

Brainomix

- 1.93 Herweh C, Ringleb PA, Rauch G, Gerry S, Behrens L, Mohlenbruch M, et al. Performance of e-ASPECTS software in comparison to that of stroke physicians on assessing CT scans of acute ischemic stroke patients. *IntJStroke*. 2016; 11:438-445 <https://www.ncbi.nlm.nih.gov/pubmed/26880058>
- 1.94 In this study the authors demonstrate that e-ASPECTS is equivalent to two of three expert physicians, and superior to the remaining expert and three trainees. The ASPECT score on CT is compared to a contemporaneous DWI reference standard.
- 1.95 Nagel S, Sinha D, Day D, Reith W, Chapot R, Papanagiotou P, et al. e-ASPECTS software is non-inferior to neuroradiologists in applying the ASPECT score to computed tomography scans of acute ischemic stroke patients. *IntJ Stroke*. 2017;12:615-622 <https://www.ncbi.nlm.nih.gov/pubmed/27899743>
- 1.96 In this study e-ASPECTS was shown to be non-inferior to three expert neuroradiologists in quantifying ASPECT score on non-contrast CT imaging in acute stroke.
- 1.97 Goebel J, Stenzel E, Guberina N, Wanke I, Koehrmann M, Kleinschnitz C, et al. Automated ASPECT rating: comparison between the Frontier ASPECT Score software and the Brainomix software. *Neuroradiology*. 2018;60:1267-1272 <https://www.ncbi.nlm.nih.gov/pubmed/30219935>
- 1.98 In this study e-ASPECTS was shown to be in high agreement with radiologists and a consensus reading, which was not the case for Frontier software.
- 1.99 Sundaram VK, Goldstein J, Wheelwright D, Aggarwal A, Pawha PS, Doshi A, et al. Automated ASPECTS in Acute Ischemic Stroke: A Comparative Analysis with CT Perfusion. *AJNR Am J Neuroradiol*. 2019;40:2033-2038 <http://www.ainr.org/content/ainr/early/2019/11/14/ainr.A6303.full.pdf>
- 1.100 In this US-based study (Mount Sinai, New York) e-ASPECTS performs at the level of expert consensus ASPECTS and CTP-CBV defined ASPECTS. Of all methods e-ASPECTS correlates best with final infarct volume.
- 1.101 Neuhaus A, Seyedsaadat SM, Mihai D, Benson J, Mark I, Kallmes DF, et al. Region-specific agreement in ASPECTS estimation between neuroradiologists and e-ASPECTS software. *J Neurointerv Surg*. 2020;12:720 -723 <https://pubmed.ncbi.nlm.nih.gov/31818971/>
- 1.102 Austein F, Wodarg F, Jurgensen N, Huhndorf M, Meyne J, Lindner T, et al. Automated versus manual imaging assessment of early ischemic changes in acute stroke: comparison of two software

- packages and expert consensus. *Eur Radiol.* 2019;29:6285-6292
<https://pubmed.ncbi.nlm.nih.gov/31Q76862/>
- 1.103 Hoelter P, Muehlen I, Goelitz P, Beuscher V, Schwab S, Doerfler A. Automated ASPECT scoring in acute ischemic stroke: comparison of three software tools. *Neuroradiology.* 2020;62:1231-1238
<https://doi.org/10.1007/s0Q234-020-02439-3>
- 1.104 Ferreti LA, Leitao CA, Teixeira BCdA, Lopes Neto FDN, Zetola VF, Lange MC. The use of e-ASPECTS in acute stroke care: validation of method performance compared to the performance of specialists. *Arquivos de Neuro-Psiquiatria.* 2020;78:757-761
https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0004-282X2020001200757&nrm=iso
- 1.105 Brinjikji W, Abbasi M, Arnold C, Benson JC, Braksick SA, Campeau N, et al. e-ASPECTS software improves interobserver agreement and accuracy of interpretation of aspects score. *Interv Neuroradiol.* 2021;0:15910199211011861
<https://pubmed.ncbi.nlm.nih.gov/33853441/>
- 1.106 Guberina N, Dietrich U, Radbruch A, Goebel J, Deuschi C, Ringelstein A, et al. Detection of early infarction signs with machine learning-based diagnosis by means of the Alberta Stroke Program Early CT score (ASPECTS) in the clinical routine. *Neuro radiology.* 2018;60:889-901
<https://www.ncbi.nlm.nih.gov/pubmed/30066278>
- 1.107 Bouslama M, Ravindran K, Harston G, Rodrigues GM, Pisani L, Haussen DC, et al. Noncontrast Computed Tomography e-Stroke Infarct Volume Is Similar to RAPID Computed Tomography Perfusion in Estimating Postreperfusion Infarct Volumes. *Stroke.* 2021;52:634-641
<https://pubmed.ncbi.nlm.nih.gov/33430633/>
- 1.108 Nagel S, Joly O, Pfaff J, Papanagiotou P, Fassbender K, Reith W, et al. e-ASPECTS derived acute ischemic volumes on non-contrast-enhanced computed tomography images. *Int J Stroke.* 2020;15:995-1001
<https://www.ncbi.nlm.nih.gov/pubmed/31570065>
- 1.109 Kral J, Cabal M, Kasickova L, Havelka J, Jonszta T, Volny O, et al. Machine learning volumetry of ischemic brain lesions on CT after thrombectomy-prospective diagnostic accuracy study in ischemic stroke patients. *Neuroradiology.* 2020;62:1239-1245
<https://link.springer.com/article/10.1007/s00234-020-Q2419-7>
- 1.110 Desai SM, Tonetti DA, Molyneaux BJ, Atchaneeyasakul K, Rocha M, Jovin TG, et al. Interaction between time, ASPECTS, and clinical mismatch. *J Neurointerv Surg.* 2020;12:911-914
<https://www.ncbi.nlm.nih.gov/pubmed/32245842>
- 1.111 Nagel S, Herweh C, Pfaff JAR, Schieber S, Schonenberger S, Mohlenbruch MA, et al. Simplified selection criterion for patients with longer or unknown time to treatment predict good outcome

- after mechanical thrombectomy. *J Neuro interv Surg.* 2019;11:559-562 <https://www.ncbi.nlm.nih.gov/pubmed/30368472>
- 1.112 Sykora M, Kellert L, Michel P, Eskandari A, Feil K, Remi J, et al. Thrombolysis in Stroke With Unknown Onset Based on Non-Contrast Computerized Tomography (TRUST CT). *J Am Heart Assoc.* 2020;9:e014265 <https://www.ncbi.nlm.nih.gov/pubmed/32067594>
- 1.113 Nagel S, Wang X, Carcel C, Robinson T, Lindley RI, Chalmers J, et al. Clinical Utility of Electronic Alberta Stroke Program Early Computed Tomography Score Software in the ENCHANTED Trial Database. *Stroke.* 2018;49:1407-1411 <https://www.ncbi.nlm.nih.gov/pubmed/29777Q16>
- 1.114 Pfaff J, Herweh C, Schieber S, Schonenberger S, Bosel J, Ringleb PA, et al. e-ASPECTS Correlates with and Is Predictive of Outcome after Mechanical Thrombectomy. *AJNR Am J Neuroradiol.* 2017;38:1594-1599 <https://www.ncbi.nlm.nih.gov/pubmed/28596195>
- 1.115 Thrombectomy. *J Neuroimaging.* 2018;doi: 10.1111/jon. 12564 <https://www.ncbi.nlm.nih.gov/pubmed/30230093>
- 1.116 Grunwald IQ, Ragoschke-Schumm A, Kettner M, Schwindling L, Roumia S, Helwig S, et al. First Automated Stroke Imaging Evaluation via Electronic Alberta Stroke Program Early CT Score in a Mobile Stroke Unit. *Cerebrovasc Dis.* 2016;42:332-338 <https://www.ncbi.nlm.nih.gov/pubmed/27304197>
- 1.117 Seker F, Pfaff J, Nagel S, Vollherbst D, Gerry S, Mohlenbruch MA, et al. CT Reconstruction Levels Affect Automated and Reader-Based ASPECTS Ratings in Acute Ischemic Stroke. *J Neuroimaging.* 2019;29:62-64 <https://www.ncbi.nlm.nih.gov/pubmed/30230091>
- 1.118 Neuberger U, Nagel S, Pfaff J, Ringleb PA, Herweh C, Bendszus M, et al. Impact of slice thickness on clinical utility of automated Alberta Stroke Program Early Computed Tomography Scores. *Eur Radiol.* 2020;30:3137-3145 <https://pubmed.ncbi.nlm.nih.gov/32086581/>
- 1.119 Schmitt N, Mokli Y, Weyland CS, Gerry S, Herweh C, Ringleb PA, et al. Automated detection and segmentation of intracranial hemorrhage suspect hyperdensities in non-contrast-enhanced CT scans of acute stroke patients. *European Radiology.* 2021 <https://link.springer.com/article/10.1007%2Fs00330-021-08352-4>
- 1.121 Bath PM, Woodhouse LJ, Krishnan K, Sprigg N, Wardlaw JM, Effect of Glyceryl Trinitrate on Haematoma Size in Ultra-acute Intracerebral Haemorrhage - Comparison of Adjudicated and Automated Assessment of Computed Tomographic Images: Data From the Right-2 Trial. Presented at ISC 2020 <https://eventpilotadmin.com/web/page.php?page=IntHtml&project=ISC20&id=1480>

- 1.122 Grunwald IQ, Kulikovski J, Reith W, Gerry S, Namias R, Politi M, et al. Collateral Automation for Triage in Stroke: Evaluating Automated Scoring of Collaterals in Acute Stroke on Computed Tomography Scans. *Cerebrovasc Dis.* 2019;1-6 <https://www.ncbi.nlm.nih.gov/pubmed/31216543>
- 1.123 Austein F, Joly O, Harston G, Watkinson J, Langguth P and Jansen O, Stability and equivalence of a newly developed fully-automated CT perfusion post processing software for analysis in patients with acute anterior large vessel occlusion. *International Journal of Stroke.* 2020;15:3-752 https://journals.sagepub.com/toc/wsoa/15/1_suppl
- 1.124 Pisani L, Haussen D, Mohammaden M, Camara C, Rodrigues G, Liberato B, Al-Bayati A, Peterson R, Frankel M and Nogueira R. Comparison of two automated CT perfusion packages on acute stroke assessment. *International Journal of Stroke.* 2020;15:3-752 https://journals.sagepub.com/toc/wsoa/15/1_suppl
- 1.125 Purrucker JC, Mattern N, Herweh C, Mohlenbruch M, Ringleb PA, Nagel S, et al. Electronic Alberta Stroke Program Early CT score change and functional outcome in a drip-and-ship stroke service. *J Neurointerv Surg.* 2020;12:252-255 <https://pubmed.ncbi.nlm.nih.gov/31352374/>
- 1.126 Bogner P, Chadaide Z, Lenzser G, Kondakor I, Tarkanyi G, Szukits S, et al. Teleradiology-based stroke network in Western and Southern Transdanubia in Hungary. *Orv HetiL* 2021;162:668-675 <https://pubmed.ncbi.nlm.nih.gov/33838025/>
- 1.127 Nagaratnam K, Harston G, Flossmann E, Canavan C, Geraldes RC, Edwards C. Innovative use of artificial intelligence and digital communication in acute stroke pathway in response to COVID-19. *Future Healthc J.* 2020;7:169-173 <https://pubmed.ncbi.nlm.nih.gov/32550287/>
- 1.128 Markl M, et al. Advanced flow MRI: emerging techniques and applications. *Clin Radiol.* 2016; 71 (8):779-95.
- 1.129 Bivard A, Levi C, Spratt N, Parsons M. Perfusion CT in Acute stroke: a comprehensive analysis of infarct and penumbra. *Radiology [Internet]* 2013;267:543-550. [cited 2019 May 19] Available from: <http://pubs.rsna.org/doi/10.1148/radiol.12120971>.
- 1.130 Yassi N, Parsons MW, Christensen S, Sharma G, Bivard A, Donnan GA, Levi CR, Desmond PM, Davis SM, Campbell BCV. Prediction of Poststroke hemorrhagic transformation using computed tomography perfusion. *Stroke* 2013;44:3039-3043.
- 1.131 Goyal M, Demchuk AM, Menon BK, Eesa M, Rempel JL, Thornton J, Roy D, Jovin TG, Willinsky RA, Sapkota BL, et al. Randomized assessment of rapid endovascular treatment of ischemic stroke. *N Engl J Med* 2015;372:1019-1030.

- 1.132 Albers GW, Marks MP, Kemp S, Christensen S, Tsai JP, Ortega-Gutierrez S, McTaggart RA, Torbey MT, Kim-Tenser M, Leslie-Mazwi T, et al. Thrombectomy for stroke at 6 to 16 hours with selection by perfusion imaging. *N Engl J Med* [Internet] 2018;378:708-718. Available from: <http://www.nejm.org/doi/10.1056/NEJ-Moa1713973>.
- 1.133 Nogueira RG, Jadhav AP, Haussen DC, Bonafe A, Budzik RF, Bhuva P, Yavagal DR, Ribo M, Cognard C, Hanel RA, et al. Thrombectomy 6 to 24 hours after stroke with a mis-match between deficit and infarct. *N Engl J Med* 2018;378:11-21.
- 1.134 Chen C, Bivard A, Lin L, Levi CR, Spratt NJ, Parsons MW. Thresholds for infarction vary between gray matter and white matter in acute ischemic stroke: A CT perfusion study. *J Cereb Blood Flow Metab* 2019;39:536-546.
- 1.135 Bivard A, Kleinig T, Miteff F, Butcher K, Lin L, Levi C, Parsons M. Ischemic core thresholds change with time to perfusion: a case control study. *Annal Neurol* [Internet] 2017;82:995-1003. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/ana.25109>.
- 1.136 Austein F, Riedel C, Kerby T, Meyne J, Binder A, Lindner T, Huhndorf M, Wodarg F, Jansen O. Comparison of perfusion CT software to predict the final infarct volume after thrombectomy. *Stroke* 2016;47:2311-2317.
- 1.137 Koopman MS, Berkhemer OA, Geuskens RREG, Emmer BJ, van Walderveen MAA, Jenniskens SFM, van Zwam WH, van Oostenbrugge RJ, van der Lugt A, Dippel DWJ, et al. Comparison of three commonly used CT perfusion software packages in patients with acute ischemic stroke. *J NeuroIntervent Surg* 2019;11:1249-1256.
- 1.138 Fahmi F, Marquering HA, Streekstra GJ, Beenen LFM, Velthuis BK, VanBavel E, Majoie CB. Differences in CT perfusion summary maps for patients with acute ischemic stroke generated by 2 software packages. *Am J Neu-roradiol* 2012;33:2074-2080.
- 1.139 Barber PA, Demchuk AM, Zhang J, Buchan AM. Validity and reliability of a quantitative computed tomography score in predicting outcome of hyperacute stroke before thrombolytic therapy. ASPECTS Study Group. Alberta Stroke Programme early CT score. *Lancet* 2000;355:1670-1674.
- 1.140 Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics* 1977;33:159.
- 1.141 Hoelter P, Muehlen I, Goelitz P, Beuscher V, Schwab S, Doerfler A. Automated ASPECT scoring in acute ischemic stroke: comparison

of three software tools. Available from:
<https://doi.org/10.1007/s00234-020-02439-3>.

- 1.142 Cai H, Fan S, Bian Y, Yang Q, Long Z, Chen L, Tang W, Zhang N, Zhen Y, Li Z. Two-way comparison of brain perfusion image processing software for patients with acute ischemic strokes in real-world. *Neuroradiology* 2021.
- 1.143 Bathla G, Ortega-Gutierrez S, Klotz E, Juergens M, Zevallos CB, Ansari S, Ward CE, Policeni B, Samaniego E, Derdeyn C. Comparing the outcomes of two independent computed tomography perfusion softwares and their impact on therapeutic decisions in acute ischemic stroke. *J NeuroIntervent Surg* [Internet] 2020;12:1028-1032. Available from:
<http://jn.is.bmj.com/lookup/doi/10.1136/>.
- 1.144 Sundaram VK, Goldstein J, Wheelwright D, Aggarwal A, Pawha PS, Doshi A, Fifi JT, de Leacy R, Mocco J, Puig J, et al. Automated aspects in acute ischemic stroke: a comparative analysis with CT perfusion. *Am J Neuroradiol* 2019;40:2033-2038. [neurintsurg-2020-015827](https://doi.org/10.3174/ajnr.A6158).
- 1.145 Bouslama M, Ravindran K, Harston G, Rodrigues GM, Pisani L, Hausen DC, Frankel MR, Nogueira RG. Non-contrast computed tomography e-stroke infarct volume is similar to RAPID computed tomography perfusion in estimating Postreperfusion infarct volumes. *Stroke* 2021; 1:634-641.
- 1.146 Liu QC, Jia ZY, Zhao LB, Cao YZ, Ma G, Shi H bin, Liu S. Agreement and accuracy of ischemic core volume evaluated by three CT perfusion software packages in acute ischemic stroke. *J Stroke Cerebrovasc Dis* [Internet] 2021;30:105872. Available from:
<https://doi.org/10.1016/j.jstrokecerebrovasdis.2021.105872>.
- 1.147 Wintermark M, Maeder P, Verdun FR, Thiran JP, Valley JF, Schnyder P, Meuli R. Using 80 kVp versus 120 kVp in perfusion CT measurement of regional cerebral blood flow. *AJNR Am J Neuroradiol* 2022;21.
- 1.148 Borst J, Marquering HA, Beenen LFM, Berkhemer OA, Dankbaar JW, Riordan AJ, Majoie CBLM. Effect of Extended CT perfusion acquisition time on ischemic core and penumbra volume estimation in patients with acute ischemic Stroke due to a large vessel occlusion. *PLoS One* 2015;10.