

The case against microwaving

Although microwave ovens are fast, convenient and energy efficient, many people wonder if food heated or cooked in a microwave is safe to eat. The Internet is full of articles informing us about the dangers of eating microwaved food, but few of these articles reference properly traceable research. Wading through oceans of anti-microwave rhetoric (I never was much good at surfing) I found only four referenced scientific papers relating to the dangers of microwaved food.

(i) Dr. Hans U. Hertel

The first and most serious of the anti-microwave sources was a research paper written by the Swiss food scientist Dr. Hans Hertel and Professor Bernard Blanc, a biochemical engineer.⁵²⁴ It concluded, *'The measurable effects on human beings of food treated with microwaves, as opposed to food not so treated, include changes in the blood which appear to indicate the initial stage of a pathological process such as occurs at the start of a cancerous condition.'*

This is the paper which describes the effects of microwaved food on eight volunteers (one of whom was Dr. Hertel himself), and which is said to have been published by Raum and Zelt.

Hertel submitted the paper to the Journal Franz Weber for publication in issue no. 19 dated January to March 1992. Its editor wrote an alarmist article headed, *'The danger of microwaves: scientific proof'*, complete with a picture on the front cover of the Grim Reaper pointing to a microwave oven. The article was followed by the research paper.

The Swiss Association of Manufacturers and Suppliers of Household Electrical Appliances took the editor and Dr. Hertel to court in Switzerland, seeking an injunction forbidding either of them to state that scientific research proves that food which has been exposed to radiation in a microwave oven is a hazard to health. The court approved the injunction, but Dr. Hertel eventually took the matter to the European Court of Human Rights, on the grounds that it unjustly violated his right to freedom of expression. Here the judges decided in favour of Dr. Hertel by a split decision of six to three. They did not make any judgement as to whether microwaved food was hazardous to health.

What the popular websites don't report is that during the court proceedings Dr. Hertel's fellow researcher Professor Blanc stated, *'I totally dissociate myself from the presentation and interpretation of the preliminary exploratory experiment carried out in 1989, which was published without my consent by the co-author of the study in the journal cited above. The results obtained do not in any circumstances justify drawing any conclusions as to the harmful effects of food treated with microwaves or a predisposition to the appearance of a given pathological condition.'*

Professor M. Teuber of the Food Research Institute of the Zürich Federal Institute of Technology provided an independent opinion on behalf of the appliance manufacturers. This was the only peer review that Blanc and Hertel's paper ever received. Teuber concluded, *'Blanc and Hertel's experiments ...were not conducted and described according to*

⁵²⁴ Blanc B H & Hertel H U. *Vergleichende Untersuchungen über die Beeinflussung des Menschen durch konventionell und im Mikrowellenofen aufbereitete Nahrung* ('Comparative study of the effects on human beings of food prepared by conventional means and in microwave ovens') June 1991.

scientifically recognized criteria. They are of no scientific value; the conclusions drawn from them as to the alleged harmfulness of food cooked by microwaves have no verifiable basis and are unsustainable.'

Finally, one reason that the Court of Human Rights finally found in favour of Dr. Hertel was that his research paper did *not* claim that microwaved food was harmful. The judgement read, '*Although it is stated that the results "show changes which bear witness to pathogenic disorders"...there is no assertion that the consumption of irradiated food is harmful for man...but merely a suggestion that it "might" be.*' It was the editor of the Journal Franz Weber who asserted that microwaved food was harmful. He was not a scientist, neither was his journal a scientific journal.

Therefore it is completely false to claim that Dr. Hertel proved that eating microwaved food is harmful.

All these facts were fully recorded by the European Court of Human Rights, and at the time of writing they were available online.⁵²⁵

(ii) Lubec's paper in The Lancet

A second oft-quoted source is a research paper called *Aminoacid Isomerisation and Microwave Exposure*.⁵²⁶ It was published in *The Lancet* in 1989, and it is the paper that is widely but incorrectly attributed to a Dr. Lita Lee. It reported that proteins in microwave-

⁵²⁵ [http://hudoc.echr.coe.int/sites/eng/pages/search.aspx?i=001-59366#{%22itemid%22:\[%22001-59366%22\]}](http://hudoc.echr.coe.int/sites/eng/pages/search.aspx?i=001-59366#{%22itemid%22:[%22001-59366%22]})

⁵²⁶ Lubec G et al. *Aminoacid Isomerisation and Microwave Exposure*. *The Lancet*, December 1989; Vol. 334, Issue 8676:1392–1393.