# INPLASY PROTOCOL

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**None declared.**

# The predictive value of 18F – FDG PET / CT maximum standardized uptake value change percentage for pathological complete response of breast cancer patients after neoadjuvant chemotherapy: Meta analysis

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**Review question / Objective:** **To investigate the predictive value of the percentage change of maximum normalized uptake value of 18F – FDG PET / CT for pathological complete response of breast cancer patients after neoadjuvant chemotherapy**
**Condition being studied:** **Breast cancer is the second most common type of cancer globally, with more than two million diagnoses of new breast cancers each year, which is the most common type of cancer with a rate of 24.2% in women.This study intends to make a meta-analysis on the published prediction value of 18F–FDG PET/CT maximum standardized uptake percentage for complete pathological remission of breast cancer patients after neoadjuvant chemotherapy.**

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 September 2022 and was last updated on 08 September 2022 (registration number INPLASY202290036).

## INTRODUCTION

**Review question / Objective:** **To investigate the predictive value of the percentage change of maximum normalized uptake value of 18F – FDG PET / CT for pathological complete response of breast cancer patients after neoadjuvant chemotherapy**

**Rationale:** **Breast cancer is the second most common type of cancer globally, with**

more than two million diagnoses of new breast cancers each year, which is the most common type of cancer with a rate of 24.2% in women.Studies have demonstrated that NAC can help breast cancer patients achieve a pathological complete response. The change of maximum standardized uptake value on PET/CT can predict pathological complete response.

**Condition being studied:** Breast cancer is the second most common type of cancer globally, with more than two million diagnoses of new breast cancers each year, which is the most common type of cancer with a rate of 24.2% in women.This study intends to make a meta-analysis on the published prediction value of 18F–FDG PET/CT maximum standardized uptake percentage for complete pathological remission of breast cancer patients after neoadjuvant chemotherapy.

## METHODS

**Search strategy:** We conducted a systematic search of PubMed、Embase and Web of Science for the articles about SUVmax% predicting post-NAC pCR of breast cancer patients published from the establishment of the database to August 20, 2022.

**Participant or population:** A woman with pathologically proven breast cancer who received neoadjuvant chemotherapy before surgery.

**Intervention:** Neoadjuvant chemotherapy

**Comparator:** There is no comparator.

**Study designs to be included:** Literature search, inclusion and exclusion criteria of literature,Data extraction, quality assessment, Statistical analyses(Analysis of diagnostic accuracy,Heterogeneity test,Meta regression analysis,Sensitivity analysis and bias risk assessment).

**Eligibility criteria:** Inclusion criteria: ① Female breast cancer patients confirmed by pathology were studied, and NAC was performed before operation; ②Patients should receive 18F-FDG PET/CT scan before, during and after NAC.; ③At least 20 patients were included in this article.④After operation, pathological biopsy proved that all patients achieved pCR; ⑤The sensitivity and specificity of SUVmax% prediction pCR given in the study can be calculated by the data provided in the literature; ⑥The research type is prospective or retrospective. Exclusion criteria: ① Literature types are inconsistent, such as reviews, comments, meeting summaries and other types of inconsistent articles; ② Studies in which the data included in the study are incomplete, incorrect, and it is impossible to extract or contact the author to obtain complete data; ③ In repetitive experiments, earlier or smaller samples were published; ④ The purpose of the experiment is different from that of this study.

**Information sources:** PubMed、Embase and Web of Science.

**Main outcome(s):** The pooled sensitivity ,specificity ,positive likelihood ratio , negative likelihood ratio and diagnostic odds ratio.The pooled SROC curve.

**Quality assessment / Risk of bias analysis:** Study quality was evaluated using the quality assessment of diagnostic accuracy studies (QUADAS-2) tool.STATA17.0 software was used for publication bias test.

**Strategy of data synthesis:** MetaDiSc software is used to analyze heterogeneity, merge the extracted valid data and draw SROC curve. STATA17.0 software was used for sensitivity analysis and publication bias test. $P < 0.05$, the difference was statistically significant.

**Subgroup analysis:** Meta-disc software was used to analyze the source of heterogeneity in subgroups.

**Sensitivity analysis:** Sensitivity analysis was performed using Midas bimodel variables with STATA17.0 software.

**Language restriction:** There will be no language restrictions.

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

**Keywords:** Breast cancer; NAC; pCR; SUVmax%; Predicted value.

**Contributions of each author:**

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