



MTHR

Mobile Telecommunications and Health Research

The Mobile Telecommunications and Health Research Programme (MTHR)

Professor Lawrie Challis



Mobile Telecommunications & Health Research Programme

- Funded jointly by Government and Industry
 - £7.4 million
- Launched February 2001
- Calls for proposals
 - First February 2001
 - Second December 2001
 - Third December 2002
- First projects started in Dec 2001



Mobile Telecommunications & Health Research Programme

- Also selected and manages 5+1? projects funded by
 - DTI (3)
 - Home Office-TETRA (2+1?)

NB These projects are included in the total numbers



Programme Management Committee

Chairman: Prof L J Challis

Prof L W Barclay
(Prof C Blakemore)

Prof G Breakwell

Prof C Chilvers

Prof P Elliott

(Dr S Gerrard)

Prof E Grant

Dr P Haggard

Prof N Kuster

Dr A F McKinlay

Prof J Metcalfe

Prof K H Mild

Dr M Repacholi

(Prof M Rugg)

Dr Z J Sienkiewicz

(Formerly chaired by Sir William Stewart)



The Home Office Programme on TETRA

- TETRA-police (other emergency services?)
- Research programme on health funded by government (Home Office)
- Approximately £10 million
- Plus £600,000 contribution to MTHR programme



International Position

Country	Budget (millions)
Australia (annual)	0.7 \$ (aust)
European Union (1999-2002)	12.9 €
Finland (2000-2003)	2.4 €
France (1999-2002)	2.0 €
Germany (2002-2005)	21.5 €
Japan (2000-2001)	5.2 \$ (US)
Norway (2002-2005)	2.2 €
United Kingdom (2002-2005)	18 £
United States (2002)	5.0 \$ (US)



MTHR Projects (22+3?)

Epidemiology (5)

Human volunteer Studies (6+1?)

Mechanistic (3)

Exposure and dosimetry (8+1?)

Psycho/Social Studies (1?)



Epidemiology (5)



Emphasis on Cancer Handsets

- 2 case studies of brain tumours - part of the international Interphone Study
- Pilot for cohort study of mobile phone users (finished)
- Large case study of leukaemia patients

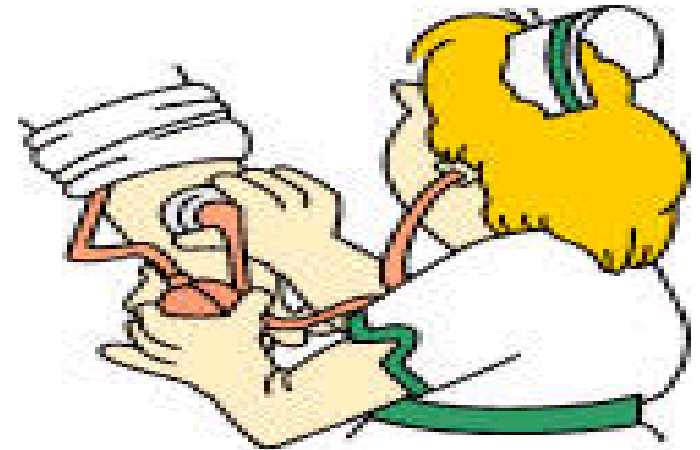
Base Stations

- Case study of cancers in early childhood



Human Volunteer Studies (6+1?)

- Blood pressure (GSM +TETRA)
- Memory and Attention
- Labyrinthine function (hypersensitivity?)
- “Unpleasant Symptoms” (headaches, nausea etc- hypersensitivity?)
- Electrical activity of brain (TETRA)



NB -standard exposure handsets have been developed for this programme



Human Volunteer Studies (6+1?) cont.



- Conversations in Cars (finished)
- Effects of masts (?)



Why are Most of the Projects on Phones when the Greater Public Concern is on Masts?

Human volunteer studies

- Reasonable to assume that the chances of seeing biological effects will increase with exposure
- Exposure from a phone is typically between a thousand and a million times greater than that from a mast



Why are Most of the Projects on Phones when the Greater Public Concern is on Masts?

Epidemiological Studies

- Not possible at present to make a sufficiently precise determination of the average exposure from masts
- Receive exposure in the home, at work, leisure activities etc (plus mobile phones)
- Exposures can vary by as much as 10 from room to room
- Receive comparable exposures from FM radio and TV transmitters



Why are Most of the Projects on Phones when the Greater Public Concern is on Masts?

Epidemiological Studies

- Latency period. In adults, disease e.g. cancer, probably initiated 5-10 years before symptoms appear
- So need to know the exposure from masts 5-10 years ago.
- Difficulties less in young children (0-4), less mobile, don't use mobile phones, latency period less.



Mechanistic Studies (3)

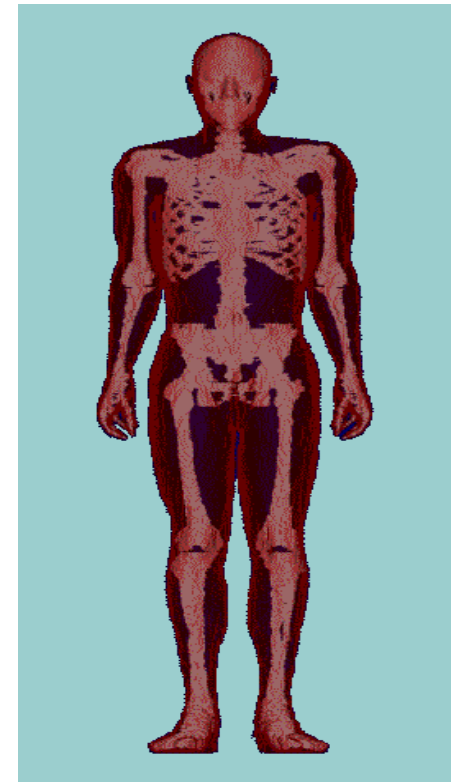


- Expression of Heat Shock Protein- studies of nematode worms
- Brain physiology and function -studies of signalling in mice
- Studies of calcium signalling in various cell types



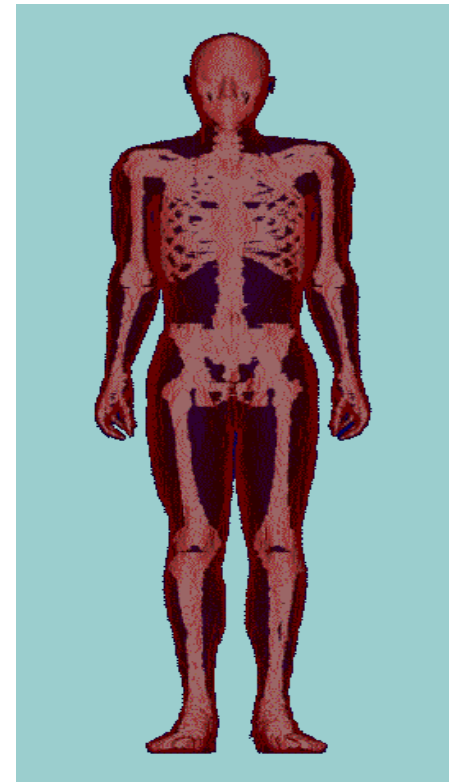
Exposure and Dosimetry (8+1?)

- Measurements of electrical properties (age dependence)
- Non-linearity of electrical properties? (effects of pulsing) (?)
- Exposure from emerging technologies (3G etc)
- Magnetic fields from phones (finished)



Exposure and Dosimetry (8+1?)

- Exposure from TETRA handsets (finished)
- Hands free kits
- International dosimetry project
- Emission from microcell base stations
- Dosimetry support for other projects



Psycho/Social Studies (1?)

- The impact of adopting precautionary approaches to the management of mobile phone risks on the risk perception and behaviour of groups and/or individuals
- The evaluation of efforts to communicate information about mobile phone risks



New Project-Cohort Study??

- Cohort study of mobile phone users - UK and Sweden.
- Successful pilot study funded by MTHR. Full proposal refereed, given high priority by MTHR.
- MTHR does not have the money to fund it. Some UK funding probable. Exploring funding from Sweden.
- Interested in collaborating with other national and international funding agencies



The Home Office Programme on TETRA

- Cellular studies
 - Intracellular efflux
 - Electrophysiology of the brain
 - Epileptiform activity of the brain
- Cognitive performance
- Dosimetry
- Health monitoring study (100,000 police for 15 years)



Summary

- Four of the projects have been completed and many of the others will finish by the end of next year (2004).
- The work will make a major contribution to our knowledge and understanding in this area.
- Even if no evidence for adverse health effects is found, it will still not be possible to say the technology is “safe”.
- It should however serve to reduce public concern.

