

The theme of the paper is The role of radiological assistant in radionuclide pulmonary examinations. The aim of the paper is to get closer to all kinds of problems connected with these examinations, give informations about each of them and describe the role of RA in this process. It includes introduction, anatomical structure of the respiratory system, physiological function and diseases of the respiratory system, description of the radionuclid pulmonary examinations and finally conclusion. The first chapter is introduction. This part gives brief information on nuclear medicine, scintigraphy and lung perfusion and ventilation scan. The second part deals with anatomy of the respiratory system with focusing on lungs. The third chapter speaks about physiological functions of the respiratory system and consists of ventilation of the lungs, diffusion of gases through the alveolocapillary membrane, perfusion of the lungs and adequate rate between ventilation and perfusion. The fourth chapter is about diseases of the respiratory system and it is also focused on the lungs, especially on the pulmonary embolism. The fifth part involves information about lung radionuclide examinations. In this chapter is explained ventilation and perfusion of the lungs in detail and other examinations just briefly, then procedures during the examinations, advantages and disadvantages of those examinations and the role of RA in it. The sixth part is about the role of RA in the radionuclide examinations itself. The seventh chapter is practical and includes description of quantification of the lung perfusion study in detail and comparison of two methods of choosing the region of interest (ROI) and it's outcomes. ROIs of the left and right lung can be defined either by manual drawing of the boundary or automatically via an isocontour method. The eighth part is conclusion. It summarizes the whole subject of the work and evaluates the position and role of RA in radionuclide pulmonary examinations.