

Oftalmologia occupazionale ed ergoftalmologia: un percorso in evoluzione

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SUMMARY

«Occupational ophthalmology and ergophthalmology: an evolving field». In 1979 it was decided to activate, within the Institute of Occupational Health of the Milan "Università degli Studi", a new Unit of Ergophthalmology. This decision was taken owing to the progressive diffusion of "optical instruments", particularly computer-based equipment, in the world of work and to the relevance that this topic assumed among Italian occupational physicians. Since its beginning, one of the main characteristics of the Ergophthalmology Unit was an interdisciplinary approach, where occupational physicians, ophthalmologists, occupational hygienists and lighting engineers were collaborating on a daily basis. Research activities, which developed over many years and in several phases, were concerned with four main topics: 1. analysis and quantification of "near work load"; initially the investigations were mainly aimed at the evaluation of the observation distance in different tasks, followed by the development of a method which, by means of specifically designed electronic equipment, allows quantification of the accommodation and convergence required by the task; 2. development of a new method aimed at evaluating, by a photometric procedure, the luminance ratios in the "occupational visual field"; this research was carried out, both in the laboratory and during on-site investigations, in collaboration with the Dept. of Electrotechnics of Milan Polytechnic; 3. studies on the relationships between indoor microbial pollution and Computer Assisted Design work, considering that ocular conjunctiva and cornea, due to their external position, can be easily inoculated by micro-organisms present on periocular tissue and hands; this research showed that bacteria and fungi pathogenic for the eye (*Staphylococcus aureus*, *Candida sp.*, *Aspergillus sp.*) are present on desk, keyboard and mouse, as well as in the conjunctival sac of the exposed operators; 4. studies on "blue light" and its effects on the Pigmented Retinal Epithelium (PRE) in workers exposed to halide lamps, like electricians, installers, maintenance staff, polymerization operators, etc.; the laboratory and on-site investigation that was carried out in cooperation with the Health Physics Dept. of the Milan ICP Hospital, showed that long-term exposure to low levels of irradiation could constitute an eye risk for these working populations.