# INPLASY PROTOCOL

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**Support:** **None.**

**Review Stage at time of this submission:** **The review has not yet started.**

**Conflicts of interest:**
**None declared.**

# Diagnostic accuracy of deep learning and radiomics in lung cancer staging: A protocol for for systematic review and meta-analysis

Zheng, X[1].

**Review question / Objective:** **We will explore the diagnostic accuracy of the models based on deep learning or radiomics for lung cancer staging.**
**Condition being studied:** **Research reports on the diagnostic accuracy of radiomics and deep learning, including the pathological staging of lung cancer, lymph node metastases, benign or malignant lung nodules, and tumor types of non-small cell lung cancer (NSCLC), were included.**
**Information sources:** **This study followed the Preferred Reporting Item of the Guidelines for Systematic Reviews and Meta-Analysis (PRISMA), and selection criteria, data extraction, and data analysis were determined before study initiation. Any eligible studies in the PubMed, EMBASE, Web of Science, and Wanfang Database will be searched by Cancer, Radiomics, Deep Learning, Lung Cancer, and more.**

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 March 2022 and was last updated on 08 June 2022 (registration number INPLASY202230167).

## INTRODUCTION

**Review question / Objective:** **We will explore the diagnostic accuracy of the models based on deep learning or radiomics for lung cancer staging.**

**Condition being studied:** **Research reports on the diagnostic accuracy of radiomics and deep learning, including the pathological staging of lung cancer, lymph node metastases, benign or malignant lung**

nodules, and tumor types of non-small cell lung cancer (NSCLC), were included.

## METHODS

**Search strategy:** The search method is shown in Table 1. Search terms such as "radiomics," "deep learning," "lymph node metastasis," "non-small cell lung cancer," "benign and malignant lung nodules," and "diagnostic accuracy." Use the Boolean operator AND to combine the results of different queries.

**Participant or population:** Patients with pathologically diagnosed lung cancer were included in the study.

**Intervention:** Radiomics or deep learning algorithms.

**Comparator:** Lung cancer staging.

**Study designs to be included:** Both retrospective and prospective studies will be included.

**Eligibility criteria:** (1) patients with pathologically diagnosed lung cancer were included in the study; (2) radiomics or deep learning algorithms applied to lung cancer staging were evaluated.

**Information sources:** This study followed the Preferred Reporting Item of the Guidelines for Systematic Reviews and Meta-Analysis (PRISMA), and selection criteria, data extraction, and data analysis were determined before study initiation. Any eligible studies in the PubMed, EMBASE, Web of Science, and Wanfang Database will be searched by Cancer, Radiomics, Deep Learning, Lung Cancer, and more.

**Main outcome(s):** Diagnostic accuracy of radiomics and deep learning including the pathological staging of lung cancer, lymph node metastases, benign or malignant lung nodules, and tumor types of non-small cell lung cancer (NSCLC).

**Quality assessment / Risk of bias analysis:** Two independent reviewers will initially assess the risk of bias. A third reviewer will then review each study using the Quality Assessment of Studies for Diagnostic Accuracy (QUADAS-2) guidelines.

**Strategy of data synthesis:** The accuracy measures for this diagnostic meta-analysis included pooled sensitivity, pooled specificity, and their 95% confidence intervals (95% CI).

**Subgroup analysis:** Subgroup analysis is not required here.

**Sensitivity analysis:** Sensitivity analysis is not required here.

**Country(ies) involved:** China.

**Keywords:** lung cancer; lymph node metastasis; meta-analysis; CT; radiomics.

**Contributions of each author:**
Author 1 - xiushan zheng.