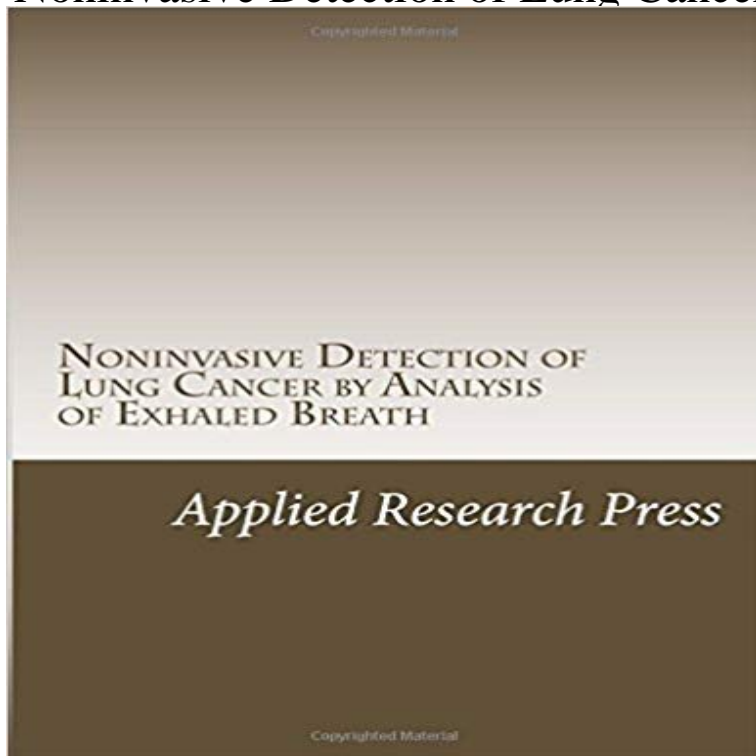


Noninvasive Detection of Lung Cancer by Analysis of Exhaled Breath



Lung cancer is one of the leading causes of death in Europe and the western world. At present, diagnosis of lung cancer very often happens late in the course of the disease since inexpensive, non-invasive and sufficiently sensitive and specific screening methods are not available. Even though the CT diagnostic methods are good, it must be assured that screening benefit outweighs risk, across all individuals screened, not only those with lung cancer. An early non-invasive diagnosis of lung cancer would improve prognosis and enlarge treatment options. Analysis of exhaled breath would be an ideal diagnostic method, since it is non-invasive and totally painless. GCMS-SPME is a relatively insensitive method. Hence compounds not appearing in exhaled breath of healthy volunteers may be below the limit of detection (LOD). PTR-MS, on the other hand, does not need preconcentration and gives much more reliable quantitative results than GCMS-SPME. The shortcoming of PTR-MS is that it cannot identify compounds with certainty. Hence SPME-GCMS and PTR-MS complement each other, each method having its particular advantages and disadvantages. Exhaled breath analysis is promising to become a future non-invasive lung cancer screening method. In order to proceed towards this goal, precise identification of compounds observed in exhaled breath of lung cancer patients is necessary. Comparison with compounds released from lung cancer cell cultures, and additional information on exhaled breath composition in other cancer forms will be important. Proceeds from the sale of this book go to support an elderly disabled person.

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