

# HNSCC

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## Summary

This collection contains imaging, radiation therapy, and clinical data from 627 head and neck squamous cell carcinoma (HNSCC) patients at MD Anderson Cancer Center. Researchers at MDACC analyzed these patients' data as part of two separate research projects. [70 of the patients](#) were selected for inclusion in both projects. This collection provides access to all data for the full set of patients involved in both projects. Download options for the individual studies are available by following the links in each project description below.

The first project screened 2840 consecutive patients with HNSCC treated with curative-intent RT at MD Anderson Cancer Center from 2003 to 2013. Patients with whole-body PET-CT or abdominal CT scans both before and after RT (n=215) were selected for the cohort. De-identified diagnostic imaging, radiation treatment planning, and follow up imaging are provided. Using cross sectional imaging, total body skeletal muscle and adipose content were calculated before and after treatment. All imaging data are subject- and date-matched to clinical data from each patient, including demographics, risk factors, grade, stage, recurrence, and survival. Open access to these data allows for inter-institutional comparisons of complete RT details in non-randomized patient populations, allowing for a more granular understanding of three dimensional factors that influence treatment effectiveness and toxicity sparing. More information about this study and links to download the corresponding patient subset of this collection including clinical data can be found in the ["Data from Head and Neck Cancer CT Atlas" dataset](#).

The second project was intended to address the unmet need for integrating quantitative imaging biomarkers into current risk stratification tools and to explore the correlation between radiomics features –alone or in combination with clinical prognosticators- and tumor outcome. Clinical meta-data and matched baseline contrast-enhanced computed tomography (CECT) scans were used to build a cohort of 495 oropharyngeal cancer (OPC) patients treated between 2005 and 2012. Expert radiation oncologists manually segmented primary and nodal disease gross volumes (GTVp & GTVn). Structures were named per the American Association of Physicists in Medicine (AAPM) TG-263 recommendations, then retrieved in RT-STRUCT format. Matched patient, disease, treatment and outcomes data were obtained. Radiomics analysis was performed using an open-source institutionally-developed software that runs on Matlab platform. More information about this study and links to download the corresponding patient subset of this collection including clinical data can be found in the ["Radiomics outcome prediction in Oropharyngeal cancer" dataset](#).

### Acknowledgements:

This research was supported by the Andrew Sabin Family Foundation; Dr. Fuller is a Sabin Family Foundation Fellow. Drs. Mohamed and Fuller receive funding support from the National Institutes of Health (NIH)/National Institute for Dental and Craniofacial Research (NIDCR) (R01DE025248) and the National Institutes of Health (NIH)/National Cancer Institute (NCI) (1R01CA214825-01). Dr. Fuller received/(s) grant and/or salary support from the NIH/NCI Head and Neck Specialized Programs of Research Excellence (SPORE) Developmental Research Program Career Development Award (P50CA097007-10); the NCI Paul Calabresi Clinical Oncology Program Award (K12 CA088084-06); a General Electric Healthcare/MD Anderson Center for Advanced Biomedical Imaging In-Kind Award; an Elekta AB/MD Anderson Department of Radiation Oncology Seed Grant; the Center for Radiation Oncology Research (CROR) at MD Anderson Cancer Center Seed Grant; the MD Anderson Institutional Research Grant (IRG) Program; and the NIH /NCI Cancer Center Support (Core) Grant CA016672 to The University of Texas MD Anderson Cancer Center (P30 CA016672). Dr. Elhalawani was directly funded in part by a philanthropic gift from the Family of Paul W. Beach given to Dr. Gunn for patient-outcome database construction.

### Data Access

#### Data Access

Some data in this collection contains images that could potentially be used to reconstruct a human face. To safeguard the privacy of participants, users must sign and submit a [TCIA Restricted License Agreement](#) to [help@cancerimagingarchive.net](mailto:help@cancerimagingarchive.net) before accessing the data.

Data Type	Download all or Query/Filter	License
Images and Radiation Therapy Structures (DICOM, 144 GB)	<a href="#">Download</a> <a href="#">Search</a> (Download requires the <a href="#">NBIA Data Retriever</a> )	TCIA Restricted
Clinical Data from " <a href="#">Data from Head and Neck Cancer CT Atlas</a> " (XLS, 265 kB)	<a href="#">Download</a>	CC BY 3.0
Clinical Data Dictionary from " <a href="#">Data from Head and Neck Cancer CT Atlas</a> " (XLS, 99 kB)	<a href="#">Download</a>	CC BY 3.0
Clinical Data from " <a href="#">Radiomics outcome prediction in Oropharyngeal cancer</a> " (XLS, 79 kB)	<a href="#">Download</a>	CC BY 3.0

Please contact [help@cancerimagingarchive.net](mailto:help@cancerimagingarchive.net) with any questions.

## Related Collections:

- [Radiomics outcome prediction in Oropharyngeal cancer](#)
- [Data from Head and Neck Cancer CT Atlas \(Head-Neck-CT-Atlas\)](#)

### Detailed Description

## Detailed Description

	Radiology Image Statistics
Modalities	CT, MR, PT, RT, RTDOSE, RTPLAN, RTSTRUCT
Subjects	627
Studies	1177
Series	4,039
Images	537,942
Size	144 GB

Note from the investigators: Some PET scans will include two PET AC files—one includes the head & neck portion of the exam, the other includes eyes-to-thighs. There is no file naming convention to distinguish between the two, so delineation may require the use of a DICOM viewer.

### Citations & Data Usage Policy

## Citations & Data Usage Policy

Users must abide by the [TCIA Data Usage Policy and Restrictions](#). Attribution should include references to the following citations:

### Data Citation

Grossberg A, Elhalawani H, Mohamed A, Mulder S, Williams B, White AL, Zafereo J, Wong AJ, Berends JE, AboHashem S, Aymard JM, Kanwar A, Perni S, Rock CD, Chamchod S, Kantor M, Browne T, Hutcheson K, Gunn GB, Frank SJ, Rosenthal DI, Garden AS, Fuller CD, M.D. Anderson Cancer Center Head and Neck Quantitative Imaging Working Group. (2020) **HNSCC [ Dataset ]**. The Cancer Imaging Archive. DOI: <https://doi.org/10.7937/k9/tcia.2020.a8sh-7363>

**In addition to the dataset citation above, please be sure to cite the following if you utilize these data in your research:**

### Publication Citation

Grossberg A, Mohamed A, Elhalawani H, Bennett W, Smith K, Nolan T, Williams B, Chamchod S, Heukelom J, Kantor M, Browne T, Hutcheson K, Gunn G, Garden A, Morrison W, Frank S, Rosenthal D, Freymann J, Fuller C. (2018) **Imaging and Clinical Data Archive for Head and Neck Squamous Cell Carcinoma Patients Treated with Radiotherapy**. *Scientific Data* 5:180173 (2018) DOI: [10.1038/sdata.2018.173](https://doi.org/10.1038/sdata.2018.173)

### Publication Citation

Elhalawani, H., Mohamed, A., White, A. *et al.* **Matched computed tomography segmentation and demographic data for oropharyngeal cancer radiomics challenges**. *Sci Data* 4, 170077 (2017). DOI: [10.1038/sdata.2017.77](https://doi.org/10.1038/sdata.2017.77)

### 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)

## 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 3 (Current): 2022/08/24**

Data Type	Download all or Query /Filter	License
Images and Radiation Therapy Structures (DICOM, 144 GB)	<a href="#">Download</a> <a href="#">Search</a>	TCIA Restricted
Clinical Data from " <a href="#">Data from Head and Neck Cancer CT Atlas</a> " (XLS)	<a href="#">Download</a>	CC BY 3.0
Clinical Data Dictionary from " <a href="#">Data from Head and Neck Cancer CT Atlas</a> " (XLS)	<a href="#">Download</a>	CC BY 3.0

Clinical Data from " <a href="#">Radiomics outcome prediction in Oropharyngeal cancer</a> " (XLS)	<a href="#">Download</a>	CC BY 3.0
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Corrected version of the Clinical Data from "[Radiomics outcome prediction in Oropharyngeal cancer](#)" (XLS) because the investigators noticed an error in some of the durations of the endpoints including the overall survival, local and regional control, and freedom from distant metastasis. The original excel sheet had errors because the formulas to calculate the duration for patients with events were not applied so we fixed this error and now all the durations are correct.

## Version 2: 2020/03/31

Added data from the "[Radiomics outcome prediction in Oropharyngeal cancer](#)" project.

Data Type	Download all or Query/Filter
Images and Radiation Therapy Structures (DICOM, 144 GB)	<a href="#">Download</a> <a href="#">Search</a>
Clinical Data from " <a href="#">Data from Head and Neck Cancer CT Atlas</a> " (XLS)	<a href="#">Download</a>
Clinical Data Dictionary from " <a href="#">Data from Head and Neck Cancer CT Atlas</a> " (XLS)	<a href="#">Download</a>
Clinical Data from " <a href="#">Radiomics outcome prediction in Oropharyngeal cancer</a> " (XLS)	<a href="#">Download</a>

## Version 1: 2019/07/11

Data Type	Download all or Query/Filter
Images (DICOM)	<a href="#">Download</a>
Clinical (XLS)	<a href="#">Download</a>
Data Dictionary (XLS)	<a href="#">Download</a>