

## ***The full potential of FDG PET/CT in the management of lung cancer***

**Prof. Baramia, thank you very much for taking the time to speak with us.**

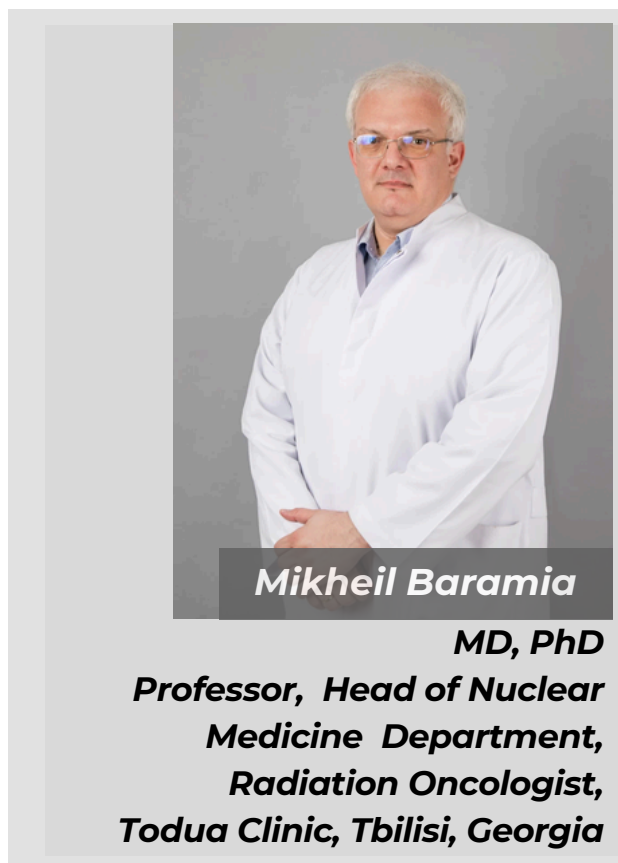
**Could you tell us what role FDG PET/CT plays in the diagnosis and staging of lung cancer, and in which cases you consider this examination essential?**

Thanks for inviting. Lung cancer is one of the most common and serious oncological diseases, making timely and accurate diagnosis extremely important — a fact that is beyond dispute. Precise assessment of the extent of disease is a critical prerequisite for effective cancer treatment in general, and for lung cancer in particular. According to the literature, PET/CT findings change the treatment strategy in approximately 30% of cases by revealing additional lesions that were not detected with other methods. This technique is valuable for all types of lung tumours, especially non-small cell lung cancer.

PET/CT provides informative data for both locoregional and distant disease assessment, giving oncologists the necessary information to select the most appropriate treatment strategy.

**How important is FDG PET/CT in radiotherapy planning, and what advantages does it offer over planning based solely on CT imaging?**

As I mentioned earlier, PET/CT often provides additional information about the locoregional spread of the disease. For example, areas of increased metabolic activity can help differentiate tumour tissue from massive atelectasis, allowing us to better preserve healthy tissue. Additionally, when assessing mediastinal lymph nodes, where morphological verification can be technically challenging,



PET/CT is sometimes essential for evaluating metastatic nodes, enabling precise delineation of the radiation target volume.

**How reliable is FDG PET/CT in assessing treatment response, whether for radiotherapy or systemic therapy? What challenges can arise in interpreting the results?**

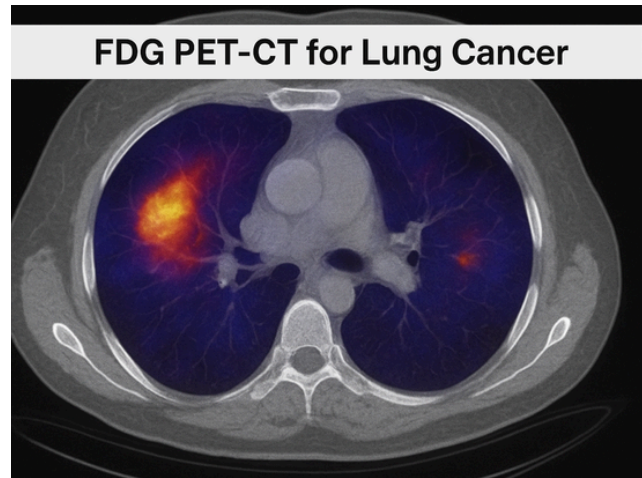
The value of FDG PET/CT in assessing treatment response is undeniable — in some cases, changes in metabolic activity are the only criterion, even when the tumor shows no significant change in size.

Of course, there are certain limitations, which we take into account to minimise potential

errors. For example, it is generally recommended to perform this scan at least two weeks after the completion of chemotherapy. In the case of radiotherapy, this interval is extended to 10–12 weeks to reduce the risk of false-positive results caused by ongoing metabolic changes during treatment. Occasionally, there are exceptions when these intervals must be shortened for urgent clinical reasons, but the influence of recent treatment on PET/CT findings must always be considered. This also applies to the phenomenon of pseudoprogression, which is frequently observed during the first follow-up scan in patients receiving immunotherapy.

**And lastly, which current innovations in nuclear medicine do you consider most promising for improving lung cancer management in the near future?**

There is ongoing development of new radiopharmaceuticals. However, for lung cancer, FDG PET/CT remains the primary radiotracer nowadays. In certain cases, DOTA PET/CT can be valuable, particularly when a neuroendocrine



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component is suspected. I am confident that in the future, more specific radiopharmaceuticals will become available, potentially tailored to particular morphological or molecular tumour types, further facilitating the diagnostic process.