

This thesis describes the role of the radiological assistant in diagnostic examination methods, while the brain was chosen as the examined area.

The introductory part deals with brain anatomy; as for its anatomical composition, the brain shows a very complex nature, and therefore I focus only on fundamental anatomical structures in this thesis. The essential principle of CT and MR is explained, as well as structural elements of the apparatuses, their types, types of sequences and ways of display. Contrast substances are applied in a considerable number of examinations, they are thus mentioned in this thesis, as well. Another important issue concerns radiation protection when working with ionizing sources.

The next part describes the most significant examinations and the radiological assistant's role in such examinations. Fundamental imaging methods of examining the brain include computer tomography and magnetic resonance. These methods make it possible to localize accurately and very quickly intracranial bleeding, tumours, inflammations, development anomalies, degenerative changes, vascular malformations and their complications, necroses, traumas etc.

The final part of this thesis compares the advantages, drawbacks and benefits of each of the methods mentioned. The thesis includes a research part, as well. The research provides comparison of the number of brain examinations performed in 2008.