

Table 2. Comparison of Specific Absorption Rates of Mobile Phones

| Manufactures | Model | Specific absorption rate (W/kg) |
|--------------|----------|---------------------------------|
| Ericsson | T18s | 0.6 |
| | T28s | 1.49 |
| | A1288s | 0.795 |
| | SH888 | 0.42 |
| Nokia | 6250 | 0.69 |
| | 6210 | 1.19 |
| | 3210 | 1.14 |
| | 3310 | 0.75 |
| | 7710 | 0.76 |
| | 8110 | 0.73 |
| | 8210 | 0.72 |
| | 8810 | 0.22 |
| | 8850 | 0.22 |
| | Motorola | V2188 |
| V2288 | | 0.54 |
| V3688 | | 0.02 |
| T2288 | | 0.54 |
| T2688 | | 0.54 |
| P7689 | | 1.00 |
| LF2000 | | 0.79 |
| Panasonic | GD52 | 0.98 |
| | GD90 | 1.07 |
| | GD92 | 1.07 |
| | GD93 | 1.07 |
| Siemens | 3508i | 0.99 |
| | 3518i | 0.99 |
| | 3568i | 1.14 |
| Philips | SAVY | 1.11 |
| | GENIE | 1.05 |

Data from: <http://home.kimo.com.tw/bluefuler/gn/pt1.gif>

Last year, the World Health Organization (WHO) announced that they were conducting a study focusing on the EMF range of 300 Hz to 300 GHz, and especially effects of mobile phones on users health. The US FCC has set standards for mobile phone usage and the establishment of base stations. In order to decrease the possible hazards of EMF, the FCC set standards

that the power densities of base stations of around 900 and 1800 MHz should be lower than 0.6 and 1.2 mW/cm², respectively. The Environmental Protection Agency (EPA) in Taiwan has set up more-stringent standards (Table 1). The specific absorption rate (SAR) of different types of mobile phones is presented in Table 2. None of these was found to exceed safety standards.

From this literature review, we come up with the following conclusions:

1. There is no definite epidemiological evidence supporting the usage of mobile phones itself causing significant adverse biological effects on human beings.
2. *In vitro* studies show that the electromagnetic waves of mobile phones might change some mRNA expression.
3. Depending on the type of pacemaker, mobile phones have different influences on implanted pacemakers, which might put some patients at great risk. Whereas only a few affected cases have been reported so far, patients with implanted pacemakers should avoid mobile phones, and the use of mobile phones near electrical medical devices should be restricted.
4. Using mobile phones during driving is associated with an increased risk of traffic accidents, and therefore such a behavior should be prohibited.
5. There is no definite epidemiological evidence supporting significant adverse health effects of mobile phone base stations. The standards for mobile phone base stations in Taiwan are more stringent than those in many other countries.

So far, the greatest realistic health effect concern of mobile phone use is the increased risk of traffic accidents associated with usage during driving. We should note that, however, the usage of mobile phones has a relatively short history, and therefore it is too early to draw conclusions on its chronic, including the carcinogenic, effects. We should conduct long-term epidemiological studies to address this issue. In the meantime, attention should be moved away from unnecessary and irrational worries onto actual dangers