Software Package for Histopathology Specimens

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INTRODUCTION

The " **Software package for Histopathology Specimens**" requires the development of computerized systems for the needs of Neuropathology and Immunohistology sections of the Histopathology Department of the Cyprus Institute of Neurology and Genetics (CING).

The main purpose of Neuropathology Lab is to perform **Muscle Biopsies.** The histological and histochemical tests are carried out on the muscle sections in order to clarify microscopically the overall architecture and histochemistry of the muscle fibres. So for the diagnosis of the various neuromuscular diseases many parameters are taken into consideration i.e muscle fibre size (hypertrophic or atrophic), shape (angulated,round), presence of fibrofatty tissue in the endomysium, cell infiltration, phagocytosis, necrosis, architectural changes such as fibre type distribution. A form with these parameters is filled after the study of the muscle fibre by the referring doctor. This form is then sent to the department of Artificial Intelligence for further diagnosis.

There are more than two hundred cases of breast cancer in Cyprus, every year. It is important that the tissues from these patients be assessed for a number of prognostic factors, including oestrogen and progesterone receptors. The information from these investigations enables the oncologist to formulate the mode of treatment and to predict the survival rates of these patients.

This work is carried out in the **Immunohistology** laboratory which is associated with the Histology department of the Nicosia General Hospital. Usually one of the problems that has to be assessed in surgical specimens is the question

of "is there a tumour present or not ?" This is carried out by a histopathologist who examines sections of the specimen with a microscope. The Immunohistology laboratory has established the immunohistochemical methods for assessing oestrogen and progesterone receptors in carcinoma of the breast.

The purpose of the project is to identify the problems and needs of the existing system and develop a computer aided system, for the two sections. The system will be user friendly, efficient and give fast response. All manual procedures will be replaced into computerized operations. User needs will be fulfilled and results will be prepared in much less time.

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