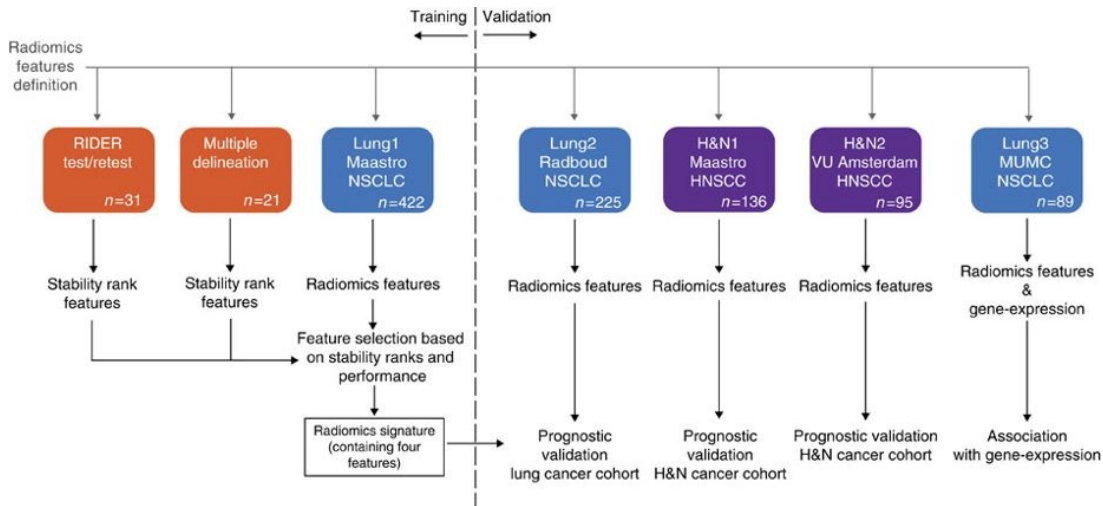


Head-Neck-Radiomics-HN1

Summary

This collection contains clinical data and computed tomography (CT) from 137 head and neck squamous cell carcinoma (HNSCC) patients treated by radiotherapy. For these patients a pre-treatment CT scan was manual delineated by an experienced radiation oncologist of the 3D volume of the gross tumor volume. This dataset refers to the "H&N1" dataset of the study published in Nature Communications (<http://doi.org/10.1038/ncomms5006>). At time of previous publication, images of one subject had been unintentionally overlooked. In short, the publication used a radiomics approach to computed tomography data of 1,019 patients with lung or head-and-neck cancer.



Radiomics refers to the comprehensive quantification of tumor phenotypes by applying a large number of quantitative image features. In the published analysis, 440 features quantifying tumor 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-tumor 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.

This dataset is provided as open access to support repeatability and reproducibility of research in radiomics. This dataset will be the subject of an upcoming article addressing FAIR radiomics practices to support transparency, harmonization and collaboration on radiomics.

From version 2 (release date 09/20/2019) onwards we included the primary neoplasm gross tumour volume delineations in DICOM SEGMENTATION as well as DICOM RTSTRUCT files that accompanied the DICOM axial images. This dataset is provided as open access to support repeatability and reproducibility of research in radiomics. This dataset will be the subject of an upcoming article addressing FAIR radiomics practices to support transparency, harmonization and collaboration on radiomics.

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](#), [RIDER Lung CT Segmentation Labels from: Decoding tumour phenotype by noninvasive imaging using a quantitative radiomics approach](#).

For scientific or other inquiries about this dataset, please [contact the TCIA Helpdesk](#).

Acknowledgements





We would like to acknowledge the individuals and institutions that have provided data for this collection:

- Leonard Wee, MAASTRO (Dept of Radiotherapy), Maastricht University Medical Centre+, Maastricht, Limburg, The Netherlands.
- Frank Hoebbers, MAASTRO (Dept of Radiotherapy), Maastricht University Medical Centre+, Maastricht, Limburg, The Netherlands.
- Andre Dekker, MAASTRO (Dept of Radiotherapy), Maastricht University Medical Centre+, Maastricht, Limburg, The Netherlands.
- Hugo Aerts, Computational Imaging and Bioinformatic Laboratory, Dana-Farber Cancer Institute & Harvard Medical School, Boston, Massachusetts, USA.

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](#). Click the **Search** button to open our Data Portal, where you can browse the data collection and/or download a subset of its contents.

Data Type	Download all or Query/Filter
Images, Segmentations, and Radiation Therapy Structures (DICOM, 11.8 GB)	  (Requires NBIA Data Retriever .)
Clinical Data (CSV, zip)	
Data Dictionary (txt)	

Click the Versions tab for more info about data releases.

Detailed Description

Detailed Description

Image Statistics	
Modalities	CT, PT, RTSTRUCT, SEG
Number of Participants	137
Number of Studies	137
Number of Series	486
Number of Images	28918
Images Size (GB)	28918

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

Wee, L., & Dekker, A. (2019). Data from Head-Neck-Radiomics-HN1 [Data set]. The Cancer Imaging Archive. <https://doi.org/10.7937/tcia.2019.8kap372n>.

Publication Citation

Aerts HJWL, Velazquez ER, Leijenaar RTH, Parmar C, Grossmann P, Carvalho S, Bussink J, Monshouwer R, Haibe-Kains B, Rietveld D, Hoebers F, Rietbergen MM, Leemans CR, Dekker A, Quackenbush J, Gillies RJ, Lambin P. **Decoding Tumour Phenotype by Noninvasive Imaging Using a Quantitative Radiomics Approach**, Nature Communications, Volume 5, Article Number 4006, June 03, 2014. DOI: <http://doi.org/10.1038/ncomms5006>.

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. DOI: [10.1007/s10278-013-9622-7](https://doi.org/10.1007/s10278-013-9622-7)





Questions may be directed to help@cancerimagingarchive.net.

Other Publications Using This Data

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

Versions




Version 3 (Current): 2020/07/29

Data Type	Download all or Query/Filter
Images (DICOM, 11.8 GB)	  (Requires NBIA Data Retriever .)
Clinical Data (CSV, zip)	
Data Dictionary (txt)	

Added the chemotherapy schedule to the clinical data; one extra column added which is “chemotherapy_given”.




Added data dictionary for clinical data.

Version 2 (Current): 2019/09/20

Data Type	Download all or Query/Filter
Images (DICOM, 11.8 GB)	<div data-bbox="565 247 922 310">   </div> <p data-bbox="565 352 922 384">(Requires NBIA Data Retriever.)</p>
Clinical Data (CSV)	<div data-bbox="565 415 760 478">  </div>

Added DICOM Segmentations

Version 1: 2019/07/25

Data Type	Download all or Query/Filter
Images (DICOM, 11.2 GB)	<div data-bbox="565 753 922 816">   </div> <p data-bbox="565 858 922 890">(Requires NBIA Data Retriever.)</p>
Clinical Data (CSV)	<div data-bbox="565 921 760 984">  </div>