

AGE Reader Publication list

December 5th 2022

Key Publications

1. Boersma HE, van Waateringe RP, van der Klauw MM, et al. Skin autofluorescence predicts new cardiovascular disease and mortality in people with type 2 diabetes. *BMC Endocr Disord.* 2021;21(1):14. doi:10.1186/s12902-020-00676-4
2. Viramontes Hörner D, Selby NM, Taal MW. Skin autofluorescence and malnutrition as predictors of mortality in persons receiving dialysis: a prospective cohort study. *J Hum Nutr Diet.* 2020;33(6):852-861. doi:10.1111/jhn.12764
3. Shardlow A, McIntyre NJ, Kolhe NV, et al. The association of skin autofluorescence with cardiovascular events and all-cause mortality in persons with chronic kidney disease stage 3: A prospective cohort study. *PLoS Med.* 2020;17(7):e1003163. doi:10.1371/journal.pmed.1003163
4. Hofmann B, Gerull KA, Bloch K, et al. It's all in our skin-Skin autofluorescence-A promising outcome predictor in cardiac surgery: A single centre cohort study. *PLoS One.* 2020;15(6):e0234847. doi:10.1371/journal.pone.0234847
5. van Waateringe RP, Fokkens BT, Slagter SN, et al. Skin autofluorescence predicts incident type 2 diabetes, cardiovascular disease and mortality in the general population. *Diabetologia.* 2019;62(2):269-280. doi:10.1007/s00125-018-4769-x
6. Cavero-Redondo I, Soriano-Cano A, Álvarez-Bueno C, et al. Skin Autofluorescence-Indicated Advanced Glycation End Products as Predictors of Cardiovascular and All-Cause Mortality in High-Risk Subjects: A Systematic Review and Meta-analysis. *J Am Heart Assoc.* 2018;7(18):e009833. doi:10.1161/JAHA.118.009833
7. Yozgatli K, Lefrandt JD, Noordzij MJ, et al. Accumulation of advanced glycation end products is associated with macrovascular events and glycaemic control with microvascular complications in Type 2 diabetes mellitus. *Diabet Med.* Published online April 23, 2018. doi:10.1111/dme.13651
8. de Vos LC, Boersema J, Mulder DJ, Smit AJ, Zeebregts CJ, Lefrandt JD. Skin autofluorescence as a measure of advanced glycation end products deposition predicts 5-year amputation in patients with peripheral artery disease. *Arterioscler Thromb Vasc Biol.* 2015;35(6):1532-1537. doi:10.1161/ATVBAHA.115.305407
9. Wang AYM, Wong CK, Yau YY, Wong S, Chan IHS, Lam CWK. Skin autofluorescence associates with vascular calcification in chronic kidney disease. *Arterioscler Thromb Vasc Biol.* 2014;34(8):1784-1790. doi:10.1161/ATVBAHA.114.303378
10. de Vos LC, Mulder DJ, Smit AJ, et al. Skin autofluorescence is associated with 5-year mortality and cardiovascular events in patients with peripheral artery disease. *Arterioscler Thromb Vasc Biol.* 2014;34(4):933-938. doi:10.1161/ATVBAHA.113.302731
11. Lutgers HL, Gerrits EG, Graaff R, et al. Skin autofluorescence provides additional information to the UK Prospective Diabetes Study (UKPDS) risk score for the estimation of cardiovascular prognosis in type 2 diabetes mellitus. *Diabetologia.* 2009;52(5):789-797. doi:10.1007/s00125-009-1308-9
12. Meerwaldt R, Lutgers HL, Links TP, et al. Skin autofluorescence is a strong predictor of cardiac mortality in diabetes. *Diabetes Care.* 2007;30(1):107-112. doi:10.2337/dc06-1391

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13. Arshi B, Chen J, Ikram MA, Zillikens MC, Kavousi M. Advanced glycation end-products, cardiac function and heart failure in the general population: The Rotterdam Study. *Diabetologia*. Published online November 8, 2022. doi:10.1007/s00125-022-05821-3
14. Smit AJ, van de Zande SC, Mulder DJ. Skin autofluorescence as tool for cardiovascular and diabetes risk prediction. *Curr Opin Nephrol Hypertens*. 2022;31(6):522-526. doi:10.1097/MNH.0000000000000835
15. Majchrzak C, Cougnard-Gregoire A, Le-Goff M, et al. Skin autofluorescence of Advanced Glycation End-products and mortality in older adults: The roles of chronic kidney disease and diabetes. *Nutr Metab Cardiovasc Dis*. Published online August 13, 2022:S0939-4753(22)00336-2. doi:10.1016/j.numecd.2022.08.009
16. Teren M, Schott A, Sedding D, et al. The relationship of skin autofluorescence with diastolic function and HFA-PEFF score in a general population of older people. *Nutr Metab Cardiovasc Dis*. Published online April 29, 2022:S0939-4753(22)00179-X. doi:10.1016/j.numecd.2022.04.008
17. Bjerager J, Dabbah S, Belmouhand M, Rothenbuehler SP, Sander B, Larsen M. Lens fluorescence and skin fluorescence in the Copenhagen Twin Cohort Eye Study: Covariates and heritability. *PLOS ONE*. 2021;16(9):e0256975. doi:10.1371/journal.pone.0256975
18. Gelžinský J, Mayer O, Seidlerová J, et al. Serum biomarkers, skin autofluorescence and other methods. Which parameter better illustrates the relationship between advanced glycation end products and arterial stiffness in the general population? *Hypertens Res*. 2021;44(5):518-527. doi:10.1038/s41440-020-00601-1
19. van de Zande SC, de Vries JK, van den Akker-Scheek I, Zwerver J, Smit AJ. A physically active lifestyle is related to a lower level of skin autofluorescence in a large population with chronic-disease (LifeLines cohort). *J Sport Health Sci*. Published online September 26, 2020:S2095-2546(20)30123-X. doi:10.1016/j.jshs.2020.09.007
20. Chen J, Waqas K, Tan RC, et al. The association between dietary and skin advanced glycation end products: the Rotterdam Study. *Am J Clin Nutr*. 2020;112(1):129-137. doi:10.1093/ajcn/nqaa117
21. Jankowska M, Bobeff K, Baranowska-Jaźwiecka A, et al. Evaluation of skin autofluorescence as a surrogate of advanced glycation end products accumulation in children and adolescents with normal haemoglobin A1c values. *Pediatr Endocrinol Diabetes Metab*. 2020;26(1):1-9. doi:10.5114/pedim.2020.93251
22. van Waateringe RP, Fokkens BT, Slagter SN, et al. Skin autofluorescence predicts incident type 2 diabetes, cardiovascular disease and mortality in the general population. *Diabetologia*. 2019;62(2):269-280. doi:10.1007/s00125-018-4769-x
23. Isami F, West BJ, Nakajima S, Yamagishi SI. Association of advanced glycation end products, evaluated by skin autofluorescence, with lifestyle habits in a general Japanese population. *J Int Med Res*. 2018;46(3):1043-1051. doi:10.1177/0300060517736914
24. Botros N, Sluik D, van Waateringe RP, de Vries JHM, Geelen A, Feskens EJM. Advanced glycation end-products (AGEs) and associations with cardio-metabolic, lifestyle, and dietary factors in a general population: the NQplus study. *Diabetes Metab Res Rev*. 2017;33(5). doi:10.1002/dmrr.2892

25. van Dooren FEP, Pouwer F, Schalkwijk CG, et al. Advanced Glycation End Product (AGE) Accumulation in the Skin is Associated with Depression: The Maastricht Study. *Depress Anxiety*. 2017;34(1):59-67. doi:10.1002/da.22527
26. van Waateringe RP, Slagter SN, van Beek AP, et al. Skin autofluorescence, a non-invasive biomarker for advanced glycation end products, is associated with the metabolic syndrome and its individual components. *Diabetol Metab Syndr*. 2017;9:42. doi:10.1186/s13098-017-0241-1
27. van Waateringe RP, Mook-Kanamori MJ, Slagter SN, et al. The association between various smoking behaviors, cotinine biomarkers and skin autofluorescence, a marker for advanced glycation end product accumulation. *PLoS One*. 2017;12(6):e0179330. doi:10.1371/journal.pone.0179330
28. van Waateringe RP, Slagter SN, van der Klauw MM, et al. Lifestyle and clinical determinants of skin autofluorescence in a population-based cohort study. *Eur J Clin Invest*. 2016;46(5):481-490. doi:10.1111/eci.12627
29. Federico G, Gori M, Randazzo E, Vierucci F. Skin advanced glycation end-products evaluation in infants according to the type of feeding and mother's smoking habits. *SAGE Open Med*. 2016;4:2050312116682126. doi:10.1177/2050312116682126
30. Ahmad MS, Damanhoury ZA, Kimhofer T, Mosli HH, Holmes E. A new gender-specific model for skin autofluorescence risk stratification. *Sci Rep*. 2015;5:10198. doi:10.1038/srep10198
31. Noordzij MJ, Lefrandt JD, Graaff R, Smit AJ. Skin autofluorescence and glycemic variability. *Diabetes Technol Ther*. 2010;12(7):581-585. doi:10.1089/dia.2010.0014
32. Stirban A, Nandreaan S, Negrean M, Koschinsky T, Tschöepe D. Skin autofluorescence increases postprandially in human subjects. *Diabetes Technol Ther*. 2008;10(3):200-205. doi:10.1089/dia.2007.0275

AGE Reader in diabetes

33. Maran A, Morieri ML, Falaguasta D, Avogaro A, Fadini GP. The Fast-Glycator Phenotype, Skin Advanced Glycation End Products, and Complication Burden Among People With Type 1 Diabetes. *Diabetes Care*. Published online August 15, 2022:dc220980. doi:10.2337/dc22-0980
34. Sakly R, Wolffenbuttel BHR, Khochtali I, et al. Increased skin autofluorescence of advanced glycation end products (AGEs) in subjects with cardiovascular risk factors. *Int J Diabetes Dev Ctries*. Published online August 2, 2022. doi:10.1007/s13410-022-01121-z
35. Rigalleau V, Larroumet A, Ducos C, et al. Cardiovascular events after a dramatic reduction of HbA1c in hospitalized subjects with type 2 diabetes and high long-term glucose exposure. *J Diabetes Complications*. Published online June 21, 2022:108234. doi:10.1016/j.jdiacomp.2022.108234
36. Planas A, Simó-Servat O, Hernández C, Simó R. Advanced Glycations End Products in the Skin as Biomarkers of Cardiovascular Risk in Type 2 Diabetes. *Int J Mol Sci*. 2022;23(11):6234. doi:10.3390/ijms23116234
37. Kamiński M, Kulecki M, Lachowski P, et al. Erectile Dysfunction in Individuals with Type 1 Diabetes is Associated with Long-term Metabolic Control and Diabetic Complications: A Cross-Sectional Study. *Int J Angiol*. 2022;31(2):97-106. doi:10.1055/s-0041-1735209
38. Choi LS, Ahmed K, Kim YS, Yim JE. Skin accumulation of advanced glycation end products and

- cardiovascular risk in Korean patients with type 2 diabetes mellitus. *Heliyon*. 2022;8(6):e09571. doi:10.1016/j.heliyon.2022.e09571
39. Škrha J, Horová E, Šoupal J, et al. Skin autofluorescence corresponds to microvascular reactivity in diabetes mellitus. *J Diabetes Complications*. Published online April 28, 2022:108206. doi:10.1016/j.jdiacomp.2022.108206
 40. Papachristou S, Pafili K, Trypsianis G, Papazoglou D, Vadikolias K, Papanas N. Correlation between skin advanced glycation end products and cardiac autonomic neuropathy among subjects with type 2 diabetes mellitus. *Exp Clin Endocrinol Diabetes*. Published online April 21, 2022. doi:10.1055/a-1831-0991
 41. Zhao XW, Yue WX, Zhang SW, Chen Q. Correlation between the accumulation of skin glycosylation end products and the development of type 2 diabetic peripheral neuropathy. *BMC Endocr Disord*. 2022;22:106. doi:10.1186/s12902-022-00997-6
 42. Filipov A, Fuchshuber H, Kraus J, Ebert AD, Sandikci V, Alonso A. Measuring of Advanced Glycation End Products in Acute Stroke Care: Skin Autofluorescence as a Predictor of Ischemic Stroke Outcome in Patients with Diabetes Mellitus. *J Clin Med*. 2022;11(6):1625. doi:10.3390/jcm11061625
 43. Podolakova K, Barak L, Jancova E, Stanik J, Sebekova K, Podracka L. The Bright Side of Skin Autofluorescence Determination in Children and Adolescents with Newly Diagnosed Type 1 Diabetes Mellitus: A Potential Predictor of Remission? *International Journal of Environmental Research and Public Health*. 2022;19(19):11950. doi:10.3390/ijerph191911950
 44. Varikasuvu SR, Varshney S, Sulekar H. Skin Autofluorescence as a Novel and Noninvasive Technology for Advanced Glycation End Products in Diabetic Foot Ulcers: A Systematic Review and Meta-analysis. *Adv Skin Wound Care*. 2021;34(11):1-8. doi:10.1097/01.ASW.0000792932.01773.d5
 45. Jin Q, Lau ES, Luk AO, et al. Skin autofluorescence is associated with progression of kidney disease in type 2 diabetes: A prospective cohort study from the Hong Kong diabetes biobank. *Nutrition, Metabolism and Cardiovascular Diseases*. 2021;0(0). doi:10.1016/j.numecd.2021.10.007
 46. Planas A, Simó-Servat O, Bañeras J, et al. Usefulness of skin advanced glycation end products to predict coronary artery calcium score in patients with type 2 diabetes. *Acta Diabetol*. 2021;58(10):1403-1412. doi:10.1007/s00592-021-01735-5
 47. Jin Q, Lau ESH, Luk AOY, et al. Skin autofluorescence is associated with higher risk of cardiovascular events in Chinese adults with type 2 diabetes: A prospective cohort study from the Hong Kong Diabetes Biobank. *J Diabetes Complications*. 2021;35(10):108015. doi:10.1016/j.jdiacomp.2021.108015
 48. Filipov A, Fuchshuber H, Kraus J, Ebert AD, Sandikci V, Alonso A. Skin Autofluorescence is an Independent Predictor of Post Stroke Infection in Diabetes. *J Stroke Cerebrovasc Dis*. 2021;30(9):105949. doi:10.1016/j.jstrokecerebrovasdis.2021.105949
 49. Salazar J, Navarro C, Ortega Á, et al. Advanced Glycation End Products: New Clinical and Molecular Perspectives. *Int J Environ Res Public Health*. 2021;18(14):7236. doi:10.3390/ijerph18147236
 50. Salazar J, Navarro C, Ortega Á, et al. Advanced Glycation End Products: New Clinical and Molecular Perspectives. *Int J Environ Res Public Health*. 2021;18(14):7236. doi:10.3390/ijerph18147236

51. Birukov A, Cuadrat R, Polemiti E, Eichelmann F, Schulze MB. Advanced glycation end-products, measured as skin autofluorescence, associate with vascular stiffness in diabetic, pre-diabetic and normoglycemic individuals: a cross-sectional study. *Cardiovasc Diabetol*. 2021;20(1):110. doi:10.1186/s12933-021-01296-5
52. Foussard N, Larroumet A, Rigo M, et al. Skin autofluorescence predicts cancer in subjects with type 2 diabetes. *BMJ Open Diabetes Res Care*. 2021;9(1):e001312. doi:10.1136/bmjdr-2020-001312
53. Papachristou S, Pafili K, Papanas N. Skin AGEs and diabetic neuropathy. *BMC Endocr Disord*. 2021;21(1):28. doi:10.1186/s12902-021-00697-7
54. Boersma HE, van Waateringe RP, van der Klauw MM, et al. Skin autofluorescence predicts new cardiovascular disease and mortality in people with type 2 diabetes. *BMC Endocr Disord*. 2021;21(1):14. doi:10.1186/s12902-020-00676-4
55. Papachristou S, Pafili K, Trypsianis G, Papazoglou D, Vadikolias K, Papanas N. Skin Advanced Glycation End Products among Subjects with Type 2 Diabetes Mellitus with or without Distal Sensorimotor Polyneuropathy. *J Diabetes Res*. 2021;2021:6045677. doi:10.1155/2021/6045677
56. Takayanagi Y, Yamanaka M, Fujihara J, et al. Evaluation of Relevance between Advanced Glycation End Products and Diabetic Retinopathy Stages Using Skin Autofluorescence. *Antioxidants (Basel)*. 2020;9(11):1100. doi:10.3390/antiox9111100
57. Rigo M, Lecocq M, Brouzeng C, et al. Skin autofluorescence, a marker of glucose memory in type 2 diabetes. *Metabol Open*. 2020;7:100038. doi:10.1016/j.metop.2020.100038
58. Cosson E, Gary F, Nguyen MT, et al. Gradual increase in advanced glycation end-products from no diabetes to early and regular gestational diabetes: A case-control study. *Diabetes Metab*. 2019;45(6):586-589. doi:10.1016/j.diabet.2018.01.007
59. Fernando ME, Crowther RG, Lazzarini PA, et al. Within- and Between-Body-Site Agreement of Skin Autofluorescence Measurements in People With and Without Diabetes-Related Foot Disease. *J Diabetes Sci Technol*. 2019;13(5):836-846. doi:10.1177/1932296819853555
60. Wan L, Qin G, Yan W, Sun T. Skin Autofluorescence Is Associated with Diabetic Peripheral Neuropathy in Chinese Patients with Type 2 Diabetes: A Cross-Sectional Study. *Genet Test Mol Biomarkers*. 2019;23(6):387-392. doi:10.1089/gtmb.2018.0328
61. Jud P, Sourij H. Therapeutic options to reduce advanced glycation end products in patients with diabetes mellitus: A review. *Diabetes Res Clin Pract*. 2019;148:54-63. doi:10.1016/j.diabres.2018.11.016
62. Fokkens BT, van Waateringe RP, Mulder DJ, Wolffenbuttel BHR, Smit AJ. Skin autofluorescence improves the Finnish Diabetes Risk Score in the detection of diabetes in a large population-based cohort: The LifeLines Cohort Study. *Diabetes Metab*. 2018;44(5):424-430. doi:10.1016/j.diabet.2017.09.002
63. Cavero-Redondo I, Soriano-Cano A, Álvarez-Bueno C, et al. Skin Autofluorescence-Indicated Advanced Glycation End Products as Predictors of Cardiovascular and All-Cause Mortality in High-Risk Subjects: A Systematic Review and Meta-analysis. *J Am Heart Assoc*. 2018;7(18):e009833. doi:10.1161/JAHA.118.009833
64. Osawa S, Katakami N, Sato I, et al. Skin autofluorescence is associated with vascular complications in patients with type 2 diabetes. *J Diabetes Complications*. 2018;32(9):839-844. doi:10.1016/j.jdiacomp.2018.06.009

65. Blanc-Bisson C, Velayoudom-Cephise FL, Cougnard-Gregoire A, et al. Skin autofluorescence predicts major adverse cardiovascular events in patients with type 1 diabetes: a 7-year follow-up study. *Cardiovasc Diabetol*. 2018;17(1):82. doi:10.1186/s12933-018-0718-8
66. Yozgatli K, Lefrandt JD, Noordzij MJ, et al. Accumulation of advanced glycation end products is associated with macrovascular events and glycaemic control with microvascular complications in Type 2 diabetes mellitus. *Diabet Med*. Published online April 23, 2018. doi:10.1111/dme.13651
67. Yoshioka K. Skin Autofluorescence is a Noninvasive Surrogate Marker for Diabetic Microvascular Complications and Carotid Intima-Media Thickness in Japanese Patients with Type 2 Diabetes: A Cross-sectional Study. *Diabetes Ther*. 2018;9(1):75-85. doi:10.1007/s13300-017-0339-3
68. Rajaobelina K, Helmer C, Velayoudom-Céphis FL, et al. Progression of skin autofluorescence of AGEs over 4 years in patients with type 1 diabetes. *Diabetes Metab Res Rev*. 2017;33(7). doi:10.1002/dmrr.2917
69. Li Z, Wang G, Zhu YJ, et al. The relationship between circulating irisin levels and tissues AGE accumulation in type 2 diabetes patients. *Biosci Rep*. 2017;37(3):BSR20170213. doi:10.1042/BSR20170213
70. Mori H, Kuroda A, Araki M, et al. Advanced glycation end-products are a risk for muscle weakness in Japanese patients with type 1 diabetes. *J Diabetes Investig*. 2017;8(3):377-382. doi:10.1111/jdi.12582
71. Cho YH, Craig ME, Januszewski AS, et al. Higher skin autofluorescence in young people with Type 1 diabetes and microvascular complications. *Diabet Med*. 2017;34(4):543-550. doi:10.1111/dme.13280
72. Osawa S, Katakami N, Kuroda A, et al. Skin Autofluorescence is Associated with Early-stage Atherosclerosis in Patients with Type 1 Diabetes. *J Atheroscler Thromb*. 2017;24(3):312-326. doi:10.5551/jat.35592
73. Vollenbrock CE, Van Waateringe RP, Veeze HJ, Aanstoot HJ, Wolffenbuttel BHR. Skin autofluorescence is increased in young people with type 1 diabetes exposed to secondhand smoking. *J Diabetes*. 2017;9(3):308-310. doi:10.1111/1753-0407.12498
74. Dimova R, Tankova T, Guergueltcheva V, et al. Risk factors for autonomic and somatic nerve dysfunction in different stages of glucose tolerance. *J Diabetes Complications*. 2017;31(3):537-543. doi:10.1016/j.jdiacomp.2016.11.002
75. Bentata R, Cougnard-Grégoire A, Delyfer MN, et al. Skin autofluorescence, renal insufficiency and retinopathy in patients with type 2 diabetes. *J Diabetes Complications*. 2017;31(3):619-623. doi:10.1016/j.jdiacomp.2016.10.028
76. Rajaobelina K, Farges B, Nov S, et al. Skin autofluorescence and peripheral neuropathy four years later in type 1 diabetes. *Diabetes Metab Res Rev*. 2017;33(2). doi:10.1002/dmrr.2832
77. Kouidrat Y, Zaitouni A, Amad A, et al. Skin autofluorescence (a marker for advanced glycation end products) and erectile dysfunction in diabetes. *J Diabetes Complications*. 2017;31(1):108-113. doi:10.1016/j.jdiacomp.2016.10.026
78. Fokkens BT, Mulder DJ, Schalkwijk CG, Scheijen JL, Smit AJ, Los LI. Vitreous advanced glycation endproducts and α -dicarbonyls in retinal detachment patients with type 2 diabetes mellitus and non-diabetic controls. *PLoS One*. 2017;12(3):e0173379. doi:10.1371/journal.pone.0173379
79. Ahmad MS, Kimhofer T, Ahmad S, et al. Ethnicity and skin autofluorescence-based risk-engines for cardiovascular disease and diabetes mellitus. *PLoS One*. 2017;12(9):e0185175.

doi:10.1371/journal.pone.0185175

80. Araszkievicz A, Gandecka A, Nowicki M, et al. Association between small fiber neuropathy and higher skin accumulation of advanced glycation end products in patients with type 1 diabetes. *Pol Arch Med Wewn.* 2016;126(11):847-853. doi:10.20452/pamw.3649
81. Hangai M, Takebe N, Honma H, et al. Association of Advanced Glycation End Products with coronary Artery Calcification in Japanese Subjects with Type 2 Diabetes as Assessed by Skin Autofluorescence. *J Atheroscler Thromb.* 2016;23(10):1178-1187. doi:10.5551/jat.30155
82. Hashimoto K, Kunikata H, Yasuda M, et al. The relationship between advanced glycation end products and ocular circulation in type 2 diabetes. *J Diabetes Complications.* 2016;30(7):1371-1377. doi:10.1016/j.jdiacomp.2016.04.024
83. Vélayoudom-Céphise FL, Rajaobelina K, Helmer C, et al. Skin autofluorescence predicts cardio-renal outcome in type 1 diabetes: a longitudinal study. *Cardiovasc Diabetol.* 2016;15(1):127. doi:10.1186/s12933-016-0448-8
84. Banser A, Naafs JC, Hoorweg-Nijman JJ, van de Garde EM, van der Vorst MM. Advanced glycation end products, measured in skin, vs. HbA1c in children with type 1 diabetes mellitus. *Pediatr Diabetes.* 2016;17(6):426-432. doi:10.1111/pedi.12311
85. Fokkens BT, Smit AJ. Skin fluorescence as a clinical tool for non-invasive assessment of advanced glycation and long-term complications of diabetes. *Glycoconj J.* 2016;33(4):527-535. doi:10.1007/s10719-016-9683-1
86. Furst JR, Bandeira LC, Fan WW, et al. Advanced Glycation Endproducts and Bone Material Strength in Type 2 Diabetes. *J Clin Endocrinol Metab.* 2016;101(6):2502-2510. doi:10.1210/jc.2016-1437
87. Maury E, Savel J, Grouthier V, et al. Is skin autofluorescence a marker of metabolic memory in pregnant women with diabetes? *Diabet Med.* 2015;32(12):1575-1579. doi:10.1111/dme.12803
88. Monnier VM, Sun W, Gao X, et al. Skin collagen advanced glycation endproducts (AGEs) and the long-term progression of sub-clinical cardiovascular disease in type 1 diabetes. *Cardiovasc Diabetol.* 2015;14:118. doi:10.1186/s12933-015-0266-4
89. Araszkievicz A, Soska J, Borucka K, et al. In diabetic Charcot neuroarthropathy impaired microvascular function is related to long lasting metabolic control and low grade inflammatory process. *Microvasc Res.* 2015;101:143-147. doi:10.1016/j.mvr.2015.07.008
90. Mácsai E, Rakk E, Miléder M, Fulcz Á. Correlations between skin autofluorescence and conventional glycemic markers in patients with diabetes. *Orv Hetil.* 2015;156(33):1341-1347. doi:10.1556/650.2015.30229
91. de Jonge S, Rozenberg R, Vieyra B, et al. Achilles tendons in people with type 2 diabetes show mildly compromised structure: an ultrasound tissue characterisation study. *Br J Sports Med.* 2015;49(15):995-999. doi:10.1136/bjsports-2014-093696
92. Krul-Poel YHM, Agca R, Lips P, van Wijland H, Stam F, Simsek S. Vitamin D status is associated with skin autofluorescence in patients with type 2 diabetes mellitus: a preliminary report. *Cardiovasc Diabetol.* 2015;14:89. doi:10.1186/s12933-015-0250-z
93. Rajaobelina K, Cougnard-Gregoire A, Delcourt C, Gin H, Barberger-Gateau P, Rigalleau V. Autofluorescence of Skin Advanced Glycation End Products: Marker of Metabolic Memory in Elderly Population. *J Gerontol A Biol Sci Med Sci.* 2015;70(7):841-846. doi:10.1093/gerona/glu243
94. Yasuda M, Shimura M, Kunikata H, et al. Relationship of skin autofluorescence to severity of

- retinopathy in type 2 diabetes. *Curr Eye Res.* 2015;40(3):338-345.
doi:10.3109/02713683.2014.918152
95. Rigalleau V, Cougnard-Gregoire A, Nov S, et al. Association of advanced glycation end products and chronic kidney disease with macroangiopathy in type 2 diabetes. *J Diabetes Complications.* 2015;29(2):270-274. doi:10.1016/j.jdiacomp.2014.10.011
 96. Liu C, Xu L, Gao H, et al. The association between skin autofluorescence and vascular complications in Chinese patients with diabetic foot ulcer: an observational study done in Shanghai. *Int J Low Extrem Wounds.* 2015;14(1):28-36. doi:10.1177/1534734614568375
 97. Araszkievicz A, Naskret D, Zozulinska-Ziolkiewicz D, et al. Skin autofluorescence is associated with carotid intima-media thickness, diabetic microangiopathy, and long-lasting metabolic control in type 1 diabetic patients. Results from Poznan Prospective Study. *Microvasc Res.* 2015;98:62-67. doi:10.1016/j.mvr.2015.01.002
 98. Hu H, Jiang H, Ren H, Hu X, Wang X, Han C. AGEs and chronic subclinical inflammation in diabetes: disorders of immune system. *Diabetes Metab Res Rev.* 2015;31(2):127-137. doi:10.1002/dmrr.2560
 99. Bakker SF, Tushuizen ME, Gözütok E, et al. Advanced glycation end products (AGEs) and the soluble receptor for AGE (sRAGE) in patients with type 1 diabetes and coeliac disease. *Nutr Metab Cardiovasc Dis.* 2015;25(2):230-235. doi:10.1016/j.numecd.2014.10.009
 100. Moran C, Münch G, Forbes JM, et al. Type 2 diabetes, skin autofluorescence, and brain atrophy. *Diabetes.* 2015;64(1):279-283. doi:10.2337/db14-0506
 101. Hirano T, Iesato Y, Toriyama Y, Imai A, Chiba D, Murata T. Correlation between diabetic retinopathy severity and elevated skin autofluorescence as a marker of advanced glycation end-product accumulation in type 2 diabetic patients. *J Diabetes Complications.* 2014;28(5):729-734. doi:10.1016/j.jdiacomp.2014.03.003
 102. Stirban A, Heinemann L. Skin Autofluorescence - A Non-invasive Measurement for Assessing Cardiovascular Risk and Risk of Diabetes. *Eur Endocrinol.* 2014;10(2):106-110. doi:10.17925/EE.2014.10.02.106
 103. Llauredó G, Ceperuelo-Mallafré V, Vilardell C, et al. Advanced glycation end products are associated with arterial stiffness in type 1 diabetes. *J Endocrinol.* 2014;221(3):405-413. doi:10.1530/JOE-13-0407
 104. Stirban A, Gawlowski T, Roden M. Vascular effects of advanced glycation endproducts: Clinical effects and molecular mechanisms. *Mol Metab.* 2014;3(2):94-108. doi:10.1016/j.molmet.2013.11.006
 105. Fukami K, Yamagishi SI, Sakai K, et al. Potential inhibitory effects of L-carnitine supplementation on tissue advanced glycation end products in patients with hemodialysis. *Rejuvenation Res.* 2013;16(6):460-466. doi:10.1089/rej.2013.1459
 106. Genevieve M, Vivot A, Gonzalez C, et al. Skin autofluorescence is associated with past glycaemic control and complications in type 1 diabetes mellitus. *Diabetes Metab.* 2013;39(4):349-354. doi:10.1016/j.diabet.2013.03.003
 107. Vouillarmet J, Maucort-Boulch D, Michon P, Thivolet C. Advanced glycation end products assessed by skin autofluorescence: a new marker of diabetic foot ulceration. *Diabetes Technol Ther.* 2013;15(7):601-605. doi:10.1089/dia.2013.0009
 108. Mácsai E, Takáts Z, Derzbach L, Körner A, Vásárhelyi B. Verification of skin autofluorescence

- values by mass spectrometry in adolescents with type 1 diabetes: brief report. *Diabetes Technol Ther.* 2013;15(3):269-272. doi:10.1089/dia.2012.0251
109. Dörhöfer L, Lammert A, Krane V, et al. Study design of DIACORE (DIAbetes COHoRtE) - a cohort study of patients with diabetes mellitus type 2. *BMC Med Genet.* 2013;14:25. doi:10.1186/1471-2350-14-25
 110. Smit AJ, Smit JM, Botterblom GJ, Mulder DJ. Skin autofluorescence based decision tree in detection of impaired glucose tolerance and diabetes. *PLoS One.* 2013;8(6):e65592. doi:10.1371/journal.pone.0065592
 111. Skrha J, Soupal J, Loni Ekali G, et al. Skin autofluorescence relates to soluble receptor for advanced glycation end-products and albuminuria in diabetes mellitus. *J Diabetes Res.* 2013;2013:650694. doi:10.1155/2013/650694
 112. Klenovics KS, Boor P, Somoza V, Celec P, Fogliano V, Sebeková K. Advanced glycation end products in infant formulas do not contribute to insulin resistance associated with their consumption. *PLoS One.* 2013;8(1):e53056. doi:10.1371/journal.pone.0053056
 113. Noordzij MJ, Mulder DJ, Oomen PHN, et al. Skin autofluorescence and risk of micro- and macrovascular complications in patients with Type 2 diabetes mellitus-a multi-centre study. *Diabet Med.* 2012;29(12):1556-1561. doi:10.1111/dme.12005
 114. de Ranitz-Greven WL, Kaasenbrood L, Poucki WK, et al. Advanced glycation end products, measured as skin autofluorescence, during normal pregnancy and pregnancy complicated by diabetes mellitus. *Diabetes Technol Ther.* 2012;14(12):1134-1139. doi:10.1089/dia.2012.0120
 115. Mácsai E. Skin autofluorescence measurement in the clinical practice of diabetology and nephrology. *Orv Hetil.* 2012;153(42):1651-1657. doi:10.1556/OH.2012.29453
 116. Prasad A, Bekker P, Tsimikas S. Advanced glycation end products and diabetic cardiovascular disease. *Cardiol Rev.* 2012;20(4):177-183. doi:10.1097/CRD.0b013e318244e57c
 117. Januszewski AS, Sachithanandan N, Karschimkus C, et al. Non-invasive measures of tissue autofluorescence are increased in Type 1 diabetes complications and correlate with a non-invasive measure of vascular dysfunction. *Diabet Med.* 2012;29(6):726-733. doi:10.1111/j.1464-5491.2011.03562.x
 118. Hu H, Han C mao, Hu X lei, Ye W lan, Huang W juan, Smit AJ. Elevated skin autofluorescence is strongly associated with foot ulcers in patients with diabetes: a cross-sectional, observational study of Chinese subjects. *J Zhejiang Univ Sci B.* 2012;13(5):372-377. doi:10.1631/jzus.B1100249
 119. Tanaka K, Tani Y, Asai J, et al. Skin autofluorescence is associated with severity of vascular complications in Japanese patients with Type 2 diabetes. *Diabet Med.* 2012;29(4):492-500. doi:10.1111/j.1464-5491.2011.03448.x
 120. den Engelsen C, van den Donk M, Gorter KJ, Salomé PL, Rutten GE. Advanced glycation end products measured by skin autofluorescence in a population with central obesity. *Dermatoendocrinol.* 2012;4(1):33-38. doi:10.4161/derm.17999
 121. de Ranitz-Greven WL, Bos DC, Poucki WK, et al. Advanced glycation end products, measured as skin autofluorescence, at diagnosis in gestational diabetes mellitus compared with normal pregnancy. *Diabetes Technol Ther.* 2012;14(1):43-49. doi:10.1089/dia.2011.0105
 122. Mulder DJ, de Boer JF, Graaff R, et al. Skin autofluorescence is inversely related to HDL anti-oxidative capacity in type 2 diabetes mellitus. *Atherosclerosis.* 2011;218(1):102-106. doi:10.1016/j.atherosclerosis.2011.05.011

123. Araszkiwicz A, Naskret D, Niedzwiecki P, Samborski P, Wierusz-Wysocka B, Zozulinska-Ziolkiewicz D. Increased accumulation of skin advanced glycation end products is associated with microvascular complications in type 1 diabetes. *Diabetes Technol Ther*. 2011;13(8):837-842. doi:10.1089/dia.2011.0043
124. Bos DC, de Ranitz-Greven WL, de Valk HW. Advanced glycation end products, measured as skin autofluorescence and diabetes complications: a systematic review. *Diabetes Technol Ther*. 2011;13(7):773-779. doi:10.1089/dia.2011.0034
125. Samborski P, Naskręt D, Araszkiwicz A, Niedźwiecki P, Zozulińska-Ziółkiewicz D, Wierusz-Wysocka B. Assessment of skin autofluorescence as a marker of advanced glycation end product accumulation in type 1 diabetes. *Pol Arch Med Wewn*. 2011;121(3):67-72.
126. Willemsen S, Hartog JW, Hummel YM, et al. Tissue advanced glycation end products are associated with diastolic function and aerobic exercise capacity in diabetic heart failure patients. *Eur J Heart Fail*. 2011;13(1):76-82. doi:10.1093/eurjhf/hfq168
127. Chabroux S, Canouï-Poitrine F, Reffet S, et al. Advanced glycation end products assessed by skin autofluorescence in type 1 diabetics are associated with nephropathy, but not retinopathy. *Diabetes Metab*. 2010;36(2):152-157. doi:10.1016/j.diabet.2009.11.003
128. Lutgers HL, Gerrits EG, Graaff R, et al. Skin autofluorescence provides additional information to the UK Prospective Diabetes Study (UKPDS) risk score for the estimation of cardiovascular prognosis in type 2 diabetes mellitus. *Diabetologia*. 2009;52(5):789-797. doi:10.1007/s00125-009-1308-9
129. Gerrits EG, Lutgers HL, Kleefstra N, et al. Skin autofluorescence: a tool to identify type 2 diabetic patients at risk for developing microvascular complications. *Diabetes Care*. 2008;31(3):517-521. doi:10.2337/dc07-1755
130. Monami M, Lamanna C, Gori F, Bartalucci F, Marchionni N, Mannucci E. Skin autofluorescence in type 2 diabetes: beyond blood glucose. *Diabetes Res Clin Pract*. 2008;79(1):56-60. doi:10.1016/j.diabres.2007.07.007
131. Meerwaldt R, Lutgers HL, Links TP, et al. Skin autofluorescence is a strong predictor of cardiac mortality in diabetes. *Diabetes Care*. 2007;30(1):107-112. doi:10.2337/dc06-1391
132. Lutgers HL, Graaff R, Links TP, et al. Skin Autofluorescence as a Noninvasive Marker of Vascular Damage in Patients With Type 2 Diabetes. *Diabetes Care*. 2006;29(12):2654-2659. doi:10.2337/dc05-2173
133. Meerwaldt R, Links TP, Graaff R, et al. Increased accumulation of skin advanced glycation end-products precedes and correlates with clinical manifestation of diabetic neuropathy. *Diabetologia*. 2005;48(8):1637-1644. doi:10.1007/s00125-005-1828-x
134. Smit AJ, Lutgers HL. The clinical relevance of advanced glycation endproducts (AGE) and recent developments in pharmaceuticals to reduce AGE accumulation. *Curr Med Chem*. 2004;11(20):2767-2784. doi:10.2174/0929867043364342

AGE Reader in renal disease

135. Aloui S, Ajimi K, Hamouda M, et al. Skin autofluorescence profile in Tunisian hemodialysis patients with and without heart failure. Published online November 22, 2021. doi:10.21203/rs.3.rs-900707/v1

136. Forbes JM, Le Bagge S, Righi S, et al. Advanced glycation end products as predictors of renal function in youth with type 1 diabetes. *Sci Rep.* 2021;11(1):9422. doi:10.1038/s41598-021-88786-4
137. Luketin M, Mizdrak M, Boric-Skaro D, et al. Plasma Catestatin Levels and Advanced Glycation End Products in Patients on Hemodialysis. *Biomolecules.* 2021;11(3):456. doi:10.3390/biom11030456
138. Yamazaki T, Mimura I, Tanaka T, Nangaku M. Treatment of Diabetic Kidney Disease: Current and Future. *Diabetes Metab J.* 2021;45(1):11-26. doi:10.4093/dmj.2020.0217
139. Jiang J, Zhang Y, Chen J, et al. Serum and Tissue Levels of Advanced Glycation End Products and Risk of Mortality in Patients on Maintenance Hemodialysis. *Am J Nephrol.* 2021;52(1):8-16. doi:10.1159/000512385
140. Viramontes Hörner D, Selby NM, Taal MW. Skin autofluorescence and malnutrition as predictors of mortality in persons receiving dialysis: a prospective cohort study. *J Hum Nutr Diet.* 2020;33(6):852-861. doi:10.1111/jhn.12764
141. Shardlow A, McIntyre NJ, Kolhe NV, et al. The association of skin autofluorescence with cardiovascular events and all-cause mortality in persons with chronic kidney disease stage 3: A prospective cohort study. *PLoS Med.* 2020;17(7):e1003163. doi:10.1371/journal.pmed.1003163
142. Viramontes Horner D, Kolhe N, Leung J, Fluck R, Selby N, Taal M. Impact of a medium cut-off dialyzer on skin autofluorescence in haemodialysis patients. *Nephrology Dialysis Transplantation.* 2020;35(Supplement_3). doi:10.1093/ndt/gfaa142.P1078
143. Viramontes Hörner D, Selby NM, Taal MW. Factors Associated With Change in Skin Autofluorescence, a Measure of Advanced Glycation End Products, in Persons Receiving Dialysis. *Kidney Int Rep.* 2020;5(5):654-662. doi:10.1016/j.ekir.2020.02.003
144. Viramontes Hörner D, Taal MW. Skin autofluorescence: an emerging biomarker in persons with kidney disease. *Curr Opin Nephrol Hypertens.* 2019;28(6):507-512. doi:10.1097/MNH.0000000000000549
145. Wang CC, Shen MY, Chang KC, Wang GJ, Liu SH, Chang CT. Skin autofluorescence is associated with rapid renal function decline in subjects at increased risk of coronary artery disease. *PLoS One.* 2019;14(5):e0217203. doi:10.1371/journal.pone.0217203
146. Nongnuch A, Davenport A. The Effect of On-Line Hemodiafiltration, Vegetarian Diet, and Urine Volume on Advanced Glycosylation End Products Measured by Changes in Skin Auto-Fluorescence. *Artif Organs.* 2018;42(11):1078-1085. doi:10.1111/aor.13143
147. Cavero-Redondo I, Soriano-Cano A, Álvarez-Bueno C, et al. Skin Autofluorescence-Indicated Advanced Glycation End Products as Predictors of Cardiovascular and All-Cause Mortality in High-Risk Subjects: A Systematic Review and Meta-analysis. *J Am Heart Assoc.* 2018;7(18):e009833. doi:10.1161/JAHA.118.009833
148. Calviño J, Cigarran S, Gonzalez-Tabares L, et al. Advanced glycation end products (AGEs) estimated by skin autofluorescence are related with cardiovascular risk in renal transplant. *PLoS One.* 2018;13(8):e0201118. doi:10.1371/journal.pone.0201118
149. França R de A, Esteves A de BA, Borges C de M, et al. Advanced glycation end-products (AGEs) accumulation in skin: relations with chronic kidney disease-mineral and bone disorder. *J Bras Nefrol.* 2017;39(3):253-260. doi:10.5935/0101-2800.20170042
150. Lavielle A, Rubin S, Boyer A, et al. Skin autofluorescence in acute kidney injury. *Crit Care.* 2017;21(1):24. doi:10.1186/s13054-017-1598-0

151. Ramsauer B, Engels GE, Graaff R, Sikole A, Arsov S, Stegmayr B. Skin- and Plasma autofluorescence in hemodialysis with glucose-free or glucose-containing dialysate. *BMC Nephrol.* 2017;18(1):5. doi:10.1186/s12882-016-0418-0
152. Wang CC, Wang YC, Wang GJ, et al. Skin Autofluorescence Is Associated with Endothelial Dysfunction in Uremic Subjects on Hemodialysis. *PLoS One.* 2016;11(1):e0147771. doi:10.1371/journal.pone.0147771
153. Nongnuch A, Davenport A. Skin autofluorescence advanced glycosylation end products as an independent predictor of mortality in high flux haemodialysis and haemodialysis patients. *Nephrology (Carlton).* 2015;20(11):862-867. doi:10.1111/nep.12519
154. Makulska I, Szczepańska M, Drożdż D, Polak-Jonkisz D, Zwolińska D. Skin autofluorescence as a novel marker of vascular damage in children and adolescents with chronic kidney disease. *Pediatr Nephrol.* 2015;30(5):811-819. doi:10.1007/s00467-014-2997-y
155. Siriopol D, Hogas S, Veisa G, et al. Tissue advanced glycation end products (AGEs), measured by skin autofluorescence, predict mortality in peritoneal dialysis. *Int Urol Nephrol.* 2015;47(3):563-569. doi:10.1007/s11255-014-0870-3
156. Furuya F, Shimura H, Takahashi K, et al. Skin autofluorescence is a predictor of cardiovascular disease in chronic kidney disease patients. *Ther Apher Dial.* 2015;19(1):40-44. doi:10.1111/1744-9987.12204
157. Temma J, Matsuhisa M, Horie T, et al. Non-invasive Measurement of Skin Autofluorescence as a Beneficial Surrogate Marker for Atherosclerosis in Patients with Type 2 Diabetes. *J Med Invest.* 2015;62(3-4):126-129. doi:10.2152/jmi.62.126
158. Taal MW. Progress in risk prediction for people with chronic kidney disease. *Curr Opin Nephrol Hypertens.* 2014;23(6):519-524. doi:10.1097/MNH.0000000000000072
159. Kimura H, Tanaka K, Kanno M, et al. Skin autofluorescence predicts cardiovascular mortality in patients on chronic hemodialysis. *Ther Apher Dial.* 2014;18(5):461-467. doi:10.1111/1744-9987.12160
160. Fraser SDS, Roderick PJ, McIntyre NJ, et al. Skin autofluorescence and all-cause mortality in stage 3 CKD. *Clin J Am Soc Nephrol.* 2014;9(8):1361-1368. doi:10.2215/CJN.09510913
161. Wang AYM, Wong CK, Yau YY, Wong S, Chan IHS, Lam CWK. Skin autofluorescence associates with vascular calcification in chronic kidney disease. *Arterioscler Thromb Vasc Biol.* 2014;34(8):1784-1790. doi:10.1161/ATVBAHA.114.303378
162. Graaff R, Arsov S, Ramsauer B, et al. Skin and plasma autofluorescence during hemodialysis: a pilot study. *Artif Organs.* 2014;38(6):515-518. doi:10.1111/aor.12205
163. Arsov S, Graaff R, van Oeveren W, et al. Advanced glycation end-products and skin autofluorescence in end-stage renal disease: a review. *Clin Chem Lab Med.* 2014;52(1):11-20. doi:10.1515/cclm-2012-0832
164. Makulska I, Szczepańska M, Drożdż D, Polak-Jonkisz D, Zwolińska D. Skin autofluorescence as a marker of cardiovascular risk in children with chronic kidney disease. *Pediatr Nephrol.* 2013;28(1):121-128. doi:10.1007/s00467-012-2280-z
165. Tanaka K, Nakayama M, Kanno M, et al. Skin autofluorescence is associated with the progression of chronic kidney disease: a prospective observational study. *PLoS One.* 2013;8(12):e83799. doi:10.1371/journal.pone.0083799
166. Crowley LE, Johnson CP, McIntyre N, et al. Tissue advanced glycation end product deposition

- after kidney transplantation. *Nephron Clin Pract.* 2013;124(1-2):54-59. doi:10.1159/000355692
167. Adachi T, Fukami K, Yamagishi SI, et al. Decreased serum carnitine is independently correlated with increased tissue accumulation levels of advanced glycation end products in haemodialysis patients. *Nephrology (Carlton).* 2012;17(8):689-694. doi:10.1111/j.1440-1797.2012.01642.x
 168. Oleniuc M, Schiller A, Secara I, et al. Evaluation of advanced glycation end products accumulation, using skin autofluorescence, in CKD and dialysis patients. *Int Urol Nephrol.* 2012;44(5):1441-1449. doi:10.1007/s11255-011-0097-5
 169. Jiang J, Chen P, Chen J, et al. Accumulation of tissue advanced glycation end products correlated with glucose exposure dose and associated with cardiovascular morbidity in patients on peritoneal dialysis. *Atherosclerosis.* 2012;224(1):187-194. doi:10.1016/j.atherosclerosis.2012.06.022
 170. Mácsai E, Benke A, Cseh A, Vásárhelyi B. Factors influencing skin autofluorescence of patients with peritoneal dialysis. *Acta Physiol Hung.* 2012;99(2):216-222. doi:10.1556/APhysiol.99.2012.2.15
 171. Sebeková K, Klenovicsová K, Ferenczová J, Hedvig J, Podracká L, Heidland A. Advanced oxidation protein products and advanced glycation end products in children and adolescents with chronic renal insufficiency. *J Ren Nutr.* 2012;22(1):143-148. doi:10.1053/j.jrn.2011.10.022
 172. Gerrits EG, Lutgers HL, Smeets GHW, et al. Skin autofluorescence: a pronounced marker of mortality in hemodialysis patients. *Nephron Extra.* 2012;2(1):184-191. doi:10.1159/000339282
 173. McIntyre NJ, Fluck RJ, McIntyre CW, Taal MW. Skin autofluorescence and the association with renal and cardiovascular risk factors in chronic kidney disease stage 3. *Clin J Am Soc Nephrol.* 2011;6(10):2356-2363. doi:10.2215/CJN.02420311
 174. Ueno H, Koyama H, Fukumoto S, et al. Advanced glycation end products, carotid atherosclerosis, and circulating endothelial progenitor cells in patients with end-stage renal disease. *Metabolism.* 2011;60(4):453-459. doi:10.1016/j.metabol.2010.04.001
 175. Nagano M, Fukami K, Yamagishi SI, et al. Tissue level of advanced glycation end products is an independent determinant of high-sensitivity C-reactive protein levels in haemodialysis patients. *Nephrology (Carlton).* 2011;16(3):299-303. doi:10.1111/j.1440-1797.2010.01419.x
 176. Tanaka K, Tani Y, Asai J, et al. Skin autofluorescence is associated with renal function and cardiovascular diseases in pre-dialysis chronic kidney disease patients. *Nephrol Dial Transplant.* 2011;26(1):214-220. doi:10.1093/ndt/gfq369
 177. Smit AJ, Gerrits EG. Skin autofluorescence as a measure of advanced glycation endproduct deposition: a novel risk marker in chronic kidney disease. *Curr Opin Nephrol Hypertens.* 2010;19(6):527-533. doi:10.1097/MNH.0b013e32833e9259
 178. Arsov S, Graaff R, Morariu AM, et al. Does hepatitis C increase the accumulation of advanced glycation end products in haemodialysis patients? *Nephrol Dial Transplant.* 2010;25(3):885-891. doi:10.1093/ndt/gfp564
 179. McIntyre NJ, Chesterton LJ, John SG, et al. Tissue-advanced glycation end product concentration in dialysis patients. *Clin J Am Soc Nephrol.* 2010;5(1):51-55. doi:10.2215/CJN.05350709
 180. Hartog JW, Gross S, Oterdoom LH, et al. Skin-autofluorescence is an independent predictor of graft loss in renal transplant recipients. *Transplantation.* 2009;87(7):1069-1077. doi:10.1097/TP.0b013e31819d3173
 181. Gerrits EG, Smit AJ, Bilo HJG. AGEs, autofluorescence and renal function. *Nephrol Dial Transplant.*

- 2009;24(3):710-713. doi:10.1093/ndt/gfn634
182. Noordzij MJ, Lefrandt JD, Smit AJ. Advanced glycation end products in renal failure: an overview. *J Ren Care*. 2008;34(4):207-212. doi:10.1111/j.1755-6686.2008.00038.x
183. Ueno H, Koyama H, Tanaka S, et al. Skin autofluorescence, a marker for advanced glycation end product accumulation, is associated with arterial stiffness in patients with end-stage renal disease. *Metabolism*. 2008;57(10):1452-1457. doi:10.1016/j.metabol.2008.05.016
184. Hartog JW, Hummel YM, Voors AA, et al. Skin-autofluorescence, a measure of tissue advanced glycation end-products (AGEs), is related to diastolic function in dialysis patients. *J Card Fail*. 2008;14(7):596-602. doi:10.1016/j.cardfail.2008.03.008
185. Hartog JW, de Vries APJ, Bakker SJL, et al. Risk factors for chronic transplant dysfunction and cardiovascular disease are related to accumulation of advanced glycation end-products in renal transplant recipients. *Nephrol Dial Transplant*. 2006;21(8):2263-2269. doi:10.1093/ndt/gfl132
186. Meerwaldt R, Hartog JW, Graaff R, et al. Skin autofluorescence, a measure of cumulative metabolic stress and advanced glycation end products, predicts mortality in hemodialysis patients. *J Am Soc Nephrol*. 2005;16(12):3687-3693. doi:10.1681/ASN.2005020144
187. Hartog JW, Smit AJ, van Son WJ, et al. Advanced glycation end products in kidney transplant patients: a putative role in the development of chronic renal transplant dysfunction. *Am J Kidney Dis*. 2004;43(6):966-975. doi:10.1053/j.ajkd.2004.02.008

AGE Reader in cardiovascular disease

188. Chen Q, Huang Q, Liu W, Zhou X. Advanced glycation end products via skin autofluorescence as a new biomarker for major adverse cardiovascular events: A meta-analysis of prospective studies. *Nutr Metab Cardiovasc Dis*. 2022;32(5):1083-1092. doi:10.1016/j.numecd.2022.01.032
189. Pan J. Skin autofluorescence, a measure of tissue accumulation of advanced glycation end products, is associated with subclinical atherosclerosis in coronary and carotid arteries. Published online 2022.
190. Kunimoto M, Yokoyama M, Shimada K, et al. Relationship between skin autofluorescence levels and clinical events in patients with heart failure undergoing cardiac rehabilitation. *Cardiovasc Diabetol*. 2021;20:208. doi:10.1186/s12933-021-01398-0
191. Hitsumoto T. Skin Autofluorescence as a Predictor of First Heart Failure Hospitalization in Patients With Heart Failure With Preserved Ejection Fraction. *Cardiol Res*. 2020;11(4):247-255. doi:10.14740/cr1097
192. Kunimoto M, Shimada K, Yokoyama M, et al. Association between the tissue accumulation of advanced glycation end products and exercise capacity in cardiac rehabilitation patients. *BMC Cardiovasc Disord*. 2020;20:195. doi:10.1186/s12872-020-01484-3
193. Yamagishi SI. Role of Advanced Glycation Endproduct (AGE)-Receptor for Advanced Glycation Endproduct (RAGE) Axis in Cardiovascular Disease and Its Therapeutic Intervention. *Circ J*. 2019;83(9):1822-1828. doi:10.1253/circj.CJ-19-0618
194. Cavero-Redondo I, Soriano-Cano A, Álvarez-Bueno C, et al. Skin Autofluorescence-Indicated Advanced Glycation End Products as Predictors of Cardiovascular and All-Cause Mortality in High-Risk Subjects: A Systematic Review and Meta-analysis. *J Am Heart Assoc*. 2018;7(18):e009833. doi:10.1161/JAHA.118.009833

195. Boersema J, de Vos LC, Links TP, et al. Skin accumulation of advanced glycation end products is increased in patients with an abdominal aortic aneurysm. *J Vasc Surg.* 2017;66(6):1696-1703.e1. doi:10.1016/j.jvs.2017.04.037
196. Hitsumoto T. Impact of Hemorheology Assessed by the Microchannel Method on Pulsatility Index of the Common Carotid Artery in Patients With Type 2 Diabetes Mellitus. *J Clin Med Res.* 2017;9(7):579-585. doi:10.14740/jocmr3031w
197. de Vos LC, Boersema J, Hillebrands JL, et al. Diverging effects of diabetes mellitus in patients with peripheral artery disease and abdominal aortic aneurysm and the role of advanced glycation end-products: ARTERY study - protocol for a multicentre cross-sectional study. *BMJ Open.* 2017;7(4):e012584. doi:10.1136/bmjopen-2016-012584
198. Liu CY, Huang QF, Cheng YB, et al. A Comparative Study on Skin and Plasma Advanced Glycation End Products and Their Associations with Arterial Stiffness. *Pulse (Basel).* 2017;4(4):208-218. doi:10.1159/000453581
199. Schutte E, de Vos LC, Lutgers HL, et al. Association of Skin Autofluorescence Levels With Kidney Function Decline in Patients With Peripheral Artery Disease. *Arterioscler Thromb Vasc Biol.* 2016;36(8):1709-1714. doi:10.1161/ATVBAHA.116.307771
200. de Vos LC, Boersema J, Mulder DJ, Smit AJ, Zeebregts CJ, Lefrandt JD. Skin autofluorescence as a measure of advanced glycation end products deposition predicts 5-year amputation in patients with peripheral artery disease. *Arterioscler Thromb Vasc Biol.* 2015;35(6):1532-1537. doi:10.1161/ATVBAHA.115.305407
201. Yamagishi SI, Fukami K, Matsui T. Evaluation of tissue accumulation levels of advanced glycation end products by skin autofluorescence: A novel marker of vascular complications in high-risk patients for cardiovascular disease. *Int J Cardiol.* 2015;185:263-268. doi:10.1016/j.ijcard.2015.03.167
202. Ageev FT, Vitsenia MV, Smirnova MD, Mihailov GV. The Relationship Between Level of End-Products of Tissue Glycation and Pulse Wave Velocity in Non-diabetic Patients With Cardiovascular Disease. *Kardiologija.* 2015;55(6):63-67. doi:10.18565/cardio.2015.6.63-67
203. Jacobs K, Navarrete Santos A, Simm A, Silber RE, Hofmann B. The skin autofluorescence reflects the posttranslational glycation grade of the matrix protein collagen. *Free Radic Biol Med.* 2014;75 Suppl 1:S34. doi:10.1016/j.freeradbiomed.2014.10.772
204. Schmidt AM. Skin autofluorescence, 5-year mortality, and cardiovascular events in peripheral arterial disease: all that glitters is surely not gold. *Arterioscler Thromb Vasc Biol.* 2014;34(4):697-699. doi:10.1161/ATVBAHA.114.303419
205. de Vos LC, Mulder DJ, Smit AJ, et al. Skin autofluorescence is associated with 5-year mortality and cardiovascular events in patients with peripheral artery disease. *Arterioscler Thromb Vasc Biol.* 2014;34(4):933-938. doi:10.1161/ATVBAHA.113.302731
206. Tiessen AH, Jager W, ter Bogt NCW, et al. Skin autofluorescence as proxy of tissue AGE accumulation is dissociated from SCORE cardiovascular risk score, and remains so after 3 years. *Clin Chem Lab Med.* 2014;52(1):121-127. doi:10.1515/cclm-2012-0825
207. Hofmann B, Adam AC, Jacobs K, et al. Advanced glycation end product associated skin autofluorescence: a mirror of vascular function? *Exp Gerontol.* 2013;48(1):38-44. doi:10.1016/j.exger.2012.04.011
208. de Vos LC, Noordzij MJ, Mulder DJ, et al. Skin autofluorescence as a measure of advanced glycation end products deposition is elevated in peripheral artery disease. *Arterioscler Thromb*

- Vasc Biol.* 2013;33(1):131-138. doi:10.1161/ATVBAHA.112.300016
209. den Dekker MAM, Zwiers M, van den Heuvel ER, et al. Skin autofluorescence, a non-invasive marker for AGE accumulation, is associated with the degree of atherosclerosis. *PLoS One.* 2013;8(12):e83084. doi:10.1371/journal.pone.0083084
 210. Watfa G, Soulis G, Tartagni E, et al. Relationship between tissue glycation measured by autofluorescence and pulse wave velocity in young and elderly non-diabetic populations. *Diabetes Metab.* 2012;38(5):413-419. doi:10.1016/j.diabet.2012.04.004
 211. Noordzij MJ, Lefrandt JD, Loeffen EAH, et al. Skin autofluorescence is increased in patients with carotid artery stenosis and peripheral artery disease. *Int J Cardiovasc Imaging.* 2012;28(2):431-438. doi:10.1007/s10554-011-9805-6
 212. Hartog JW, Willemsen S, van Veldhuisen DJ, et al. Effects of alagebrium, an advanced glycation endproduct breaker, on exercise tolerance and cardiac function in patients with chronic heart failure. *Eur J Heart Fail.* 2011;13(8):899-908. doi:10.1093/eurjhf/hfr067
 213. Lutgers HL, Graaff R, de Vries R, Smit AJ, Dullaart RPF. Carotid artery intima media thickness associates with skin autofluorescence in non-diabetic subjects without clinically manifest cardiovascular disease. *Eur J Clin Invest.* 2010;40(9):812-817. doi:10.1111/j.1365-2362.2010.02329.x
 214. Hartog JW, van de Wal RM, Schalkwijk CG, et al. Advanced glycation end-products, anti-hypertensive treatment and diastolic function in patients with hypertension and diastolic dysfunction. *Eur J Heart Fail.* 2010;12(4):397-403. doi:10.1093/eurjhf/hfq001
 215. Nienhuis HLA, Westra J, Smit AJ, Limburg PC, Kallenberg CGM, Bijl M. AGE and their receptor RAGE in systemic autoimmune diseases: an inflammation propagating factor contributing to accelerated atherosclerosis. *Autoimmunity.* 2009;42(4):302-304. doi:10.1080/08916930902831746
 216. Mulder DJ, van Haelst PL, Graaff R, Gans RO, Zijlstra F, Smit AJ. Skin autofluorescence is elevated in acute myocardial infarction and is associated with the one-year incidence of major adverse cardiac events. *Neth Heart J.* 2009;17(4):162-168. doi:10.1007/BF03086239
 217. Ohnuki Y, Nagano R, Takizawa S, Takagi S, Miyata T. Advanced glycation end products in patients with cerebral infarction. *Intern Med.* 2009;48(8):587-591. doi:10.2169/internalmedicine.48.1390
 218. Jochemsen BM, Mulder DJ, van Doormaal JJ, et al. Relation between food and drinking habits, and skin autofluorescence and intima media thickness in subjects at high cardiovascular risk. *Journal of Food and Nutrition Research (Slovak Republic).* Published online 2009. Accessed October 4, 2021. <http://www.vup.sk/index.php?mainID=2&navID=36&version=2&volume=48&article=901>
 219. Meerwaldt R, van der Vaart MG, van Dam GM, et al. Clinical relevance of advanced glycation endproducts for vascular surgery. *Eur J Vasc Endovasc Surg.* 2008;36(2):125-131. doi:10.1016/j.ejvs.2008.01.030
 220. Smit AJ, Hartog JW, Voors AA, van Veldhuisen DJ. Advanced glycation endproducts in chronic heart failure. *Ann N Y Acad Sci.* 2008;1126:225-230. doi:10.1196/annals.1433.038
 221. Mulder DJ, van Haelst PL, Gross S, et al. Skin autofluorescence is elevated in patients with stable coronary artery disease and is associated with serum levels of neopterin and the soluble receptor for advanced glycation end products. *Atherosclerosis.* 2008;197(1):217-223. doi:10.1016/j.atherosclerosis.2007.03.027

222. Hartog JW, Voors AA, Schalkwijk CG, et al. Clinical and prognostic value of advanced glycation end-products in chronic heart failure. *Eur Heart J*. 2007;28(23):2879-2885. doi:10.1093/eurheartj/ehm486
223. Mulder DJ, van Haelst PL, Wobbles MH, et al. The effect of aggressive versus conventional lipid-lowering therapy on markers of inflammatory and oxidative stress. *Cardiovasc Drugs Ther*. 2007;21(2):91-97. doi:10.1007/s10557-007-6010-x
224. Mulder DJ, van Haelst PL, Graaff R. Skin Autofluorescence is an independent marker for Acute Myocardial Infarction. *Circulation*. 2005;112(11):371.

AGE Reader in surgery

225. Krasnodębski M, Morawski M, Borkowski J, et al. Skin Autofluorescence Measurement as Initial Assessment of Hepatic Parenchyma Quality in Patients Undergoing Liver Resection. *J Clin Med*. 2022;11(18):5341. doi:10.3390/jcm11185341
226. Reichert S, Hofmann B, Kohnert M, et al. Advanced Glycation End Product (AGE) and Soluble Receptor of AGE (sRAGE) Levels in Relation to Periodontitis Severity and as Putative 3-Year Outcome Predictors in Patients Undergoing Coronary Artery Bypass Grafting (CABG). *J Clin Med*. 2022;11(14):4105. doi:10.3390/jcm11144105
227. Krasnodębski M, Grąt K, Morawski M, et al. Skin autofluorescence as a novel predictor of acute kidney injury after liver resection. *World J Surg Oncol*. 2021;19(1):276. doi:10.1186/s12957-021-02394-0
228. Hofmann B, Gerull KA, Bloch K, et al. It's all in our skin-Skin autofluorescence-A promising outcome predictor in cardiac surgery: A single centre cohort study. *PLoS One*. 2020;15(6):e0234847. doi:10.1371/journal.pone.0234847
229. Pol HWD, Sibma E, Zeebregts CJ, Pierik EGJM, Meerwaldt R. Increased skin autofluorescence after colorectal operation reflects surgical stress and postoperative outcome. *Am J Surg*. 2011;202(5):583-589. doi:10.1016/j.amjsurg.2010.10.019

AGE Reader in other diseases

230. Brandt IAG, Jessen MH, Rimestad DE, Højgaard MKF, Vestergaard P. Advanced glycation end products and bone - How do we measure them and how do they correlate with bone mineral density and fractures? A systematic review and evaluation of precision of measures. *Bone*. Published online September 26, 2022:116569. doi:10.1016/j.bone.2022.116569
231. Waqas K, Szilagyí IA, Schiphof D, et al. Skin autofluorescence, a non-invasive biomarker of advanced glycation end products, and its relation to radiographic and MRI based osteoarthritis. *Osteoarthritis Cartilage*. Published online September 7, 2022:S1063-4584(22)00832-9. doi:10.1016/j.joca.2022.08.014
232. Maurelli M, Bellinato F, Gisondi P, Girolomoni G. Reduction of cutaneous advanced glycation end products levels after effective psoriasis treatment. *J Eur Acad Dermatol Venereol*. 2022;36(8):e629-e631. doi:10.1111/jdv.18090
233. Apaydın T, Yavuz DG. Morbid obesity leads to increased skin autofluorescence independent of metabolic syndrome components. *Turk J Med Sci*. 2022;52(4):1085-1092. doi:10.55730/1300-

0144.5411

234. D’Cunha NM, Sergi D, Lane MM, et al. The Effects of Dietary Advanced Glycation End-Products on Neurocognitive and Mental Disorders. *Nutrients*. 2022;14(12):2421. doi:10.3390/nu14122421
235. Waqas K, Chen J, Rivadeneira F, Uitterlinden AG, Voortman T, Zillikens MC. Skin autofluorescence, a non-invasive biomarker of advanced glycation end-products (AGEs), is associated with frailty: The Rotterdam study. *J Gerontol A Biol Sci Med Sci*. Published online January 31, 2022:glac025. doi:10.1093/gerona/glac025
236. Stelwagen J, Meuleman AT, Lubberts S, et al. Cognitive Impairment in Long-Term Survivors of Testicular Cancer More Than 20 Years after Treatment. *Cancers (Basel)*. 2021;13(22):5675. doi:10.3390/cancers13225675
237. Waqas K, Zillikens MC. Skin Autofluorescence, a Noninvasive Biomarker for Advanced Glycation End-products, Is Associated With Sarcopenia. *The Journal of Clinical Endocrinology & Metabolism*. Published online August 28, 2021. doi:https://doi.org/10.1210/clinem/dgab632
238. Hagen JM, Sutterland AL, Liefers T, et al. Skin autofluorescence of advanced glycation end products and mortality in affective disorders in the lifelines cohort study: A mediation analysis. *J Affect Disord*. 2021;282:1082-1089. doi:10.1016/j.jad.2020.12.202
239. Hagen JM, Sutterland AL, Edrisy S, Tan HL, de Haan L. Accumulation rate of advanced glycation end products in recent onset psychosis: A longitudinal study. *Psychiatry Res*. 2020;291:113192. doi:10.1016/j.psychres.2020.113192
240. Yamashita H, Fukushima E, Shimomura K, et al. Use of skin advanced glycation end product levels measured using a simple noninvasive method as a biological marker for the diagnosis of neuropsychiatric diseases. *Int J Methods Psychiatr Res*. 2020;29(2):e1824. doi:10.1002/mpr.1824
241. Zaigham S, Persson M, Jujic A, et al. Measures of lung function and their relationship with advanced glycation end-products. *ERJ Open Res*. 2020;6(2):00356-02019. doi:10.1183/23120541.00356-2019
242. Bakker-Aling SH, van Woerkom JM, Zomer TP, Buscher HCJL, van Bommel T. Skin autofluorescence as a tool for cardiovascular risk estimation in patients with rheumatoid arthritis. *Eur J Intern Med*. 2019;66:e7-e8. doi:10.1016/j.ejim.2019.06.011
243. Lentferink YE, van Teeseling L, Knibbe CAJ, van der Vorst MMJ. Skin autofluorescence in children with and without obesity. *J Pediatr Endocrinol Metab*. 2019;32(1):41-47. doi:10.1515/jpem-2018-0237
244. Niihata K, Takahashi S, Kurita N, et al. Association Between Accumulation of Advanced Glycation End-Products and Hearing Impairment in Community-Dwelling Older People: A Cross-Sectional Sukagawa Study. *J Am Med Dir Assoc*. 2018;19(3):235-239.e1. doi:10.1016/j.jamda.2017.09.008
245. Schweitzer C, Coughard-Gregoire A, Rigalleau V, et al. Autofluorescence of Skin Advanced Glycation End Products as a Risk Factor for Open Angle Glaucoma: The ALIENOR Study. *Invest Ophthalmol Vis Sci*. 2018;59(1):75-84. doi:10.1167/iovs.17-22316
246. Hagen JM, Sutterland AL, Koeter MW, Lutter R, Cohen D, de Haan L. Advanced Glycation End Products in Recent-Onset Psychosis Indicate Early Onset of Cardiovascular Risk. *J Clin Psychiatry*. 2017;78(9):1395-1401. doi:10.4088/JCP.16m10972
247. Harlaar JJ, Eker HH, Vakalopoulos KA, et al. Advanced glycation end products as a biomarker for incisional hernia. *Hernia*. 2017;21(4):537-541. doi:10.1007/s10029-017-1610-2
248. Kato M, Kubo A, Sugioka Y, et al. Relationship between advanced glycation end-product

- accumulation and low skeletal muscle mass in Japanese men and women. *Geriatr Gerontol Int.* 2017;17(5):785-790. doi:10.1111/ggi.12787
249. Himori N, Kunikata H, Kawasaki R, et al. The association between skin autofluorescence and mean deviation in patients with open-angle glaucoma. *Br J Ophthalmol.* 2017;101(2):233-238. doi:10.1136/bjophthalmol-2016-309504
250. Sprenger HG, Bierman WF, Martes MI, Graaff R, van der Werf TS, Smit AJ. Skin advanced glycation end products in HIV infection are increased and predictive of development of cardiovascular events. *AIDS.* 2017;31(2):241-246. doi:10.1097/QAD.0000000000001297
251. Sánchez E, Baena-Fustegueras JA, de la Fuente MC, et al. Advanced glycation end-products in morbid obesity and after bariatric surgery: When glycemic memory starts to fail. *Endocrinol Diabetes Nutr.* 2017;64(1):4-10. doi:10.1016/j.endinu.2016.09.009
252. van Waateringe RP, Slagter SN, van Beek AP, et al. Skin autofluorescence, a non-invasive biomarker for advanced glycation end products, is associated with the metabolic syndrome and its individual components. *Diabetol Metab Syndr.* 2017;9:42. doi:10.1186/s13098-017-0241-1
253. Pilleron S, Rajaobelina K, Tabue Teguo M, et al. Accumulation of advanced glycation end products evaluated by skin autofluorescence and incident frailty in older adults from the Bordeaux Three-City cohort. *PLoS One.* 2017;12(10):e0186087. doi:10.1371/journal.pone.0186087
254. Papagrigoraki. Advanced Glycation End Products are Increased in the Skin and Blood of Patients with Severe Psoriasis. doi:10.2340/00015555-2661
255. Igase M, Ohara M, Igase K, et al. Skin Autofluorescence Examination as a Diagnostic Tool for Mild Cognitive Impairment in Healthy People. *J Alzheimers Dis.* 2017;55(4):1481-1487. doi:10.3233/JAD-160917
256. Fokkens BT, Mulder DJ, Nugteren MB, et al. Surface Area of Detachment, Proliferative Vitreoretinopathy, and Pulse Pressure, but not AGEs, are Associated With Retinal Redetachment. *Invest Ophthalmol Vis Sci.* 2016;57(15):6633-6638. doi:10.1167/iovs.16-20735
257. John M, McKeever TM, Haddad MA, et al. Traditional and emerging indicators of cardiovascular risk in chronic obstructive pulmonary disease. *Chron Respir Dis.* 2016;13(3):247-255. doi:10.1177/1479972316636995
258. Hoonhorst SJM, Lo Tam Loi AT, Pouwels SD, et al. Advanced glycation endproducts and their receptor in different body compartments in COPD. *Respir Res.* 2016;17:46. doi:10.1186/s12931-016-0363-2
259. Himori N, Kunikata H, Shiga Y, et al. The association between systemic oxidative stress and ocular blood flow in patients with normal-tension glaucoma. *Graefes Arch Clin Exp Ophthalmol.* 2016;254(2):333-341. doi:10.1007/s00417-015-3203-z
260. Meertens JH, Nienhuis HL, Lefrandt JD, et al. The Course of Skin and Serum Biomarkers of Advanced Glycation Endproducts and Its Association with Oxidative Stress, Inflammation, Disease Severity, and Mortality during ICU Admission in Critically Ill Patients: Results from a Prospective Pilot Study. *PLoS One.* 2016;11(8):e0160893. doi:10.1371/journal.pone.0160893
261. de Groot L, Jager NA, Westra J, et al. Does reduction of disease activity improve early markers of cardiovascular disease in newly diagnosed rheumatoid arthritis patients? *Rheumatology (Oxford).* 2015;54(7):1257-1261. doi:10.1093/rheumatology/keu459
262. Spauwen PJJ, van Eupen MGA, Köhler S, et al. Associations of advanced glycation end-products

- with cognitive functions in individuals with and without type 2 diabetes: the maastricht study. *J Clin Endocrinol Metab.* 2015;100(3):951-960. doi:10.1210/jc.2014-2754
263. Hoonhorst SJM, Lo Tam Loi AT, Hartman JE, et al. Advanced glycation end products in the skin are enhanced in COPD. *Metabolism.* 2014;63(9):1149-1156. doi:10.1016/j.metabol.2014.06.006
264. Gopal P, Reynaert NL, Scheijen LJJM, et al. Plasma advanced glycation end-products and skin autofluorescence are increased in COPD. *Eur Respir J.* 2014;43(2):430-438. doi:10.1183/09031936.00135312
265. Kouidrat Y, Amad A, Desailoud R, et al. Increased advanced glycation end-products (AGEs) assessed by skin autofluorescence in schizophrenia. *J Psychiatr Res.* 2013;47(8):1044-1048. doi:10.1016/j.jpsychires.2013.03.016
266. Hettema M, Smit AJ. Local differences in skin autofluorescence may not reflect similar differences in oxidative stress exposure. *J Rheumatol.* 2013;40(2):206. doi:10.3899/jrheum.121060
267. Rombach SM, van den Bogaard B, de Groot E, et al. Vascular aspects of Fabry disease in relation to clinical manifestations and elevations in plasma globotriaosylsphingosine. *Hypertension.* 2012;60(4):998-1005. doi:10.1161/HYPERTENSIONAHA.112.195685
268. Momma H, Niu K, Kobayashi Y, et al. Skin advanced glycation end-product accumulation is negatively associated with calcaneal osteo-sono assessment index among non-diabetic adult Japanese men. *Osteoporos Int.* 2012;23(6):1673-1681. doi:10.1007/s00198-011-1753-4
269. Momma H, Niu K, Kobayashi Y, et al. Skin advanced glycation end product accumulation and muscle strength among adult men. *Eur J Appl Physiol.* 2011;111(7):1545-1552. doi:10.1007/s00421-010-1779-x
270. Maury E, Vergniol J, Ledinghen V de, Rigalleau V. Skin autofluorescence is high in patients with cirrhosis - further arguing for the implication of Advanced Glycation End products. *J Hepatol.* 2011;54(5):1079-1080. doi:10.1016/j.jhep.2010.10.012
271. Hettema ME, Bootsma H, Graaff R, de Vries R, Kallenberg CGM, Smit AJ. Skin autofluorescence, as marker of accumulation of advanced glycation endproducts and of cumulative metabolic stress, is not increased in patients with systemic sclerosis. *Int J Rheumatol.* 2011;2011:417813. doi:10.1155/2011/417813
272. de Groot L, Hinkema H, Westra J, et al. Advanced glycation endproducts are increased in rheumatoid arthritis patients with controlled disease. *Arthritis Res Ther.* 2011;13(6):R205. doi:10.1186/ar3538
273. Coffeng SM, Blaauw J, Souwer ETD, et al. Skin autofluorescence as marker of tissue advanced glycation end-products accumulation in formerly preeclamptic women. *Hypertens Pregnancy.* 2011;30(2):231-242. doi:10.3109/10641955.2010.484085
274. Greven WL, Smit JM, Rommes JH, Spronk PE. Accumulation of advanced glycation end (AGEs) products in intensive care patients: an observational, prospective study. *BMC Clin Pathol.* 2010;10:4. doi:10.1186/1472-6890-10-4
275. de Leeuw K, Nienhuis H, Smit A, Stegeman C, Kallenberg C, Bijl M. Increased accumulation of advanced glycation endproducts in patients with Wegener's granulomatosis. *Ann Rheum Dis.* 2010;69(3):625-627. doi:10.1136/ard.2009.123851
276. Nienhuis HL, de Leeuw K, Bijzet J, et al. Skin autofluorescence is increased in systemic lupus erythematosus but is not reflected by elevated plasma levels of advanced glycation endproducts.

- Rheumatology (Oxford)*. 2008;47(10):1554-1558. doi:10.1093/rheumatology/ken302
277. den Hollander NC, Mulder DJ, Graaff R, et al. Advanced glycation end products and the absence of premature atherosclerosis in glycogen storage disease Ia. *J Inherit Metab Dis*. 2007;30(6):916-923. doi:10.1007/s10545-007-0507-0
278. de Leeuw K, Graaff R, de Vries R, et al. Accumulation of advanced glycation endproducts in patients with systemic lupus erythematosus. *Rheumatology (Oxford)*. 2007;46(10):1551-1556. doi:10.1093/rheumatology/kem215
279. Blaauw J, Smit AJ, van Pampus MG, et al. Skin autofluorescence, a marker of advanced glycation end products and oxidative stress, is increased in recently preeclamptic women. *Am J Obstet Gynecol*. 2006;195(3):717-722. doi:10.1016/j.ajog.2006.06.086

AGE Reader (technical) validation

280. Adl Amini D, Moser M, Chiapparelli E, et al. A Prospective Analysis of Skin and Fingertip Advanced Glycation End-Product Devices in Healthy Volunteers. *J Clin Med*. 2022;11(16):4709. doi:10.3390/jcm11164709
281. Atzeni IM, van de Zande SC, Westra J, Zwerver J, Smit AJ, Mulder DJ. The AGE Reader: A non-invasive method to assess long-term tissue damage. *Methods*. Published online February 23, 2021:S1046-2023(21)00059-1. doi:10.1016/j.ymeth.2021.02.016
282. Atzeni IM, Boersema J, Pas HH, et al. Is skin autofluorescence (SAF) representative of dermal advanced glycation endproducts (AGEs) in dark skin? A pilot study. *Heliyon*. 2020;6(11):e05364. doi:10.1016/j.heliyon.2020.e05364
283. Isami F, West BJ, Nakajima S, Yamagishi SI. Association of advanced glycation end products, evaluated by skin autofluorescence, with lifestyle habits in a general Japanese population. *J Int Med Res*. 2018;46(3):1043-1051. doi:10.1177/0300060517736914
284. Da Moura Semedo C, Webb M, Waller H, Khunti K, Davies M. Skin autofluorescence, a non-invasive marker of advanced glycation end products: clinical relevance and limitations. *Postgrad Med J*. 2017;93(1099):289-294. doi:10.1136/postgradmedj-2016-134579
285. Eny KM, Lutgers HL, Maynard J, et al. GWAS identifies an NAT2 acetylator status tag single nucleotide polymorphism to be a major locus for skin fluorescence. *Diabetologia*. 2014;57(8):1623-1634. doi:10.1007/s00125-014-3286-9
286. Simon Klenovics K, Kollárová R, Hodosy J, Celec P, Sebeková K. Reference values of skin autofluorescence as an estimation of tissue accumulation of advanced glycation end products in a general Slovak population. *Diabet Med*. 2014;31(5):581-585. doi:10.1111/dme.12326
287. Mácsai E, Takáts Z, Derzbach L, Körner A, Vásárhelyi B. Verification of skin autofluorescence values by mass spectrometry in adolescents with type 1 diabetes: brief report. *Diabetes Technol Ther*. 2013;15(3):269-272. doi:10.1089/dia.2012.0251
288. Hofmann B, Adam AC, Jacobs K, et al. Advanced glycation end product associated skin autofluorescence: a mirror of vascular function? *Exp Gerontol*. 2013;48(1):38-44. doi:10.1016/j.exger.2012.04.011
289. Yue X, Hu H, Koetsier M, Graaff R, Han C. Reference values for the Chinese population of skin

- autofluorescence as a marker of advanced glycation end products accumulated in tissue. *Diabet Med*. 2011;28(7):818-823. doi:10.1111/j.1464-5491.2010.03217.x
290. Noordzij MJ, Lefrandt JD, Graaff R, Smit AJ. Dermal factors influencing measurement of skin autofluorescence. *Diabetes Technol Ther*. 2011;13(2):165-170. doi:10.1089/dia.2010.0123
291. Koetsier M, Nur E, Chunmao H, et al. Skin color independent assessment of aging using skin autofluorescence. *Opt Express*. 2010;18(14):14416-14429. doi:10.1364/OE.18.014416
292. Koetsier M, Lutgers HL, de Jonge C, Links TP, Smit AJ, Graaff R. Reference values of skin autofluorescence. *Diabetes Technol Ther*. 2010;12(5):399-403. doi:10.1089/dia.2009.0113
293. Koetsier M, Lutgers H, Smit AJ, et al. Skin autofluorescence for the risk assessment of chronic complications in diabetes: a broad excitation range is sufficient. *Opt Express*. 2009;17(2):509-519. doi:10.1364/oe.17.000509
294. Mulder DJ, Water TVD, Lutgers HL, et al. Skin autofluorescence, a novel marker for glycemic and oxidative stress-derived advanced glycation endproducts: an overview of current clinical studies, evidence, and limitations. *Diabetes Technol Ther*. 2006;8(5):523-535. doi:10.1089/dia.2006.8.523
295. Meerwaldt R, Links T, Graaff R, et al. Simple noninvasive measurement of skin autofluorescence. *Ann N Y Acad Sci*. 2005;1043:290-298. doi:10.1196/annals.1333.036
296. Graaff R, Meerwaldt R, Lutgers HL, et al. Instrumentation for the measurement of autofluorescence in human skin. 2005;5692:111-118. doi:10.1117/12.588984
297. Meerwaldt R, Graaff R, Oomen PHN, et al. Simple non-invasive assessment of advanced glycation endproduct accumulation. *Diabetologia*. 2004;47(7):1324-1330. doi:10.1007/s00125-004-1451-2
298. Ubink-Veltmaat LJ, Bilo HJG, Groenier KH, Houweling ST, Rischen RO, Meyboom-de Jong B. Prevalence, incidence and mortality of type 2 diabetes mellitus revisited: a prospective population-based study in The Netherlands (ZODIAC-1). *Eur J Epidemiol*. 2003;18(8):793-800. doi:10.1023/a:1025369623365
299. Ahmed MU, Brinkmann Frye E, Degenhardt TP, Thorpe SR, Baynes JW. N-epsilon-(carboxyethyl)lysine, a product of the chemical modification of proteins by methylglyoxal, increases with age in human lens proteins. *Biochem J*. 1997;324 (Pt 2):565-570. doi:10.1042/bj3240565
300. Dyer DG, Dunn JA, Thorpe SR, et al. Accumulation of Maillard reaction products in skin collagen in diabetes and aging. *J Clin Invest*. 1993;91(6):2463-2469. doi:10.1172/JCI116481
301. Morita Y. Evaluation of the glycative stress by non-invasive skin AGEs measurement devices. Accessed October 5, 2021. https://www.jstage.jst.go.jp/article/gsr/6/2/6_92/_article/-char/en