

## National audit

Radio waves above a certain level can cause heating effects to the body. International guidelines have been set to keep exposure to radio waves below that level.

Mobile phone network operators in the UK have agreed to comply with these international guidelines. Exposure to radio wave emissions from base stations has been calculated to be thousands of times lower than the maximum levels stipulated by the guidelines.

Some independent measurements have already been made which show compliance. However, starting from Autumn 2000, a comprehensive audit of base stations is being carried out by the Radiocommunications Agency. Base stations will be measured to confirm their compliance with guidelines on emission levels, and the results will be freely available from the Agency (see Information). The audit begins with base stations on school premises.

## Information

- Radiocommunications Agency (RA)  
website: [www.radio.gov.uk](http://www.radio.gov.uk)
- RA Audit website:  
[www.radio.gov.uk/document/ra\\_info/ra377.htm](http://www.radio.gov.uk/document/ra_info/ra377.htm)
- Department of Health  
website: [www.doh.gov.uk/mobile.htm](http://www.doh.gov.uk/mobile.htm)
- report of the Stewart Group  
website: [www.iegmp.org.uk](http://www.iegmp.org.uk)
- Department for Education and Employment  
website: [www.dfes.gov.uk/a-z/mobilephones.html](http://www.dfes.gov.uk/a-z/mobilephones.html)
- National Radiological Protection Board (NRPB)  
website: [www.nrp.gov.uk](http://www.nrp.gov.uk)

or write to: NRPB, Chilton, Didcot, OX11 0RQ

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# Mobile phone Base stations and Health



Over half the people in Britain have mobile phones. In a wide variety of settings - at work, at home, out and about, for convenience and security - they have become part of our way of life.

## Base stations and “cells”

Base stations are radio transmitters and receivers which form an essential link in mobile phone communications. They have antennas, mounted either on freestanding masts or on existing structures and buildings, which use radio signals similar to those used in TV and radio broadcasting. Calls pass through these antennas as people use mobile phones within their areas of coverage - their “cells”.

Cells usually have a radius of several kilometres. However, more base stations are needed where mobile phone usage is high. So, in rural areas cells can have a radius of 10 km, while in towns and cities their radius may be less than a few hundred metres. They overlap at the edges to ensure that mobile phone users remain within range of a base station.

Without sufficient base stations in the right locations, mobile phones will not work. But concerns about health are sometimes expressed by people who live or work close to where they are sited.

## Independent assessment and research

A group of independent experts led by Sir William Stewart has investigated possible health effects posed by mobile phone technology including base stations, on behalf of the Government. The group looked at recent research, took evidence from scientists, and listened to the views of the public at open meetings around the UK. Their report was published in May 2000.

Their conclusion was that:

*“The balance of evidence indicates that there is no general risk to the health of people living near base stations, on the basis that exposures are expected to be small fractions of guidelines”.*

Gaps in scientific knowledge led the Stewart Group to recommend a precautionary approach to the use of mobile phones and base stations until more research findings become available. They added that in some cases people’s well-being may be adversely affected by insensitive siting of base stations.

Further research is now being set up to keep pace with developments in mobile phone technology. (See companion leaflet, *Mobile Phones and Health*)

## Base stations on or near schools

Although the exposure from base stations will be many times lower than from using a mobile phone, the Stewart Group acknowledged that there was some public concern about base stations located on or near schools. The pattern of radio waves emitted from a base station is generally even, but there is a zone within each cell where the concentration of waves will be slightly higher (see illustration). The base station operator will be able to provide information about the pattern of radio wave emissions if a school or parents are concerned about the possibility that this zone includes a school or any part of its grounds.



Within the overall distribution of radio waves from a base station across its cell, there is a zone where the concentration is higher than elsewhere.

At ground level, this zone is usually some distance from the base station. The radio waves within it are still far below the levels for safety specified in international guidelines.