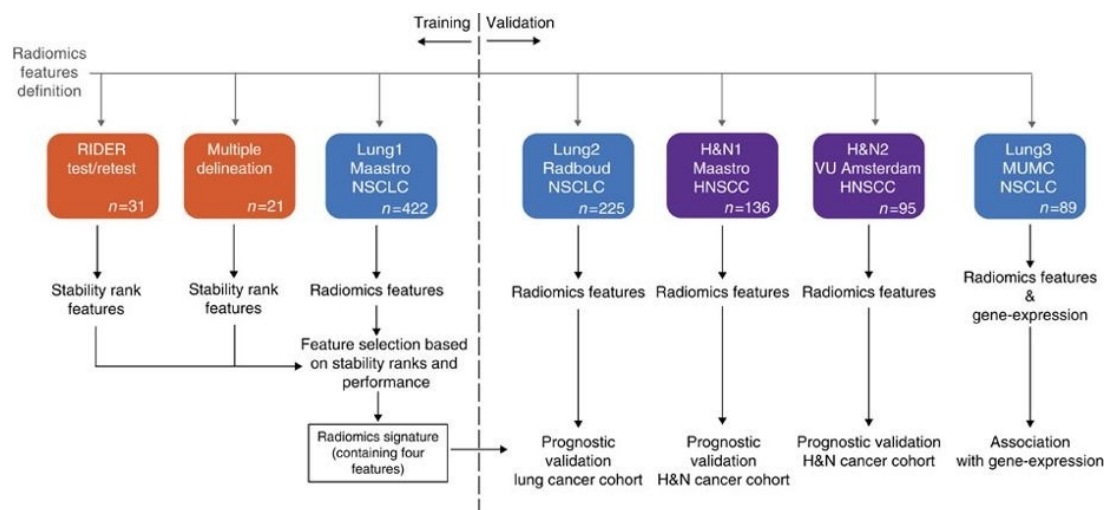


RIDER Lung CT Segmentation Labels from: Decoding tumour phenotype by noninvasive imaging using a quantitative radiomics approach

Summary

This dataset contains images from 31 out of the 32 non-small cell lung cancer (NSCLC) patients in the [RIDER Lung CT](#) collection on TCIA. For these subjects a radiation oncologist was blinded to the all delineations of the 3D volume of the gross tumor volume. They were then asked to manually delineate the gross tumour volume in both the test image and the re-test image. The process was repeated using an in-house autosegmentation method. There is no clinical outcome data associated with this dataset.

This dataset refers to the RIDER dataset of the study published in Nature Communications (<http://doi.org/10.1038/ncomms5006>). In short, this publication used the dataset to select for repeatable radiomics features in a test-retest context. Radiomics refers to the comprehensive quantification of tumour phenotypes by applying a large number of quantitative image features. In the published analysis, 440 features quantifying tumour image intensity, shape and texture, were extracted. We found that a large number of radiomic features have prognostic power in independent data sets, many of which were not identified as significant before. Radiogenomics analysis revealed that a prognostic radiomic signature, capturing intra-tumour heterogeneity, was associated with underlying gene-expression patterns. These data suggest that radiomics identifies a general prognostic phenotype existing in both lung and head-and-neck cancer. This may have a clinical impact as imaging is routinely used in clinical practice, providing an unprecedented opportunity to improve decision-support in cancer treatment at low cost.



Other data sets in the Cancer Imaging Archive that were used in the same [study published in Nature Communications: NSCLC-Radiomics, NSCLC-Radiomics-Genomics, NSCLC-Radiomics-Interobserver1, Head-Neck-Radiomics-HN1](#).

Data Access

Data Access

Click the **Download** button to save a ".tcia" manifest file to your computer, which you must open with the [NBIA Data Retriever](#).

| Data Type | Download all or Query/Filter |
|---|------------------------------|
| Gross Tumor Volume Segmentation - (DICOM RTSTRUCT and SEG, 912 MB) | Download |
| Corresponding Original CT Images from RIDER Lung CT - (DICOM, 7 GB) | Download |

Click the Versions tab for more info about data releases.

Detailed Description

Detailed Description

| Image Statistics | |
|--------------------|---------------|
| Modalities (DICOM) | RTSTRUCT, SEG |
| Number of Patients | 31 |

| | |
|-------------------|--------|
| Number of Studies | 31 |
| Number of Series | 118 |
| Number of Images | 118 |
| Images Size (GB) | 912 MB |

- (RIDER-2283289298) only has segmentations associated with the retest.
- (RIDER-5195703382) only has segmentations associated with the test.
- (RIDER-8509201188) only has segmentations associated with the test.
- (RIDER-9762593735) not included in the data set due to missing delineations.

Citations & Data Usage Policy

Citations & Data Usage Policy

Users of this data must abide by the [Creative Commons Attribution-NonCommercial 3.0 Unported License](#) under which it has been published. Attribution should include references to the following citations:

Data Citation

Leonard Wee, Hugo Aerts, Petros Kalendralis and Andre Dekker. (2018) RIDER Lung CT Segmentation Labels from: Decoding tumour phenotype by noninvasive imaging using a quantitative radiomics approach. The Cancer Imaging Archive. <https://doi.org/10.7937/tcia.2020.jit9grk8>

TCIA Citation

Clark K, Vendt B, Smith K, Freymann J, Kirby J, Koppel P, Moore S, Phillips S, Maffitt D, Pringle M, Tarbox L, Prior F. **The Cancer Imaging Archive (TCIA): Maintaining and Operating a Public Information Repository**, Journal of Digital Imaging, Volume 26, Number 6, December, 2013, pp 1045-1057. ([paper](#))

Publication Citation

Aerts, H. J. W. L., Velazquez, E. R., Leijenaar, R. T. H., Parmar, C., Grossmann, P., Cavalho, S., ... Lambin, P. (2014, June 3). Decoding tumour phenotype by noninvasive imaging using a quantitative radiomics approach. Nature Communications. Nature Publishing Group. <http://doi.org/10.1038/ncomms5006>

Questions may be directed to help@cancerimagingarchive.net.

Other Publications Using This Data

TCIA maintains [a list of publications](#) that leverage TCIA data. If you have a manuscript you'd like to add please [contact the TCIA Helpdesk](#).

Versions

Version 1 (Current): Updated 2020/02/13

| Data Type | Download all or Query/Filter |
|---|------------------------------|
| Gross Tumor Volume Segmentation - (DICOM RTSTRUCT and SEG, 912 MB) | Download |
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