

Bijlage 3.1. Het “Reflex project” (2000-2004)

Prof. Adlkofer coördineerde het “Reflex” onderzoeksprogramma, gefinancierd door de Europese Unie, uitgevoerd tussen 2000 en 2004, waarbij twaalf laboratoria uit zeven landen deelnamen, waaronder universiteiten in Bordeaux, Milaan, Wenen, Hannover, en Berlijn.

Onderzocht werd het effect van EMF op onze genen (DNA). Hieruit kwam o.a. naar voren dat DNA breuken plaatsvinden afhankelijk van de opwarming van weefsel (SAR waarde). Er werd een [verdubbeling van DNA breuken](#) geconstateerd bij een SAR waarde van 1,3 W/kg. (vergelijkbaar met een mobieltje). En wat bleek was dat DNA beschadiging reeds optreedt bij 1/40-ste van de SAR drempel (de officiële limiet). Die afwijkingen worden (binnen de cel) meestal gerepareerd maar soms ook niet, waardoor beschadigde cellen zich vermenigvuldigen. Met als gevolg kanker. De conclusie was dat straling - ver beneden de toegestane limiet de chromosomen kan beschadigen.

Publicaties :

- "Radiofrequency electromagnetic fields (UMTS, 1,950 MHz) induce genotoxic effects in vitro in human fibroblasts but not in lymphocytes"
C. Schwarz, F. Adlkofer, and coll. Int Arch Occup Environ Health, 2008 feb.
- "Non-thermal DNA Breakage by Mobile-phone Radiation (1800 MHz) in Human Fibroblasts and in Transformed GFSH-R17 Rat Granulose Cells In Vitro"
F. Adlkofer and coll. Mutation Res 2005. 583:178-183.
- "Risk evaluation of potential environmental hazards from low frequency electromagnetic field exposure using sensitive in vitro methods"
Reflex European Union Project QLK4-CT-1999-01574, Final Report. 2004

Bijlage 3.2: Onderzoek naar hersentumoren bij straling door mobiele telefoons

- * 1. Aydin D, Feychting M, Schüz J. Mobile phone use and brain tumors in children and adolescents: a multicenter case-control study. J Natl Cancer Inst.
- * 2. Benson VS, Pirie K, Schüz J. Million women study collaborators. Mobile phone use and risk of brain neoplasms and other cancers: prospective study. Int J Epidemiol. 2013;42(3):792-802.
- * 3. Boice Jr JD, Tarone RE. Cell phones, cancer, and children. J Natl Cancer Inst. 2011;103(16):1211-3.
- * 4. Cardis E, Armstrong BK, Bowman JD. Risk of brain tumours in relation to estimated RF dose from mobile phones: results from five countries. Occup Environ Med. 2009;68(9):631-40.
- * 5. Cardis E, Varsier N, Bowman JD. Estimation of RF energy absorbed in the brain from mobile phones in the interphone study. Occup Environ Med. 2011;68(9):686-93.
- * 6. Cardis E, Richardson L, Deltour I. The INTERPHONE study: design, epidemiological methods, and description of the study population. Eur J Epidemiol. 2007;22(9):647-64.
- * 7. Carlberg M, Söderqvist F, Hansson Mild K, Hardell L. Meningioma patients diagnosed 2007-2009 and the association with use of mobile and cordless phones: a case-control study. Environ Health. 2013;12(1):60.
- * 8. Carlberg M, Hardell L. Decreased survival of glioma patients with astrocytoma grade IV (glioblastoma multiforme) associated with long-term use of mobile and cordless phones. Int J Environ Res Public Health. 2014;11(10):10790-805.
- * 9. Deltour I, Johansen C, Auvinen A. Time trends in brain tumor incidence rates in Denmark, Finland, Norway, and Sweden, 1974-2003. J Natl Cancer Inst. 2009;101(24):1721-4.

- * 10. Elliott P, Toledano MB, Bennett J. Mobile phone base stations and early childhood cancers: case-control study. *BMJ*. 2010;340:c3077.
- * 11. Frei P, Poulsen AH, Johansen C. Use of mobile phones and risk of brain tumours: update of Danish cohort study. *BMJ*. 2011;343:d6387.
- * 12. Hardell L, Carlberg M, Söderqvist F, Mild KH. Case-control study of the association between malignant brain tumours diagnosed between 2007 and 2009 and mobile and cordless phone use. *Int J Oncol*. 2013;43(6):1833-45.
- * 13. Hardell L, Carlberg M, Söderqvist F. Long-term use of cellular phones and brain tumours: increased risk associated with use for ≥ 10 years. *Occup Environ Med*. 2007;64(9):626-32.
- * 14. Hepworth SJ, Schoemaker MJ, Muir KR. Mobile phone use and risk of glioma in adults: case-control study. *BMJ*. 2006;332(7546):883-7.
- * 15. Inskip PD, Hoover RN, Devesa SS. Brain cancer incidence trends in relation to cellular telephone use in the United States. *Neuro Oncol*. 2010;12(11):1147-51.
- * 16. INTERPHONE Study Group. Brain tumour risk in relation to mobile telephone use: results of the INTERPHONE international case-control study. *Int J Epidemiol*. 2010;39(3):675-94.
- * 17. Kundi M. The controversy about a possible relationship between mobile phone use and cancer. *Environ Health Perspect*. 2009;117(3):316-24.
- * 18. Larjavaara S, Schüz J, Swerdlow A. Location of gliomas in relation to mobile telephone use: a case-case and case-specular analysis. *Am J Epidemiol*. 2011;174(1):2-11.
- * 19. Levis AG, Minicuci N, Ricci P. Mobile phones and head tumours. The discrepancies in cause-effect relationships in the epidemiological studies? *Environ Health*. 2011;10:59.
- * 20. Little MP, Rajaraman P, Inskip PD, Check DP, Linet MS. Mobile phone use and glioma risk: comparison of epidemiological study results ...in the United States. *BMJ*. 2012;344:e1147.
- * 21. Liu YX, Li GQ, Fu XP. Exposure to 3G mobile phone signals does not affect the biological features of brain tumor cells. *BMC Public Health*. 2015;15:764.
- * 22. Lönn S. Mobile phone use and risk of intracranial tumors [doctoral thesis]. Stockholm: Karolinska Institutet; 2004.
- * 23. Mild KH, Hardell L, Carlberg M. Pooled analysis of two Swedish case-control studies on the use of mobile and cordless telephones and the risk of brain tumours diagnosed during 1997-2003. *Int J Occup Saf Ergon*. 2007;13(1):63-71.
- * 24. Peres J. WHO classification sparks debate over cell phone safety. *J Natl Cancer Inst*. 2011;103(15):1146-7.
- * 25. Feltbower RG, Fleming SJ. UK case control study of brain tumours in children, teenagers and young adults: a pilot study. *BMC Res Notes*. 2014;7:14.
- * 26. Schüz J, Jacobsen R, Olsen JH. Cellular telephone use and cancer risk: update of a nationwide Danish cohort. *J Natl Cancer Inst*. 2006;98(23):1707-13.
- * 27. Schüz J, Böhler E, Berg G. Cellular phones, cordless phones, and the risks of glioma and meningioma (interphone study group, Germany). *Am J Epidemiol*. 2006;163(6):512-20.
- * 28. Söderqvist F, Carlberg M, Hansson Mild K, Hardell L. Childhood brain tumour risk and its association with wireless phones: a commentary. *Environ Health*. 2011;10:106.
- * 29. Takebayashi T, Akiba S, Kikuchi Y. Mobile phone use and acoustic neuroma risk in Japan. *Occup Environ Med*. 2006;63:802-7.
- * 30. Takebayashi T, Varsier N, Kikuchi Y. Mobile phone use, exposure to radiofrequency electromagnetic field, and brain tumour: a case-control study. *Br J Cancer*. 2008;98(3):652-9.
- * 31. Zhao TY, Zou SP, Knapp PE. Exposure to cell phone radiation up-regulates apoptosis genes in primary cultures of neurons and astrocytes. *Neurosci Lett*. 2007;412(1):34-8.

<https://cnjournal.biomedcentral.com/articles/cas-redirect/1%3ACAS%3A528%3ADC%252BD2sXisVGhsg%253D%253D>

