

# NLST Pathology Image Masterfile: Data Dictionary

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## Document Summary

| Property          | Value                                            |
|-------------------|--------------------------------------------------|
| Document Title    | NLST Pathology Image Masterfile: Data Dictionary |
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# NLST Pathology Image Masterfile: Data Dictionary

## Section 1: Study

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| Variable               | Label                   | Description                                              | Format Text |
|------------------------|-------------------------|----------------------------------------------------------|-------------|
| <b>dataset_version</b> | Date Stamp for Datasets |                                                          | Char, 23    |
| <b>pid</b>             | Participant identifier  | LSS Participants (1xxxxx)<br>ACRIN Participants (2xxxxx) | Numeric     |

## Section 2: Overview

| Variable                   | Label                                                 | Description                                                                                                                                                                                                        | Format Text                                                                                                                                                                                                                                                                                                      |
|----------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>image_filename</b>      | Image Filename                                        |                                                                                                                                                                                                                    | Char, 24                                                                                                                                                                                                                                                                                                         |
| <b>image_filesize</b>      | Image Filesize (kb)                                   |                                                                                                                                                                                                                    | Numeric                                                                                                                                                                                                                                                                                                          |
| <b>lc_order</b>            | Order Of This Cancer Among Participant's Lung Cancers |                                                                                                                                                                                                                    | Numeric                                                                                                                                                                                                                                                                                                          |
| <b>selected_path</b>       | Image Selected for Standard Pathology Selection       | <p>Image included the Standard Pathology Selection.</p> <p>The images included in the Standard Pathology Selection are those for the first primary lung cancer for participants with a baseline questionnaire.</p> | <p>0="No"</p> <p>1="Yes"</p>                                                                                                                                                                                                                                                                                     |
| <b>selected_path_batch</b> | Standard Pathology Selection Image Batch              | Batch number associated with path H&E images selected for inclusion in the Standard Pathology Selection.                                                                                                           | <p>.N="Not Applicable"</p> <p>1="Adenocarcinoma"</p> <p>2="Adenocarcinoma"</p> <p>3="Adenocarcinoma"</p> <p>4="Adenocarcinoma"</p> <p>5="Squamous cell carcinoma"</p> <p>6="Squamous cell carcinoma"</p> <p>7="Squamous cell carcinoma"</p> <p>8="Bronchio-alveolar carcinoma"</p> <p>9="Other lung cancers"</p> |

## Section 3: Tissue Block

| Variable                           | Label                                              | Description                                                                                       | Format Text                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>block_annotated</b>             | Is The Block Annotated                             |                                                                                                   | 0="No"<br>1="Yes"                                                                                                                                                                                                                                                                                                                                                                    |
| <b>block_color1-5</b>              | Slide Annotation Color                             |                                                                                                   | "AQUA"="Aqua (Metastasis)"<br>"BLACK"="Black (Invasive Carcinoma)"<br>"BLUE"="Blue (Carcinoma In Situ)"<br>"BROWN"="Brown (Pre-Malignant)"<br>"GOLD"="Gold (Other)"<br>"GREEN"="Green (Distal Bronchiole)"<br>"ORANGE"="Orange (Normal Lymph Node)"<br>"OTHER"="Other"<br>"PURPLE"="Purple (Normal Lung)"<br>"RED"="Red (Invasive Type II)"<br>"YELLOW"="Yellow (Proximal Bronchus)" |
| <b>block_dnacore_cnt</b>           | Number Of Current DNA Cores                        |                                                                                                   | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_dnacore_orig_cnt</b>      | Number Of Original DNA Cores                       |                                                                                                   | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_dnacore_vials</b>         | Number Of Vials With DNA Cores                     |                                                                                                   | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_has_dnacore</b>           | Block Has DNA Cores                                |                                                                                                   | 0="No"<br>1="Yes"                                                                                                                                                                                                                                                                                                                                                                    |
| <b>block_has_tmacore</b>           | Block Has TMA Cores                                |                                                                                                   | 0="No"<br>1="Yes"                                                                                                                                                                                                                                                                                                                                                                    |
| <b>block_slide_cnt</b>             | Number Of H&E Slides For Block                     | The total number of path H&E slides from the block. The image is an image of one of those slides. | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_tmacore_cnt</b>           | Number Of Current TMA Cores                        |                                                                                                   | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_tmacore_non_tumor_cnt</b> | Number Of TMA Cores Without Tumor Tissue           |                                                                                                   | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_tmacore_orig_cnt</b>      | Number Of Original TMA Cores                       |                                                                                                   | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_tmacore_tumor_cnt</b>     | Number Of TMA Cores With Tumor Tissue              |                                                                                                   | Numeric                                                                                                                                                                                                                                                                                                                                                                              |
| <b>block_worst_class</b>           | Worst Histology Observed For Tissue Block          |                                                                                                   | .M="Missing"<br>1="Invasive"<br>2="In-Situ"<br>3="Pre-Malignant"<br>6="Other Condition"<br>7="Normal Tissue"                                                                                                                                                                                                                                                                         |
| <b>block_worst_grade</b>           | Worst Grade Observerd For Tissue Block             |                                                                                                   | .M="Missing"<br>2="Moderately Differentiated"<br>4="Undifferentiated"                                                                                                                                                                                                                                                                                                                |
| <b>block_worst_grade_qual</b>      | Worst Grade Observerd For Tissue Block (Character) |                                                                                                   | "Moderately"="Moderately Differentiated"<br>"Undifferentiated"="Undifferentiated"                                                                                                                                                                                                                                                                                                    |

## Section 4: Regions of Interest

| Variable                           | Label                               | Description                                                                                                                                                                                                                      | Format Text                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>roi_count</b>                   | Number Of Regions Of Interest       |                                                                                                                                                                                                                                  | Numeric                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>roi_highest_grade1-6</b>        | Region Highest Grade                |                                                                                                                                                                                                                                  | .N="Not Applicable"<br>0="Blank"<br>1="Well Differentiated"<br>2="Moderately Differentiated"<br>3="Poorly Differentiated"<br>4="Undifferentiated"                                                                                                                                                                                                                                                                                                                                                   |
| <b>roi_highest_grade_qual1-6</b>   | Region Highest Grade (Character)    |                                                                                                                                                                                                                                  | "Moderately"="Moderately"<br>"N/A"="N/A"<br>"Poorly"="Poorly"<br>"Undifferentiated"="Undifferentiated"<br>"Well Differentiated"="Well Differentiated"                                                                                                                                                                                                                                                                                                                                               |
| <b>roi_histology_cat1-6</b>        | Region Histology Type - Categorized |                                                                                                                                                                                                                                  | .M="Missing"<br>.N="Not Applicable"<br>1="Metastasis"<br>2="Invasive Carcinoma"<br>3="Carcinoma In Situ"<br>4="Pre-Malignant"<br>5="Distal Bronchiole"<br>6="Proximal Bronchus"<br>7="Normal Lymph Node"<br>8="Normal Lung"<br>9="Other"                                                                                                                                                                                                                                                            |
| <b>roi_histology_subtype1-6</b>    | Region Histology Subtype            | For cancers, it includes a text description of the WHO classification.<br>For non-tumor lung tissue, see roi_histology_cat for further distinctions (i.e. distal bronchiole vs. proximal bronchus vs. other normal lung tissue). | Char, 65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>roi_histology_type_raw1-6</b>   | Region Histology Type - Raw         |                                                                                                                                                                                                                                  | "Carcinoma In Situ"="Carcinoma In Situ"<br>"Carcinoma in Situ"="Carcinoma in Situ"<br>"Distal Bronchial"="Distal Bronchial"<br>"Invasive Carcinoma Type II"="Invasive Carcinoma Type II"<br>"Invasive Carcinoma"="Invasive Carcinoma"<br>"Invasive carcinoma"="Invasive carcinoma"<br>"Metastasis"="Metastasis"<br>"Normal LN"="Normal LN"<br>"Normal Lung"="Normal Lung"<br>"Other"="Other"<br>"Pre-Malignant"="Pre-Malignant"<br>"Proximal Bronchus"="Proximal Bronchus"<br>"Unmarked"="Unmarked" |
| <b>roi_inflamm_cell_percent1-6</b> | Region Inflammatory Cell Percent    |                                                                                                                                                                                                                                  | Numeric<br>.M="Missing"<br>.N="Not Applicable"                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Variable                                | Label                                        | Description | Format Text                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------|----------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>roi_inv_tumor_dim1-6</b>             | Size of Invasive Component of Tumor (mm)     |             | Numeric<br>.M="Missing"<br>.N="Not Applicable"                                                                                                                                                                                                                                                                                                                                       |
| <b>roi_inv_tumor_dim_raw1-6</b>         | Raw Size of Invasive Component of Tumor (mm) |             | Char, 5                                                                                                                                                                                                                                                                                                                                                                              |
| <b>roi_label_color1-6</b>               | Region Label Color                           |             | "AQUA"="Aqua (Metastasis)"<br>"BLACK"="Black (Invasive Carcinoma)"<br>"BLUE"="Blue (Carcinoma In Situ)"<br>"BROWN"="Brown (Pre-Malignant)"<br>"GOLD"="Gold (Other)"<br>"GREEN"="Green (Distal Bronchiole)"<br>"ORANGE"="Orange (Normal Lymph Node)"<br>"OTHER"="Other"<br>"PURPLE"="Purple (Normal Lung)"<br>"RED"="Red (Invasive Type II)"<br>"YELLOW"="Yellow (Proximal Bronchus)" |
| <b>roi_likely_met1-6</b>                | Region Likely Metastasis (Raw)?              |             | "BLANK"="Blank"<br>"Can't Determine"="Can't Determine"<br>"N/A"="N/A"<br>"None"="None"<br>"Probable"="Probable"<br>"Unlikely"="Unlikely"                                                                                                                                                                                                                                             |
| <b>roi_lymph_inv1-6</b>                 | Region Lymph Node Invasion?                  |             | .M="Missing"<br>.N="Not Applicable"<br>0="No"<br>1="Yes"                                                                                                                                                                                                                                                                                                                             |
| <b>roi_lymph_inv_raw1-6</b>             | Region Lymph Node Invasion (Raw)?            |             | "No"="No"<br>"Not Applicable"="Not Applicable"<br>"Yes"="Yes"                                                                                                                                                                                                                                                                                                                        |
| <b>roi_metastases1-6</b>                | Region Likely Metastasis?                    |             | .M="Missing"<br>.N="Not Applicable"<br>0="No"<br>1="Probable"<br>2="Unlikely"<br>99="Can't Determine"                                                                                                                                                                                                                                                                                |
| <b>roi_nontumor_histo_raw1-6</b>        | Region Non-Tumor Histology (Raw)             |             | Char, 11                                                                                                                                                                                                                                                                                                                                                                             |
| <b>roi_nontumor_prem_alig1-6</b>        | Region Non-Tumor Premalignant Histology      |             | .M="Missing"<br>.N="Not Applicable"<br>1="Squamous Carcinoma in-Situ"<br>2="Squamous Dysplasia, MILD"<br>3="Squamous Dysplasia, Moderate"<br>4="Squamous Dysplasia, SEVERE"<br>5="Atypical Adenomatous Hyperplasia (AAH)"<br>7="Reserve Cell Hyperplasia"<br>8="Carcinoid Tumorlet"<br>88="Other"<br>99="N/A"                                                                        |
| <b>roi_NThist_Chronic_bronchitis1-6</b> | Has Chronic Bronchitis?                      |             | .N="Not Applicable"<br>0="No"<br>1="Yes"                                                                                                                                                                                                                                                                                                                                             |
| <b>roi_NThist_Emphysema1-6</b>          | Has Emphysema?                               |             | .N="Not Applicable"<br>0="No"<br>1="Yes"                                                                                                                                                                                                                                                                                                                                             |

| Variable                                  | Label                                                   | Description                                                                                                        | Format Text                              |
|-------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| <b>roi_NThist_Fibrosis1-6</b>             | Has Fibrosis?                                           |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Granuloma1-6</b>            | Has Granuloma?                                          |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Hemorrhage1-6</b>           | Has Hemorrhage?                                         |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Infarction1-6</b>           | Has Infarction?                                         |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Necrosis1-6</b>             | Has Necrosis?                                           |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Normal_lung1-6</b>          | Has Normal Lung Tissue?                                 |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Otherspecify1-6</b>         | Has Other Condition?                                    |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Pneumonia1-6</b>            | Has Pneumonia?                                          |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_NThist_Pre_neoplastic_tiss1-6</b>  | Has Pre-Neoplastic Tissue?                              |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_number1-6</b>                      | Region of Interest Number                               | Each Region of Interest within a tissue block is assigned a number. This is used for linking TMA cores to the ROI. | Numeric<br>.N="Not Applicable"           |
| <b>roi_Premalig_AAH1-6</b>                | Has Atypical Adenomatous Hyperplasia (AAH)?             |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_Premalig_Carcinoid_tumorlet1-6</b> | Has Carcinoid Tumorlet?                                 |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_Premalig_DIPNECH1-6</b>            | Has Diffuse Idiopathic Neuroendocrine Cell Hyperplasia? |                                                                                                                    | .N="Not Applicable"<br>0="No"            |
| <b>roi_Premalig_Otherspecify1-6</b>       | Has Other Pre-Malignant Condition?                      |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_Premalig_RCH1-6</b>                | Has Reserve Cell Hyperplasia?                           |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_Premalig_Squamous_carc_ins1-6</b>  | Has Squamous Carcinoma In-Situ?                         |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |
| <b>roi_Premalig_Squamous_dysp_mild1-6</b> | Has Squamous Dysplasia - MILD                           |                                                                                                                    | .N="Not Applicable"<br>0="No"<br>1="Yes" |

| Variable                                 | Label                             | Description                                                                                                               | Format Text                                                        |
|------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>roi_Premalig_Squamous_dysp_mod1-6</b> | Has Squamous Dysplasia - MODERATE |                                                                                                                           | .N="Not Applicable"<br>0="No"<br>1="Yes"                           |
| <b>roi_Premalig_Squamous_dysp_sev1-6</b> | Has Squamous Dysplasia - SEVERE   |                                                                                                                           | .N="Not Applicable"<br>0="No"<br>1="Yes"                           |
| <b>roi_tumor_cell_percent1-6</b>         | Region Tumor Cell Percent         |                                                                                                                           | Numeric<br>.M="Missing"<br>.N="Not Applicable"                     |
| <b>roi_vessel_inv1-6</b>                 | Region Vessel Invasion?           |                                                                                                                           | .M="Missing"<br>.N="Not Applicable"<br>0="No"<br>1="Yes"           |
| <b>roi_vessel_inv_raw1-6</b>             | Region Vessel Invasion (Raw)?     |                                                                                                                           | "No"="No"<br>"Not Applicable"="Not Applicable"<br>"Yes"="Yes"      |
| <b>roi_WHO_class1-6</b>                  | Region WHO Classification         | Based on 2004 WHO classification of lung tumors. Includes a 4-digit morphology code and a 1-digit behavior code (####/#). | Char, 6                                                            |
| <b>roi_who_class_beh1-6</b>              | Region WHO Behavior               |                                                                                                                           | .M="Missing"<br>.N="Not Applicable"<br>2="In-Situ"<br>3="Invasive" |
| <b>roi_who_class_mor1-6</b>              | Region WHO Morphology             | 4-digit ICD morphology.                                                                                                   | Numeric<br>.M="Missing"<br>.N="Not Applicable"                     |