General EMF and Health Research in China (1994-2006)

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It is controversial in EMF biological effects. The EMF standards or regulations are quite different in nations and areas due to different EMF risk assessment. Recent EMF studies showed that EMF may damage DNA by lower RF intensity of 0.3W/kg (REFLEX), and that interphone may result in high risk of brain tumor (WHO, 13 nation investigation).

In order to gain more information in EMF biological effects, I searched the CNKI databank for Chinese papers in EMF study (1994-2006). Electromagnetic fields, electromagnetic radiation, power frequency, radio frequency, and microwave were used as key words. There are 383 papers in EMF biological effects in the databank, not including papers in EMF medical treatment, EMF prevention, EMF regulation, environmental EMF exposure assessment, and some papers with PLA secret information. Among the 383 papers, there are 109 epidemiological studies focusing on neurasthenia, ECG, reproduction, immune function, sleep, blood cells, and lens opacity, subjects of

these epidemiological studies are EMF professional staffs in controlled conditions. No matter what the exposure level may be, lower or higher than EMF exposure limits for public, health effects had been reported in these papers (only 1 paper report none health effects)such as neurasthenia, abnormal ECG, disorder of immunoglobulin, bad sleep, sperm dysfunction or abortion. In the 109 epidemiological papers, 32 papers with exposure that are higher than EMF exposure limits for public in China, and the other 77 papers with exposure intensity that are lower than the public EMF exposure limits in China (See table 1).

As above mentioned, EMF health effects need further study, especially of standardized epidemiology. EMF risk assessment and risk communication should be promoted to gain better awareness of EMF effects and to reduce the panic and boycott of the public to EMF infrastructural constructions, such as base station and power lines, etc.

Table 1 Summary of EMF Studies in China (1994-2006)

PY	Papers	Epidemiological Papers		
		In all	Exposure level lower than EMF limits for public	Exposure level higher than EMF limits for public
1994	21	12	6	6
1995	24	13	12	1
1996	29	12	9	3
1997	13	9	6	3
1998	10	3	2	1
1999	20	5	2	3
2000	16	11	9	2
2001	17	7	4	3
2002	17	4	3	1
2003	29	6	4	2
2004	36	9	6	3
2005	87	10	8	2
2006	64	8	6	2
total	383	109	77	32