998% of the airborne radiation emitted by wired and wireless electronic products with operating frequencies between 5 Hz to 30 GHz”.



Source: www.goaegis.com/aegisguard_ll_radiation_shields.html



Many of the claims made in their literature are hard to follow and often contradictory. Semi-random bits of science (e.g. the Law of Reflection) are cobbled together in a manner that bamboozles readers into believing that there is something important behind this. There is to my knowledge no material that can ‘reflect’ electromagnetic radiation across such a wide range of frequencies.

Dr Andrea Sella, chemical scientist.

Mesh clothing – eg. headnets (£27) and “mummywrap” (US\$79.95)



- “Ideal for microwave protection outside the house”.
- “The silver bobbinet material is woven using silvered strands and nylon strands of yarn”.
- “Protection from before conception will give your baby the best chance in life from the very moment his or her life begins”.



Source: www.emfields.org and www.mummywraps.com



Headnets, protective mesh clothing, carbon paint, canopies for beds, films for the window... all these try to imitate a Faraday cage – a continuous cage of metal that stops some EM radiation from coming through. For a Faraday cage to work it needs to completely surround you and have no large gaps, unlike these products, so most of these products will have limited efficacy in keeping out radiation and none when it comes to static magnetic fields.

Dr Stephen Keevil, medical physicist.



The netting could provide protection from mosquitoes, etc. for which the silver wire is unnecessary and simply adds to the cost. *Professor Anthony Davies, electronic engineer.*



Generating fear and anxiety can have pervasive effects on psychological and physical wellbeing. This claim is particularly damaging because it implies that the unborn child is surrounded by constant danger that can only be controlled by use of this product. Are we to assume that women are somehow bad mothers unless they use it? As often is the case, no data is presented to support the claim. *Professor Elaine Fox, psychologist.*

Q-link pendant – US\$99.95 to US\$999

- “The Q-Link contains no power source of its own and works like a tuning fork, resonating with and strengthening the life-enhancing information already present within the biofield”.
- “Strengthens immunities to cell phones, computers, and other electromagnetic Fields (EMF)”, achieved by working through the “Sympathetic Resonance Technology”.
- “Clarus Technology Inc has pioneered a technology that allows these subtle energy fields to be focused and converted from their multi-dimensional force fields into our 3-dimensions”.



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Source: www.q-linkproducts.com and www.qlink.tv/qlink-about-qlink.htm



The device has no power source and comprises of components that connect to nothing else. It also claims to interact with something that has no physical basis (the ‘biofield’) and to tap into multiple dimensions, using a technology (Sympathetic Resonance Technology) which is virtually unheard of and for which there is absolutely no serious evidence.

Dr Eric de Silva, physicist.

“If you feel that websites are deliberately using scary language to make you feel nervous about EMFs, and so buy their products, the alternative is to not to buy them and save your money.”

Dr Mark Miodownik



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Making Sense of Radiation – A guide to radiation and its health effects

There Goes The Science Bit... A guide to standing up for science for early career researchers

Both are available from www.senseaboutscience.org

●●● This note is collated by Dr Leonor Sierra with kind assistance from Sense About Science advisors. Additional research by Jennifer Lardge and Alice Blachford. September 2008

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