

Imbio Airway Analysis™

(with YACTA technology exclusively licensed from University of Heidelberg)

Bibliography of Peer-Reviewed Scientific Literature

Regulatory Clearance Notice: Airway Analysis is not FDA cleared and is for research use in the U.S. and other regions without regulatory clearance for clinical use.

Indications for Use (Unofficial IFUs): The Imbio Airway Analysis Software device is designed to segmenting the airway tree from a volumetric HRCT acquisition and report the measurements of those airways. Airway Analysis software provides the user with annotated images showing ventricular measurements. Its results are not intended to be used on a stand-alone basis for clinical decision-making or otherwise preclude clinical assessment of HRCT cases.

Below is a representative sampling of published scientific and technical peer-reviewed articles that relate to the Airway Analysis, and its core embedded technology – known as “YACTA” – used for measurement of the airway tree. This bibliography is being provided by way of illustration of the scientific discourse on the subject.

General Technology Background

Fully automatic detection and quantification of emphysema on thin section MD-CT of the chest by a new and dedicated software.

Achenbach T, Weinheimer O, Buschsieweke C, Heussel CP, Thelen M, Kauczor HU. *Rofo*. 2004 Oct;176(10):1409-15. PMID: 15383971 DOI: 10.1055/s-2004-813530
<https://pubmed.ncbi.nlm.nih.gov/15383971/>

About Objective 3-D Analysis of Airway Geometry in Computerized Tomography.

Weinheimer O, Achenbach T, Bletz C, Duber C, Kauczor HU, Heussel CP. *IEEE Trans Med Imaging*. 2008 Jan;27(1):64-74. PMID: 18270063 DOI: 10.1109/TMI.2007.902798
<https://pubmed.ncbi.nlm.nih.gov/18270063/>

Quantitative analysis of emphysema in 3D using MDCT: influence of different reconstruction algorithms.

Ley-Zaporozhan J, Ley S, Weinheimer O, Iliyushenko S, Erdugan S, Eberhardt R, Fuxa A, Mews J, Kauczor HU. *Eur J Radiol*. 2008; 65:228-34 PMID: 17499951 DOI: 10.1016/j.ejrad.2007.03.034
<https://pubmed.ncbi.nlm.nih.gov/17499951/>

Potential Prognostic Value: Correlations to Disease Progression

Quantitative CT detects progression in COPD patients with severe emphysema in a 3-month interval.

Konietzke P, Wielputz MO, Wagner WL, Wuennemann F, Kauczor HU, Heussel CP, Eichinger M, Eberhardt

R, Gompelmann D, Weinheimer O. Eur Radiol. 2020 Jan 21;30:2502-12. PMID: 31965260
DOI: 10.1007/s00330-019-06577-y
<https://pubmed.ncbi.nlm.nih.gov/31965260/>

Longitudinal airway remodeling in active and past smokers in a lung cancer screening population

Jobst BJ, Weinheimer O, Buschulte T, Trauth M, Tremper J, Delorme S, Becker N, Motsch E, Gross ML, Trotter A, Eichinger M, Kauczor HU, Wielputz MO. Eur Radiol. 2019 Jun;29(6):2968-2980. PMID: 30552475 DOI: 10.1007/s00330-018-5890-4
<https://pubmed.ncbi.nlm.nih.gov/30552475/>

Quantitative CT detects changes in airway dimensions and air-trapping after bronchial thermoplasty for severe asthma.

Konietzke P, Weinheimer O, Wielputz MO, Wagner WL, Kaukel P, Eberhardt, R, Heussel CP, Kauczor HU, Herth FJ, Schuhmann M. Eur J Radiol. 2018 Oct;107:33-38. PMID: 30292270
DOI: 10.1016/j.ejrad.2018.08.007
<https://pubmed.ncbi.nlm.nih.gov/30292270/>

Quantitative computed tomography analysis of the airways in patients with cystic fibrosis using automated software: correlation with spirometry in the evaluation of severity.

Santos MK, Cruvinel DL, de Menezes MB, Teixeira SR, Vianna EdO, Elias Júnior J, Martinez JAB. Radiol Bras. Nov-Dec 2016;49(6):351-357. PMID: 28100929 PMCID: PMC5238409 DOI: 10.1590/0100-3984.2015.0145
<https://pubmed.ncbi.nlm.nih.gov/28100929/>

Automatic airway analysis on multidetector computed tomography in cystic fibrosis: correlation with pulmonary function testing.

Wielputz MO, Eichinger M, Weinheimer O, Ley S, Mall M A, Wiebel M, Bischoff A, Kauczor HU, Heussel CP, Puderbach M. J Thorac Imaging. 2013 Mar;28(2):104-13 PMID: 23222199
DOI: 10.1097/RTI.0b013e3182765785
<https://pubmed.ncbi.nlm.nih.gov/23222199/>