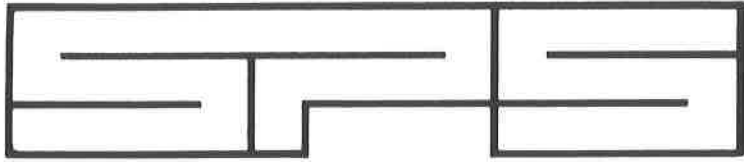


1994



FOR OFFICE USE:

ABSTRACT NO. \_\_\_\_\_

# ABSTRACT FORM

## REMARKABLE MAST CELL CHANGES FOUND IN SO-CALLED "SCREEN DERMATITIS"

Olle Johansson & Peng-Yue Liu, Experimental Dermatology Unit, Department of Neuroscience, Karolinska Institute, 171 77 Stockholm, Sweden

The aim of this study was to investigate possible changes in the mast cell population of so-called "screen dermatitis"/"electrosensitivity" patients' skin. As controls, age- and sex-matched persons working with VDTs (however, without any symptoms) served. Immunohistochemistry using histamine antiserum was utilized. Skin punch biopsies (2, 3 or 4 mm) were obtained under local anaesthesia (Xylocain, 20 mg/ml) in a laboratory with an electric and magnetic field strength of 2-6 nA and 90 µT/s (1-2 V/m; 80-90 nT), respectively, as measured at the biopsy spot with a Friman Instrument MF-4 (size of measuring plate: 21.5 mm x 65.5 mm; 1 m<sup>2</sup> coil (type: MF-3) and an RC nT-converting filter; Friman Datakonsult AB, Stockholm, Sweden). From these studies, it is clear that the number of mast cells in the upper dermis is increased in the screen dermatitis patients (n = 15) as compared to normal healthy skin (n = 15). A different pattern of mast cell distribution also occurs in the patient group, namely, the normally empty zone between the dermo-epidermal junction and mid-to-upper dermis has disappeared in the patient group, and, instead, this zone has a high density of mast cell infiltration. Finally, in the patient group, the cytoplasmic granules are more densely distributed and more strongly stained than in the control group, and, generally, the size of the infiltrating mast cells is larger.

Recently, a new category of patients has been described in the literature, namely those who claim to suffer from subjective and objective skin- and mucosa-related symptoms after exposure to VDTs as well as other electromagnetic devices, both at their work and in their home. In summary, it is evident from our preliminary data that major biological changes may be present in these patients, however, the underlying cause still has to be established by double-blind provocations. In view of the recent epidemiological studies pointing to a correlation between long-term exposures from magnetic fields and cancer, our data ought to be further analyzed.

Supported by the Swedish Work Environment Fund (proj. no. 93-0344 and 94-0375), Nokia Monitors, Sun Microsystems AB, Radians Innova AB, Sun-Flex Datamiljö AB, Käro-Produkter AB, Magn. Bergvalls Stiftelse, funds from the Karolinska Institute, and the generous support of private donors. Ms Shan-Ying Liu, Ms Gunilla Holmkvist and Ms Eva-Karin Johansson are gratefully acknowledged for their expert technical and secretarial assistance, respectively.

### INSTRUCTIONS

Entire abstract must be typed, single-spaced, within the blue box on this abstract form. Leave no margins. Title must be brief (one or two lines) and indicate the nature of the investigation. Capitalize the entire title.

Please indicate method of presentation.  Oral only     Poster only     Either

\*Note the selection of oral only precludes the choice of a poster presentation as an alternative if the abstract is not selected for oral presentation.

### AUTHORSHIP AND AFFILIATIONS

Type on the next line with upper and lower case letters. Underline name of the presenting author. Continue on the same line with author's institutional affiliation(s), city, state and country.

### TEXT

Start text on next line, indenting 3 spaces. Subsequent lines should extend the entire width of the box. The text should have all the elements of a report: introduction, method, result(s) and conclusion. It is improper to substitute "The results will be discussed" for the results and conclusion. Adequately identify chemical compounds used.

### MAIL ABSTRACTS TO:

Pauline M. Dowd, M.D.  
Department of Dermatology  
Middlesex Hospital  
Mortimer Street  
London, W1N 8AA England, U.K.

### MAILING ADDRESS OF PRESENTING AUTHOR:

(Please print or type)

OLLE JOHANSSON  
EDU, DEPT. OF NEUROSCIENCE  
KAROLINSKA INSTITUTET  
171 77 STOCKHOLM (SWEDEN)