

Curriculum Vitae

Eyal Shahaar, M.D., M.P.H.

Education

- Tel-Aviv University, Tel-Aviv, Israel, M.D. (1979-1987)
- University of Minnesota, Minneapolis, Minnesota, M.P.H. Epidemiology (1990-1992)

Professional Certification

- Medical Licensure, Israel, 1987
- Educational Commission for Foreign Medical Graduates (ECFMG) Certificate, U.S., 1987

Professional Experience

Clinical

- Rotating Internship, Beilinson Medical Center, Petach-Tikva, Israel, 1986.
- Internal Medicine, Sapir Medical Center, Kfar-Saba, Israel, 1987 - 1988.
- Family Practice, Health Insurance Institution of the General Federation of Labor in Israel, 1988-1990.

Academic

- Assistant Professor of Epidemiology, School of Public Health, University of Minnesota, 1992 – 1996
- Associate Professor of Epidemiology, School of Public Health, University of Minnesota, 1996 – 2001
- Professor of Epidemiology, School of Public Health, University of Minnesota, 2001 – 2006
- Professor (tenured), Division/Department of Epidemiology & Biostatistics, Mel and Enid Zuckerman College of Public Health, The University of Arizona, 2006 – 2018 (retirement: May 16, 2018)

Professional Activities

- Associate Editor, *American Journal of Epidemiology* (2006-2010)
- Ad hoc Editorial Peer Review: *American Journal of Epidemiology, Epidemiology, Hypertension, JAMA, Lancet, Preventive Medicine, Stroke, Circulation, American Journal of Cardiology, Mayo Clinic Proceedings, Journal of Dental Research, Annals of Internal Medicine, Archives of Internal Medicine, American Journal of Respiratory and Critical Care Medicine, Controlled Clinical Trials, American Journal of Preventive Medicine, Journal of Clinical Sleep Medicine, Journal of Clinical Epidemiology, and others*
- Institutional Review Board (Human Subjects Committee) - University of Minnesota, 1994-1997
- NIH Peer Review: Special Emphasis Panel, Epidemiology and Disease Study Section, August, 1996
- Guest Editor, Regional North American Annual Meeting of the World Federation of Neurology - Research Group on Neuroepidemiology, Minneapolis, Minnesota, May, 1998
- NHLBI Special Emphasis Panel, Minority Institution/Faculty Research Awards, December, 2000
- Reviewer of the 2001 Surgeon General Report on Smoking and Health, Chapter 3: Active Smoking and Cardiovascular Diseases
- Grant Review Panel, American Institute of Biological Sciences, November, 2001

- Member, Peer Review Groups, Behavioral Science, Epidemiology and Prevention 1 – American Heart Association: 2002-2003
- Chairperson, Working group on the definition of out-of-hospital cardiac death - AMI Conference: Warrenton, Virginia, May, 2002
- Abstracts' Grader: American Heart Association Scientific Sessions (several times)
- Member, NHLBI Special Emphasis Panel (Peer Review Group), February 2006
- Chairperson, Peer Review Groups, Behavioral Science, Epidemiology and Prevention 1 – American Heart Association, Spring 2006
- Co-Chairperson, Peer Review Groups, Behavioral Science, Epidemiology and Prevention 1 – American Heart Association, Spring 2007

Honors

- Leonard M. Schuman Excellence in Teaching Award, School of Public Health, University of Minnesota, 2000 (nominated three times—by three groups of students)
- U.S. NIH exchange scientist with the World Health Organization MONICA project in Augsburg, Germany (June 1993)
- U.S. NIH exchange scientist with the National Cardiovascular Center in Osaka, Japan, (Nov 1998)
- Fellow, American Heart Association Council on Epidemiology, 1994
- Delta Omega Honorary Public Health Society, Pi Chapter, 1996
- Selected article for *The 1996 Year Book of Vascular Surgery* (Porter JM, ed) Chicago, IL: Mosby-Year Book, Inc. pp 321-323. (Shahar E, et al. Improved survival of stroke patients during the 1980s).
- Selected article for *The 2002 Year Book of Pulmonary Disease* (Phillips B, ed) Chicago, IL: Mosby-Year Book, Inc. (Shahar E et al. Sleep-disordered breathing and cardiovascular disease: Cross-sectional results of the Sleep Heart Health Study).
- Stroke Thorne Award, Minnesota Medical Foundation, 2002
- Fellow, American College of Epidemiology, 2008
- Honorary Editorial Board, *Pragmatic and Observational Research*, 2010-2012
- Advisory Board, *WebmedCentral*, 2011
- Nominated for Outstanding Teaching Award, College of Public Health, University of Arizona, 2013

Formal Teaching (and Teaching-Related Positions)

University of Minnesota

- Director of Graduate Studies, Division of Epidemiology, 1997 – 2000
- Associate member: graduate faculty in epidemiology, 1992-1997
- Full member: graduate faculty in epidemiology, 1997-2006
- Chairperson, Semester Conversion Committee (Epidemiologic Methods), Division of Epidemiology, University of Minnesota, 1996
- Chairperson, Ph.D. Exam Committee, Division of Epidemiology, University of Minnesota, 1996
- Course Instructor: Epidemiology II, 1992-2006
- Course Instructor: Epidemiology I, 1999-2000; 2005
- Course Instructor: Readings in Epidemiology, 1996, 1997
- Course Instructor: Epidemiology - science, methodology, and application (undergraduate) 1997, 98
- Guest Lectures in other courses:
 - Cardiovascular Disease Epidemiology
 - Fundamentals of Clinical Research
 - Nutritional epidemiology

University of Arizona

- Course Instructor: EPID 573A -- Basic principles of epidemiology:
 - 2007–2011 (Spring and Fall)
 - 2012–2017 (Fall)
- Course Instructor: EPID 573B -- Epidemiologic methods
 - 2010–2011 (Spring)
 - 2012–2018 (Fall online; Spring in-class)
- Course Instructor: Doctoral seminar in epidemiology
 - 2007–2009 (Spring and Fall)
- Guest lectures in other courses:
 - Nutritional epidemiology
 - Advanced epidemiology
 - Chronic disease epidemiology
- Academic advisor, exam committee chair or member for many students at both universities

e-textbook (draft chapters)

The Logic and Math of Causal Inquiry: A Guide for the Perplexed

URL: <http://www.u.arizona.edu/~shahar/book.html>

Other Academic Interests

- Philosophy of science
- Applied statistics
- Scientific writing

Publications

1. **Shahar E**: The value of CSF-Glutamine levels in the differential diagnosis of hepatic encephalopathy. M.D. Dissertation, Tel-Aviv University, 1986 (in Hebrew, English abstract).
2. **Shahar E**, Shapiro MS, Shenkman L: Hyperthyroid-induced chorea: Case report and review of the literature. *Isr J Med Sci* 1988;24:264-6.
3. **Shahar E**, Shahar A: The crisis in internal medicine from the resident's viewpoint. *HAREFUAH, Journal of the Israel Medical Association* 1988; 115:144-7 (in Hebrew).
4. **Shahar E**, Shapiro MS: Myokymia: A rare manifestation of thyrotoxicosis. *HAREFUAH, Journal of the Israel Medical Association* 1988;115:69-70 (in Hebrew, English abstract).
5. **Shahar E**, Wohl-Gottesman BS, Shenkman L: Contamination of blood cultures during venepuncture: fact or myth? *Postgrad Med J* 1990;66:1053-8.
6. **Shahar E**: Dexamethasone and acute mountain sickness. *N Engl J Med* 1990;322:1395 (letter)
7. **Shahar E**, Lederer J: Asthenic symptoms in a rural family practice: epidemiologic characteristics and a proposed classification. *J Fam Pract* 1990;31:257-62.
8. **Shahar E**, Lederer J, Uli M: Colorectal cancer in a patient with the irritable bowel syndrome: a diagnostic trap. *The Family Physician* 1990;18:195-8 (in Hebrew).
9. **Shahar E**, Lederer J, Herz MJ: The use of a self-report questionnaire to assess the frequency of sexual dysfunction in family practice clinics. *Family Practice* 1991;8:206-12.
10. **Shahar E**, Lederer J: Methodological classification. *J Fam Pract* 1991;32:14 (letter)

11. **Shahar E**: A putative role of dietary omega-3 polyunsaturated fatty acids in oxidative modification of low density lipoprotein. *Prostaglandins Leukot Essent Fatty Acids* 1993;48:397-9.
12. **Shahar E**, Bisgard K, Folsom A: Response to mail surveys: effect of a request to explain refusal to participate. *Epidemiology* 1993; 4:480-2.
13. **Shahar E**, Folsom AR, Wu KK, Dennis BH, Shimakawa T, Conlan MG, Davis CE, Williams OD: Associations of fish intake and dietary n-3 polyunsaturated fatty acids with a hypocoagulable profile: The Atherosclerosis Risk in Communities (ARIC) Study. *Arterioscler Thromb* 1993;13:1205-12.
14. McGovern PG, Pankow JS, Burke GL, **Shahar E**, Sprafka JM, Folsom AR, Blackburn H: Trends in survival of hospitalized stroke patients between 1970 and 1985: The Minnesota Heart Survey. *Stroke* 1993;24:1640-48.
15. McGovern PG, **Shahar E**, Sprafka JM, Pankow JS: The role of stroke attack rate and case fatality in the decline of stroke mortality: The Minnesota Heart Survey. *Ann Epidemiol* 1993;3:483-7.
16. Melnick SL, **Shahar E**, Folsom AR, Grayston JT, Sorlie PD, Wang SP, Szklo M, for the Atherosclerosis Risk in Communities (ARIC) Study Investigators: Past infection by *Chlamydia pneumoniae* strain TWAR and asymptomatic carotid atherosclerosis. *Am J Med* 1993;95:499-504.
17. Folsom AR, Wu KK, **Shahar E**, Conlan M, Davis CE: Association of hemostatic variables with prevalent cardiovascular disease and asymptomatic carotid artery atherosclerosis. *Arterioscler Thromb* 1993;13:1829-36.
18. **Shahar E**, Folsom AR, Melnick SL, Tockman MS, Comstock GW, Gennaro V, Higgins MW, Sorlie PD, Ko W-J, Szklo M for the ARIC Study Investigators: Dietary n-3 polyunsaturated fatty acids and smoking-related chronic obstructive pulmonary disease. *N Engl J Med* 1994;331:228-33.

19. Brodin E, **Shahar E**, Rosamond WD, et al: Apparently coronary heart disease-free patients in the coronary care unit: Characteristics, medical care, and one-year outcome. *Coronary Artery Disease* 1994;5:737-43.
20. Sprafka JM, Virnig BA, **Shahar E**, McGovern PG: Trends in diabetes prevalence among stroke patients and the effect of diabetes on stroke survival: The Minnesota Heart Survey. *Diabet Med* 1994;11:678-84.
21. **Shahar E**, Folsom AR, Melnick SL, Tockman MS, Comstock GW, Shimakawa T, Higgins MW, Sorlie PD, Szklo M: Does dietary vitamin A protect against airway obstruction? *Am J Respir Crit Care Med* 1994;150:978-82.
22. Sharp DS, Rodriguez BL, **Shahar E**, Hwang L, Burchfiel CM: Fish consumption may limit the damage of smoking on the lung. *Am J Respir Crit Care Med* 1994;150:983-7.
23. **Shahar E**, McGovern PG, Sprafka JM: Factors associated with failure of aspirin treatment. *Stroke* 1994;25:1701-2. (letter)
24. Folsom AR, Ma J, Eckfeldt JH, **Shahar E**, Wu KK: Plasma phospholipid fatty acid composition and factor VII coagulant activity. *Atherosclerosis* 1994;111:199-207.
25. **Shahar E**, McGovern PG, Sprafka JM, et al: Improved survival of stroke patients during the 1980s: The Minnesota Stroke Survey. *Stroke* 1995;26:1-6.
26. **Shahar E**: Low vitamin A intake, airway obstruction link unsupported. *Today in Medicine, Respiratory Disease* 1995;8(1):9-10 (invited submission)
27. Ma J, Folsom AR, **Shahar E**, Eckfeldt JH: Plasma fatty acid composition as an indicator of habitual dietary fat intake in middle-aged adults. *Am J Clin Nutr* 1995;62:564-71.

28. **Shahar E**, McGovern PG: Trials of streptokinase in severe acute ischaemic stroke. *Lancet* 1995;345:578. (letter)
29. **Shahar E**, Pankow JS, McGovern PG: Restriction of fat in the diet of infants. *Lancet* 1995;345:1116-7. (letter)
30. **Shahar E**, Folsom AR: Fish consumption may limit the damage of smoking on the lung. *Am J Respir Crit Care Med* 1995;15(5):1688. (letter)
31. **Shahar E**, McGovern PG: Improved survival of stroke patients during the 1980s: The Minnesota Stroke Survey. *Stroke* 1995;26:1302. (letter)
32. **Shahar E**, Mittleman MA: Recent infection and cerebrovascular ischemia. *Stroke* 1995;26:1503. (letter)
33. **Shahar E**: Three vs. 10 days of trimethoprim/sulfamethoxazole for acute maxillary sinusitis. *JAMA* 1995;274:1341. (letter)
34. McGovern PG, Pankow JS, **Shahar E**, et al: Recent trends in acute coronary heart disease -- mortality, morbidity, medical care and risk factors. *N Engl J Med* 1996;334:884-90.
35. **Shahar E**, Folsom AR, Romm FJ, Bisgard KM, Metcalf PA, Crum L, McGovern PG, Heiss G: Patterns of aspirin use in middle-age adults: The ARIC Study. *Am Heart J* 1996;131:915-22.
36. **Shahar E**, Folsom AR, Salomaa VV, Stinson VL, McGovern PG, Shimakawa T, Chambless LE, Wu KK: Relation of hormone-replacement therapy to measures of plasma fibrinolytic activity. *Circulation* 1996;93:1970-5.
37. Folsom AR, McGovern PG, Nabulsi AA, **Shahar E**, Kahn ESB, Winkhart SP, White AD: Changes in plasma lipids and lipoproteins associated with starting or stopping postmenopausal hormone replacement therapy. *Am Heart J* 1996;132:952-8.

38. Rosamond WD, **Shahar E**, et al: Assessing medical history in coronary heart disease surveillance: Agreement between contemporaneous and retrospective methods. *Epidemiology* 1996;7:447-9.
39. **Shahar E**, Folsom AR, Jackson R: The effect of nonresponse on prevalence estimates for a referent population: Insights from a population-based cohort study. *Ann Epidemiol* 1996;6:498-506.
40. Rosamond WD, **Shahar E**, McGovern PG, et al: Trends in coronary thrombolytic therapy for acute myocardial infarction (The Minnesota Heart Survey Registry, 1990-1993). *Am J Cardiol* 1996;78:271-7.
41. Vitelli LL, Folsom AR, **Shahar E**, Winkhart SP, Shimakawa T, Stevens J, Duncan BB, Chambless LE: Association of dietary composition with fasting serum insulin level: The ARIC Study. *Nutr Metab Cardiovasc Dis* 1996;6:194-202.
42. **Shahar E**, Lewis M, Keil U, McGovern PG, et al: Hospital care and survival of acute myocardial infarction patients in Minnesota and Southern Germany: a comparative study. *Coronary Artery Disease* 1996; 7:467-73.
43. Chambless LE, **Shahar E**, Sharrett AR, Heiss G, Wijnberg L, Paton CC, Sorlie P, Toole JF: Association of transient ischemic attack/stroke symptoms assessed by standardized questionnaire and algorithm with cerebrovascular risk factors and carotid artery wall thickness: The ARIC Study, 1987-1989. *Am J Epidemiol* 1996;144:857-66.
44. **Shahar E**: Epidemiology differs from public health practice. *Epidemiology* 1996;7:558-9. (letter)
45. McGovern PG, **Shahar E**, Folsom AR, Rosamond WD: No relation between excess fatigue and asymptomatic carotid atherosclerosis: The ARIC Study. *Epidemiology* 1996; 7:638-40.

46. Jackson R, Chambless LE, Yang K, Byrne T, Watson R, Folsom A, **Shahar E**, Kalsbeek, W: Differences between respondents and nonrespondents in a multicenter community-based study vary by gender and ethnicity: The ARIC Study. *J Clin Epidemiol* 1996;49:1441-6.
47. **Shahar E**, McGovern PG, Pankow JS, et al: Stroke rates during the 1980s: The Minnesota Stroke Survey. *Stroke* 1997;28:275-9.
48. Liao D, Cooper L, Cai J, Toole J, Bryan N, Burke G, **Shahar E**, Nieto FJ, Mosley T, Heiss G: The prevalence and severity of white matter lesions, their relationship with age, ethnicity, gender, and cardiovascular risk factors - The ARIC Study. *Neuroepidemiology* 1997;16:149-62.
49. Pankow JS, Folsom AR, Province MA, Rao DC, Eckfeldt J, Heiss G, **Shahar E**, Wu KK: Family history of coronary heart disease and hemostatic variables in middle-aged adults. *Thrombosis and Haemostasis* 1997;77:87-93.
50. **Shahar E**: A Popperian perspective of the term "evidence-based medicine". *Journal of Evaluation in Clinical Practice* 1997;3:109-16.
51. Diez-Roux AV, Nieto FJ, Muntaner C, Tyroler HA, Comstock GW, **Shahar E**, Cooper LS, Watson RL, Szklo M: Neighborhood environments and coronary heart disease: a multilevel analysis. *Am J Epidemiol* 1997;146:48-63.
52. **Shahar E**: Antioxidants and ischaemic heart disease. *Lancet* 1997;350:667. (letter)
53. McGovern PG, Herlitz J, Pankow JS, Karlsson T, Dellborg M, **Shahar E**, Luepker RV: Comparison of medical care and 1- and 12-month mortality of hospitalized patients with acute myocardial infarction in Minneapolis-St. Paul, USA and Goteborg, Sweden. *Am J Cardiol* 1997;80:557-62.
54. **Shahar E**: Your letter failed to win a place. *Br Med J* 1997;315:1608-9.

55. Vitelli LL, **Shahar E**, Heiss G, McGovern PG, Brancati FL, Eckfeldt JH, Folsom AR: Glycosylated hemoglobin level and carotid intimal-medial thickening in nondiabetic individuals: The ARIC Study. *Diabetes Care* 1997;20:1454-8.
56. Liao D, Myers R, Hunt S, **Shahar E**, Paton C, Burke G, Province M, Heiss G: Familial history of stroke and stroke risk: The Family Heart Study. *Stroke* 1997;28:1908-12.
57. Pieper RM, Arnett DA, McGovern PG, **Shahar E**, Blackburn H, Luepker RV: Trends in cholesterol knowledge and screening and hypercholesterolemia awareness and treatment, 1980-1992: The Minnesota Heart Survey. *Arch Intern Med* 1997;157:2326-32.
58. **Shahar E**: Translating clinical trials into practice. *Lancet* 1997;349:654-5. (letter)
59. Zheng Z-J, Folsom AR, **Shahar E**, McGovern PG, Eckfeldt JH: Association of plasma fatty acid composition with lower extremity arterial disease. *Nutr Metab Cardiovasc Dis* 1997;7:360-70.
60. Smith MA, **Shahar E**, Doliszny KM, McGovern PG, Arnett DK, Luepker RV: Trends in medical care of hospitalized stroke patients between 1980 and 1990: The Minnesota Stroke Survey. *J of Stroke and Cerebrovascular Diseases* 1998;7:76-84.
61. Cerhan JR, Folsom AR, Mortimer JA, **Shahar E**, Knopman DS, McGovern PG, Hays MA, Crum LD, Heiss G: Correlates of cognitive function in middle-aged adults. *Gerontology* 1998;44:95-105.
62. Pankow JS, Folsom AR, **Shahar E**, Tsai MY, Jeffery RW, Wing RR: Weight-loss induced changes in plasma factor VII coagulant activity and relation to the factor VII Arg/Gln₃₅₃ polymorphism in moderately obese adults. *Thromb Haemost* 1998;79:784-9.
63. Vitelli LL, Crow RS, **Shahar E**, Hutchinson RG, Rautaharju PM, Folsom AR: Electrocardiographic findings in a healthy biracial population. *Am J Cardiol* 1998;81:453-9.

64. Smith MA, Doliszny KM, **Shahar E**, et al: Delayed hospital arrival for acute stroke: The Minnesota Stroke Survey. *Ann Intern Med* 1998;129:190-6.
65. Arnett DK, Sprafka JM, McGovern PG, Jacobs DR, **Shahar E**, McCarty M, Luepker RV: Trends in cigarette smoking: The Minnesota Heart Survey, 1980 through 1992. *Am J Public Health* 1998;88:1230-3.
66. Whitney CW, Gottlieb DJ, Redline S, Norman RG, Dodge RR, **Shahar E**, Surovec S, Nieto FJ: Reliability of scoring respiratory disturbance indices and sleep staging. *Sleep* 1998;21:749-57.
67. **Shahar E**: Evidence-based medicine: a new paradigm or the Emperor's new clothes? *Journal of Evaluation in Clinical Practice* 1998;4:277-82.
68. **Shahar E**, Boland LL, Folsom AR, Tockman MS, McGovern PG, Eckfeldt JH: Docosahexaenoic acid and smoking-related chronic obstructive pulmonary disease. *Am J Respir Crit Care Med* 1999;159:1780-5.
69. Evenson KR, Rosamond WD, Cai J, Toole JF, Hutchinson RG, **Shahar E**, Folsom AR: Physical activity and ischemic stroke risk: The Atherosclerosis Risk in Communities Study. *Stroke* 1999;30:1333-9.
70. Rosamond WD, Folsom AR, Chambless LE, Wang CH, McGovern PG, Howard G, Cooper LS, **Shahar E**: Stroke incidence and survival among middle-aged adults: 9-year follow-up of the Atherosclerosis Risk in Communities (ARIC) Cohort. *Stroke* 1999;30:736-43.
71. Folsom AR, Rosamond WD, **Shahar E**, Cooper LS, Aleksic N, Nieto FJ, Rasmussen ML, Wu KK: Prospective study of markers of hemostatic function with risk of ischemic stroke. The Atherosclerosis Risk in Communities (ARIC) Study Investigators. *Circulation* 1999;100:736-42.
72. Krop JS, Coresh J, Chambless LE, **Shahar E**, Watson RL, Szklo M, Brancati FL: A community-based study of explanatory factors for the excess risk for early renal function decline in blacks vs

whites with diabetes: The Atherosclerosis Risk in Communities Study. *Arch Intern Med* 1999;159:1777-83.

73. Smith MA, **Shahar E**, McGovern PG, et al: HMO membership, patient age and the use of specialty care for acute hospitalized stroke patients : The Minnesota Stroke Survey. *Medical Care* 1999;37:1186-98.
74. Wiesen AR, Folsom AR, **Shahar E**, Brancati FL, McGovern PG, Cooper LS, Hutchinson RG: Relation of aspirin and non-steroidal anti-inflammatory agents to incident hypertension. *CVD Prevention* 1999;2:187-93.
75. Nelson JJ, Liao D, Sharrett AR, Folsom AR, Chambless LE, **Shahar E**, Szklo M, Eckfeldt J, Heiss G: Serum albumin level as a predictor of incident coronary heart disease: The Atherosclerosis Risk in Communities (ARIC) Study. *Am J Epidemiol* 2000;151:468-77.
76. Gress TW, Nieto FJ, **Shahar E**, Wofford MR, Brancati FL, for the Atherosclerosis Risk in Communities Study: Hypertension and antihypertensive therapy as risk factors for type 2 diabetes mellitus. *N Engl J Med* 2000;342:905-12.
77. Nieto FJ, Young T, Lind B, **Shahar E**, Samet J, Redline S, D'Agostino R, Newman A, Lebowitz MD, Pickering TG: Association of sleep-disordered breathing, sleep apnea, and hypertension in a large community-based study. *JAMA* 2000;283:1829-36.
78. Sorlie PD, Nieto FJ, Adam E, Folsom AR, **Shahar E**, Massing M: A prospective study of cytomegalovirus, herpes simplex virus I, and coronary heart disease: The Atherosclerosis Risk in Communities (ARIC) Study. *Arch Intern Med* 2000;160:2027-32
79. Chambless LE, Folsom AR, Clegg LX, Sharrett AR, **Shahar E**, Nieto FJ, Rosamond WD, Evans G: Carotid wall thickness is predictive of incident clinical stroke: the Atherosclerosis Risk in Communities (ARIC) study. *Am J Epidemiol.* 2000;151(5):478-87

80. **Shahar E**, Whitney CW, Redline S, Lee ET, Newman AB, Nieto FJ, O'Connor GT, Boland LL, Schwartz JE, Samet JM: Sleep-disordered breathing and cardiovascular disease: Cross-sectional results of the Sleep Heart Health Study. *Am J Respir Crit Care Med* 2001;163:19-25.
81. McGovern PG, Jacobs DR JR, **Shahar E**, Arnett DK, Folsom AR, Blackburn H, Luepker RV: Trends in acute coronary heart disease mortality, morbidity, and medical care from 1985 through 1997: The Minnesota Heart Survey. *Circulation* 2001;104:19-24.
82. Newman AB, Nieto FJ, Guidry U, Lind BK, Redline S, **Shahar E**, Pickering TG, Quan SF: Relation of sleep-disordered breathing to cardiovascular disease risk factors: The Sleep Heart Health Study. *Am J Epidemiol* 2001;154:50-9.
83. Wong TY, Klein R, Couper DJ, Cooper LS, **Shahar E**, Hubbard LD, Wofford MR, Sharrett AR: Retinal microvascular abnormalities and incident stroke: The Atherosclerosis Risk in Communities Study. *Lancet* 2001;358:1134-40.
84. Lee CD, Folsom AR, Nieto FJ, Chambless LE, **Shahar E**, Wolfe D: White blood cell count and incidence of coronary heart disease and ischemic stroke and mortality from cardiovascular disease in African-American and white men and women: Atherosclerosis Risk in Communities Study. *Am J Epidemiol* 2001;154:758-64.
85. Young T, **Shahar E**, Nieto FJ, Redline S, Newman AB, Gottlieb DJ, Walsleben JA, Finn L, Enright P, Samet JM: Predictors of sleep-disordered breathing in community-dwelling adults: The Sleep Heart Health Study. *Arch Intern Med* 2002;162:893-900.
86. Hunt KJ, Pankow JS, Offenbacher S, Kritchevsky SB, Duncan BB, **Shahar E**, Sharrett AR, Heiss G: B-mode ultrasound-detected carotid artery lesions with and without acoustic shadowing and their association with markers of inflammation and endothelial activation: The Atherosclerosis Risk in Communities Study. *Atherosclerosis* 2002;162:145-55.

87. Mink PM, **Shahar E**, Rosamond WD, Alberg AJ, Folsom AR: Serum insulin and glucose levels and breast cancer incidence: The Atherosclerosis Risk in Communities (ARIC) Study. *Am J Epidemiol* 2002;156:349-52.
88. Arnett DK, McGovern PG, Jacobs DR Jr, **Shahar E**, Duval S, Blackburn H, Luepker RV: Fifteen-year trends in cardiovascular risk factors (1980-1982 through 1995-1997): The Minnesota Heart Survey. *Am J Epidemiol* 2002;156:929-35.
89. Boland LL, **Shahar E**, Iber C, Knopman DS, Kuo TF, Nieto FJ: Measures of cognitive function in persons with varying degrees of sleep-disordered breathing: the Sleep Heart Health Study. *J Sleep Res.* 2002;11(3):265-72
90. Sanders MH, Newman AB, Haggerty CL, Redline S, Lebowitz M, Samet J, O'Connor GT, Punjabi NM, **Shahar E**: Sleep and sleep-disordered breathing in adults with predominantly mild obstructive airway disease. *Am J Respir Crit Care Med.* 2003;167(1):7-14
91. **Shahar E**: Generalizability: beyond plausibility and handwaving. *Journal of Evaluation in Clinical Practice* 2003;9(2):151-9.
92. **Shahar E**: On morality and logic in medical practice: invited commentary on 'A critical appraisal of evidence-based medicine: some ethical considerations' (Gupta 2003); *Journal of Evaluation in Clinical Practice* 9, 111-121).2003 May;9(2):133-5.
93. **Shahar E**, Chambless LE, Rosamond WD, Boland LL, Ballantyne CM, McGovern PG, Sharrett AR: Plasma lipid profile and incident ischemic stroke: The Atherosclerosis Risk in Communities (ARIC) Study. *Stroke* 2003;34(3):623-31
94. Resnick HE, Redline S, **Shahar E**, Gilpin A, Newman A, Walter R, Ewy GA, Howard BV, Punjabi NM: Diabetes and sleep disturbances: findings from the Sleep Heart Health Study. *Diabetes Care* 2003;26(3):702-9

95. **Shahar E**, Redline S, Young T, Boland LL, Baldwin CM, Nieto FJ, O'Connor GT, Rapoport DM, Robbins JA: Hormone-replacement therapy and sleep-disordered breathing. *American Journal of Respiratory and Critical Care Medicine* 2003;167(9):1186-92
96. Steffen LM, Jacobs DR Jr, Stevens J, **Shahar E**, Carithers T, Folsom AR: Associations of whole-grain, refined-grain, and fruit and vegetable consumption with risks of all-cause mortality and incident coronary artery disease and ischemic stroke: the Atherosclerosis Risk in Communities (ARIC) Study. *Am J Clin Nutr.* 2003;78(3):383-90
97. Walsleben JA, Kapur VK, Newman AB, **Shahar E**, Bootzin RR, Rosenberg CE, O'Connor G, Nieto FJ: Sleep and reported daytime sleepiness in normal subjects: the Sleep Heart Health Study. *Sleep* 2004;27(2):293-8
98. Boland LL, **Shahar E**, Wong TY, Klein R, Punjabi N, Robbins JA, Newman AB: Sleep-disordered breathing is not associated with the presence of retinal microvascular abnormalities: the Sleep Heart Health Study. *Sleep* 2004;27(3):467-73
99. Chambless LE, Heiss G, **Shahar E**, Earp MJ, Toole J: Prediction of ischemic stroke risk in the atherosclerosis risk in communities study. *Am J Epidemiol.* 2004;160(3):259-69
100. Weitzman S, Wang C, Rosamond WD, Chambless LE, Cooper LS, **Shahar E**, Goff DC: Is diabetes an independent risk factor for mortality after myocardial infarction? The ARIC (Atherosclerosis Risk in Communities) Surveillance Study. *Acta Diabetol.* 2004;41(2):77-83
101. **Shahar E**, Lee S, Kim J, et al: Hospitalized heart failure: rates and long-term mortality. *J of Cardiac Failure* 2004;10:374-379.
102. Punjabi NM, **Shahar E**, Redline S, Gottlieb DJ, Givelber R, Resnick HE; Sleep Heart Health Study Investigators: Sleep-disordered breathing, glucose intolerance, and insulin resistance: the Sleep Heart Health Study. *Am J Epidemiol.* 2004;160(6):521-30.

103. Schanen JG, Iribarren C, **Shahar E**, Punjabi NM, Rich SS, Sorlie PD, Folsom AR: Asthma and incident cardiovascular disease: the Atherosclerosis Risk in Communities Study. *Thorax* 2005;60:633-8.
104. Bild DE, Detrano R, Peterson D, Guerci A, Liu K, **Shahar E**, Ouyang P, Jackson S, Saad MF: Ethnic differences in coronary calcification: the Multi-Ethnic Study of Atherosclerosis (MESA). *Circulation*. 2005;111(10):1313-20.
105. Redline S, Min N, **Shahar E**, Rapoport D, O'Connor G: Polysomnographic predictors of blood pressure and hypertension: is one index best? *Sleep* 2005;28:1122-30.
106. Stang PE, Carson AP, Rose KM, Mo J, Ephross SA, **Shahar E**, Szklo M. Headache, cerebrovascular symptoms, and stroke: the Atherosclerosis Risk in Communities Study. *Neurology* 2005; 64:1573-77.
107. Selvin E, Coresh J, **Shahar E**, Zhang L, Steffes M, Sharrett AR: Glycaemia (haemoglobin A1c) and incident ischaemic stroke: the Atherosclerosis Risk in Communities (ARIC) Study. *Lancet Neurol* 2005;4(12):821-6.
108. Hozawa A, Folsom AR, Ibrahim H, Nieto FJ, Rosamond WD, **Shahar E**: Serum uric acid and risk of ischemic stroke: The ARIC Study. *Atherosclerosis* 2006;187:401-407.
109. Mertens AJ, Sweeney C, **Shahar E**, Rosamond WD, Folsom AR: Physical activity and breast cancer incidence in middle-aged women: a prospective cohort study. *Breast Cancer Res Treat* 2006;97:209-214.
110. Wang L, Jerosch-Herold M, Jacobs DR Jr, **Shahar E**, Detrano R, Folsom AR: Coronary artery calcification and myocardial perfusion in asymptomatic adults: The MESA (Multi-Ethnic Study of Atherosclerosis). *J Am Coll Cardiol* 2006;48:1018-1026.

111. Wang L, Jerosch-Herold M, Jacobs D, **Shahar E**, Folsom AR: Coronary risk factors and myocardial perfusion in asymptomatic adults: the Multi-Ethnic Study of Atherosclerosis (MESA). *J Am Coll Cardiol*. 2006;47:565-72
112. Mehra R, Benjamin EJ, **Shahar E**, Gottlieb DJ, Nawabit R, Kirchner HL, Sahadevan J, Redline S: Association of nocturnal arrhythmias with sleep-disordered Breathing. *Am J Respir Crit Care Med*. 2006;173:910-6
113. Wong TY, Amirul Islam FM, Klein R, Klein BEK, Cotch MF, Castro C, Sharrett AR, **Shahar E**: Retinal vascular caliber, cardiovascular risk factors, and inflammation: The Multi-Ethnic Study of Atherosclerosis (MESA). *Invest Ophthalmol Vis Sci* 2006;47:2341–2350.
114. Hozawa A, Billings JL, **Shahar E**, Ohira T, Rosamond WD, Folsom AR: Lung function and ischemic stroke incidence: The Atherosclerosis Risk in Communities Study. *Chest* 2006; 130:1642–1649.
115. Kim J, Jacobs DR, Leupker RV, **Shahar E**, Margolis KL, Becker MP: Prognostic value of a novel classification scheme for heart failure. *Am J Epidemiol* 2006;164:184-93.
116. Ohira T, **Shahar E**, Chambless LE, Rosamond WD, Mosley TH J Jr., Folsom AR: Risk factors for ischemic stroke subtypes: The Atherosclerosis Risk in Communities Studies. *Stroke* 2006;37:2493-8.
117. **Shahar E**: On editorial practice and peer review. *Journal of Evaluation in Clinical Practice* 2007;13:699-701
118. **Shahar E**, Lee S: Historical trends in survival of hospitalized heart failure patients: 2000 versus 1995. *BMC Cardiovascular Disorders* 2007, 7:2
119. Quan SF, O'Connor GT, Quan JS, Redline S, Resnick HE, **Shahar E**, Siscovick D, Sherrill DL: Association of physical activity with sleep-disordered breathing. *Sleep and Breathing* 2007;11:149-157

120. Sturgeon JD, Folsom AR, Longstreth Jr, WT, **Shahar E**, Rosamond WD, Cushman M: Risk factors for intracerebral hemorrhage in a pooled prospective study. *Stroke* 2007;38:2718-25
121. **Shahar E**: Commentary: interpreting the interpretation. *Journal of Evaluation in Clinical Practice* 2007;13:693-4
122. **Shahar E**: Estimating causal parameters without target populations. *Journal of Evaluation in Clinical Practice* 2007;13:814-816
123. Winkelman JW, **Shahar E**, Sharief I, Gottlieb DJ: Association of restless legs syndrome and cardiovascular disease in the Sleep Heart Health Study. *Neurology* 2008;70:35-42.
124. Wattanakit K, Boland L, Punjabi NM, **Shahar E**: Relation of sleep-disordered breathing to carotid plaque and intima-media thickness. *Atherosclerosis* 2008;197:125–131
125. **Shahar E**, Heiss G, Rosamond WD, Szklo M: Baldness and myocardial infarction in men: The Atherosclerosis Risk in Communities (ARIC) Study. *Am J Epidemiol* 2008;167:676-83
126. **Shahar E**, Burke GL, Cushman M, Heckbert SR, Ouyang P, Szklo M: Post menopausal hormones and measures of subclinical atherosclerosis: The Multi-Ethnic Study of Atherosclerosis. *Preventive Medicine* 2008 Jul;47(1):38-45
127. Bahrami H, Bluemke DA, Kronmal R, Bertoni AG, Lloyd-Jones DM, **Shahar E**, Szklo M, Lima JA: Novel metabolic risk factors for incident heart failure and their relationship with obesity: the MESA (Multi-Ethnic Study of Atherosclerosis) study. *J Am Coll Cardiol* 2008;51:1775-83
128. Sturgeon JD, Folsom AR, Longstreth WT Jr, **Shahar E**, Rosamond WD, Cushman M: Hemostatic and inflammatory risk factors for intracerebral hemorrhage in a pooled cohort. *Stroke* 2008;39(8):2268-73

129. **Shahar E**: Does anyone know the road from a randomized trial to personalized medicine? *Journal of Evaluation in Clinical Practice* 2008;14(5):726-731 (book review)
130. Kucharska-Newton AM, Rosamond WD, Mink PJ, Alberg AJ, **Shahar E**, Folsom AR: HDL-cholesterol and incidence of breast cancer in the ARIC cohort study. *Annals of Epidemiology* 2008;18(9):671-7
131. **Shahar E**: Evaluating the effect of change on change: a different viewpoint. *Journal of Evaluation in Clinical Practice* 2009;15(1):204-7
132. Rerkpattanapipat P, D'Agostino RB Jr, Link KM, **Shahar E**, Lima JA, Bluemke DA, Sinha S, Herrington DM, Hundley WG: The location of arterial stiffening differs in those with impaired fasting glucose versus diabetes: Implications for left ventricular hypertrophy from the Multi-Ethnic Study of Atherosclerosis. *Diabetes* 2009;58(4):946-53
133. O'Connor GT, Caffo B, Newman AB, Quan SF, Rapoport DM, Redline S, Resnick H, Samet J, **Shahar E**: Prospective study of sleep-disordered breathing and hypertension: The Sleep Heart Health Study. *Am J Respir Crit Care Med* 2009;179(12):1159-64
134. **Shahar E**: Causal diagrams for encoding and evaluation of information bias. *Journal of Evaluation in Clinical Practice* 2009;15(3):436-40
135. Ikram MA et al. (including **Shahar E**): Genomewide association studies of stroke. *N Engl J Med* 2009 Apr 23;360(17):1718-28
136. Silva GE, An MW, Goodwin JL, **Shahar E**, Redline S, Resnick H, Baldwin CM, Quan SF: Longitudinal evaluation of sleep-disordered breathing and sleep symptoms with change in quality of life: the Sleep Heart Health Study (SHHS). *Sleep* 2009 ;32(8):1049-57
137. Punjabi NM, Caffo BS, Goodwin JL, Gottlieb DJ, Newman AB, O'Connor GT, Rapoport DM, Redline S, Resnick HE, Robbins JA, **Shahar E**, Unruh ML, Samet JM: Sleep-disordered breathing

and mortality: a prospective cohort study. *PLoS Med* 2009 Aug;6(8):e1000132. Epub 2009 Aug 18

138. Monahan K, Storfer-Isser A, Mehra R, **Shahar E**, Mittleman M, Rottman J, Punjabi N, Sanders M, Quan SF, Resnick H, Redline S: Triggering of nocturnal arrhythmias by sleep-disordered breathing events. *J Am Coll Cardiol* 2009;54:1797-804
139. **Shahar E**: The association of body mass index with health outcomes: causal, inconsistent, or confounded? *Am J Epidemiol* 2009;170:957-8
140. **Shahar E**: Shahar responds to "Causal Diagrams and Measurement Bias". *Am J Epidemiol* 2009;170:963-4 (Originally submitted under the title: "Causal diagrams, constructs, and measurement error: an erroneous amalgamation")
141. **Shahar E**: Making sense of health statistics? *Journal of Evaluation in Clinical Practice* 2009;15:1217–1219 (commentary)
142. Granado NS, Smith TC, Swanson GM, Harris RB, **Shahar E**, Smith B, Boyko EJ, Wells TS, Ryan MA: Newly reported hypertension after military combat deployment in a large population-based study. *Hypertension* 2009;54:966-73
143. **Shahar E**, Shahar DJ: On the causal structure of information bias and confounding bias in randomized trials. *Journal of Evaluation in Clinical Practice* 2009;15:1214-6
144. Hankinson JL, Kawut SM, **Shahar E**, Smith LJ, Stukovsky KH, Barr RG: Performance of ATS-recommended spirometry reference values in a multiethnic sample of adults: The MESA-Lung Study. *Chest* 2010;137:138-145
145. Barr RG, Bluemke DA, Ahmed F, Carr JJ, Enright PL, Hoffman EA, Jiang R, Kawut SM, Kronmal RA, Lima JA, **Shahar E**, Smith LJ, Watson KE: Percent emphysema, airflow obstruction, and impaired left ventricular filling. *N Engl J Med* 2010;362: 217-27

146. Yamagishi K, Ohira T, Nakano H, Bielinski SJ, Sakurai S, Imano H, Kiyama M, Kitamura A, Sato S, Konishi M, **Shahar E**, Folsom AR, Iso H, Tanigawa T: Cross-cultural comparison of the sleep-disordered breathing prevalence among Americans and Japanese. *European Respiratory Journal* 2010;36:379-84
147. Agarwal SK, Heiss G, Rautaharju PM, **Shahar E**, Massing MW, Simpson RJ Jr: Premature ventricular complexes and the risk of incident stroke. The Atherosclerosis Risk In Communities (ARIC) Study. *Stroke* 2010; 41:588-93
148. **Shahar E**, Shahar DJ: On the definition of effect modification. *Epidemiology* 2010; 21:587 (letter)
149. **Shahar E**, Shahar DJ: More on selection bias (originally submitted and proofread under the title "On the hazard ratio and disease-related colliding bias"). *Epidemiology* 2010; 21:429-30 (letter)
150. **Shahar E**: Metabolic syndrome? A critical look from the viewpoints of causal diagrams and statistics. *Journal of Cardiovascular Medicine* 2010;11:772-9
151. Redline S, Yenokyan G, Gottlieb DJ, **Shahar E**, O'Connor GT, Resnick HE, Diener-West M, Sanders MH, Wolf PA, Geraghty EM, Ali T, Lebowitz M, Punjabi NM: Obstructive sleep apnea-hypopnea and incident stroke: The Sleep Heart Health Study. *Am J Respir Crit Care Med* 2010;182:269-77
152. Gottlieb DJ, Yenokyan G, Newman AB, O'Connor GT, Punjabi NM, Quan SF, Redline S, Resnick HE, Tong EK, Diener-West M, **Shahar E**: Prospective study of obstructive sleep apnea and incident coronary heart disease and heart failure: The Sleep Heart Health Study. *Circulation* 2010;122:352-60
153. Baron KG, Liu K, Chan C, **Shahar E**, Hasnain-Wynia R, Zee P: Race and ethnic variation in excessive daytime sleepiness: the multi-ethnic study of atherosclerosis. *Behav Sleep Med* 2010;8:231-45.

154. **Shahar E**, Shahar DJ: Causal diagrams and change variables. *Journal of Evaluation in Clinical Practice* 2012;18:143–148 (Epub Sep 12, 2010)
155. Ohira T, **Shahar E**, Iso H, Chambless LE, Rosamond, Sharrett AR, Folsom AR: Carotid artery wall thickness and risk of stroke subtypes: The Atherosclerosis Risk in Communities (ARIC) Study. *Stroke* 2011;42:397-403
156. **Shahar E**, Shahar DJ: Causal diagrams, information bias, and thought bias. *Pragmatic and Observational Research*, 2010;1:33–47
157. Moorthy S, Cheung N, Klein R, **Shahar E**, Wong TY: Are lung disease and function related to age-related macular degeneration? *Am J Ophthalmol*. 2011;151:375-9.
158. **Shahar E**: A method to detect an unknown confounder: something from nothing? *Journal of Evaluation in Clinical Practice*, Epub March 13, 2011
159. O'Brien EC, Rose KM, **Shahar E**, Rosamond WD: Stroke mortality, clinical presentation and day of arrival: The Atherosclerosis Risk in Communities (ARIC) Study. *Stroke Res Treat*, Epub May 5, 2011
160. **Shahar E**, Shahar DJ: Marginal structural models: much ado about (almost) nothing. *Journal of Evaluation in Clinical Practice*, 2013 Feb;19(1):214-22. Epub 2011 Aug 24
161. Agarwal SK, Simpson RJ Jr, Rautaharju P, Alonso A, **Shahar E**, Massing M, Saba S, Heiss G: Relation of ventricular premature complexes to heart failure (from the Atherosclerosis Risk In Communities [ARIC] Study). *Am J Cardiol* 2012;109(1):105-9. Epub 2011 Sep 24
162. Folsom AR, Yatsuya H, Psaty BM, **Shahar E**, Longstreth WT Jr: Carotid intima-media thickness, electrocardiographic left ventricular hypertrophy, and incidence of intracerebral hemorrhage. *Stroke* 2011;42:3075-3079

163. **Shahar E**: Research and medicine: human conjectures at every turn. *The International Journal of Person Centered Medicine* 2011;1(2):250-253 (essay review)
164. **Shahar E**: On science, statistics and mental states. *The International Journal of Person Centered Medicine* 2011;1(3):635-636 (letter)
165. **Shahar E**, Shahar DJ: Causal diagrams and three pairs of biases. In: *Epidemiology –Current Perspectives on Research and Practice* (Lunet N, Editor).
www.intechopen.com/books/epidemiology-current-perspectives-on-research-and-practice, 2012:pp. 31-62
166. Jones CD, Loehr L, Franceschini N, Rosamond WD, Chang PP, **Shahar E**, Couper DJ, Rose KM. Orthostatic hypotension as a risk factor for incident heart failure: The Atherosclerosis Risk in Communities Study. *Hypertension* 2012;59(5):913-8
167. Agarwal SK, Heiss G, Barr RG, Chang PP, Loehr LR, Chambless LE, **Shahar E**, Kitzman DW, Rosamond WD. Airflow obstruction, lung function and risk of incident heart failure: the Atherosclerosis Risk in Communities (ARIC) Study. *European Journal of Heart Failure* 2012; 14(4):414-22.
168. Rosamond WD, Chang PP, Baggett C, Johnson A, Bertoni AG, **Shahar E**, Deswal A, Heiss G, Chambless LE. Classification of heart failure in the Atherosclerosis Risk in Communities (ARIC) Study: A comparison of diagnostic criteria. *Circ Heart Fail* 2012;5(2):152-9
169. **Shahar E**, Shahar DJ. Causal diagrams and the logic of matched case-control studies. *Clinical Epidemiology* 2012;4:137-144 [**Erratum**: *Clinical Epidemiology* 2014;6:59]
170. Agarwal SK, Chambless LE, Ballantyne CM, Astor B, Bertoni AG, Chang PP, Folsom AR, He M, Hoogeveen RC, Ni H, Quibrera M, Rosamond WD, Russell SD, **Shahar E**, Heiss G. Prediction of incident heart failure in general practice: The ARIC Study. *Circulation Heart Failure* 2012 May 15 [Epub ahead of print]

171. **Shahar E.** Causal diagrams, gastroesophageal reflux, and erosive esophagitis. *Journal of Evaluation in Clinical Practice* Epub 2012 July 16
172. Autenrieth CS, Evenson KR, Yatsuya H, **Shahar E**, Baggett C, Rosamond WD. Association between physical activity and risk of stroke subtypes: The Atherosclerosis Risk in Communities Study. *Neuroepidemiology* 2012 Oct 24;40(2):109-116.
173. **Shahar E.** A new criterion for confounder selection? Neither a confounder nor science. *Journal of Evaluation in Clinical Practice* Epub 2012, Nov 8
174. **Shahar E**, Shahar DJ. Causal diagrams and the cross-sectional study. *Clinical Epidemiology* 2013;5:57–65
175. Loehr LR, Agarwal SK, Baggett C, Wruck LM, Chang PP, Solomon SD, **Shahar E**, Ni H, Rosamond WD, Heiss G. Classification of acute decompensated heart failure (ADHF): an automated algorithm compared to a physician reviewer panel: the ARIC study. *Circulation Heart Failure* 2013;6:719-26
176. Powell R, Davidson D, Divers J, Manichaikul A, Carr JJ, Detrano R, Hoffman EA, Jiang R, Kronmal RA, Liu K, Punjabi NM, **Shahar E**, Watson KE, Rotter JI, Taylor KD, Rich SS, Barr RG. Genetic ancestry and the relationship of cigarette smoking to lung function and per cent emphysema in four race/ethnic groups: a cross-sectional study. *Thorax* 2013;68:634-4
177. **Shahar E**, Shahar DJ. Causal diagrams, the placebo effect, and the expectation effect. *International Journal of General Medicine* 2013;6:821-8
178. Huxley RR, Bell EJ, Lutsey PL, Bushnell C, **Shahar E**, Rosamond W, Gottesman R, Folsom A. A comparative analysis of risk factors for stroke in blacks and whites: the Atherosclerosis Risk in Communities study. *Ethn Health* 2014;6:601-616
179. Chang PP, Rosamond WD, **Shahar E**, Bertoni AG, Russell SD, He M, Ni H, Mosley TH, Wagenknecht LE, Samdarshi TE, Chambless LE. Incidence and survival of hospitalized acute

decompensated heart failure in four U.S. communities: The Atherosclerosis Risk in Communities (ARIC) Study. *American Journal of Cardiology* 2014;113:504-510

180. Ibrahim-Verbaas CA et al. (including **Shahar E**). Predicting stroke through genetic risk functions: The CHARGE risk score project. *Stroke* 2014;45:403-12
181. **Shahar E**. Apnea-hypopnea index: time to wake up. *Nature and Science of Sleep* 2014;6:51-56
182. Snyder ML, Love SA, Sorlie PD, Rosamond WD, Antini C, Metcalf PA, Hardy S, Suchindran CM, **Shahar E**, Heiss G. Redistribution of heart failure as the cause of death: the Atherosclerosis Risk in Communities Study. *Popul Health Metr* 2014;12:10
183. Ferket BS, van Kempen BJ, Wieberdink RG, Steyerberg EW, Koudstaal PJ, Hofman A, **Shahar E**, Gottesman RF, Rosamond W, Kizer JR, Kronmal RA, Psaty BM, Longstreth WT Jr, Mosley T, Folsom AR, Hunink MG, Ikram MA. Separate prediction of intracerebral hemorrhage and ischemic stroke. *Neurology*. 2014;82:1804-12
184. Bis JC et al. (including **Shahar E**). Associations of NINJ2 Sequence Variants with Incident Ischemic Stroke in the Cohorts for Heart and Aging in Genomic Epidemiology (CHARGE) Consortium. *PLoS One*. 2014 Jun 24;9(6):e99798
185. Koton S, Schneider ALC, Rosamond WD, **Shahar E**, Sang Y, Gottesman RF, Coresh J. Stroke incidence and mortality trends in US communities, 1987 to 2011. *JAMA* 2014;312:259-68
186. **Shahar E**. On medicine and science. *European Journal for Person Centered Healthcare* 2014;2:258-9 (commentary)
187. **Shahar E**. Reflux, Barrett's esophagus, and esophageal adenocarcinoma. *Scand J Gastroenterol* 2014;49:1499-1500
188. Jones SA, Gottesman RF, **Shahar E**, Wruck, Rosamond WD. Validity of hospital discharge diagnosis codes for stroke: The Atherosclerosis Risk in Communities Study. *Stroke* 2014;45:3219-45

189. Kwon Y, Duprez DA, Jacobs DR, Nagayoshi M, McClelland RL, **Shahar E**, Budoff M, Redline S, Shea S, Carr JJ, Lutsey PL. Obstructive sleep apnea and progression of coronary artery calcium: the multi-ethnic study of atherosclerosis study. *J Am Heart Assoc*. 2014 Sep 26;3(5)
190. Carty CL et al. (including **Shahar E**). Meta-analysis of genome-wide association studies identifies genetic risk factors for stroke in African Americans. *Stroke* 2015 Aug;46(8):2063-8
191. Lutsey PL, McClelland RL, Duprez D, Shea S, **Shahar E**, Nagayoshi M, Budoff M, Kaufman JD, Redline S. Objectively measured sleep characteristics and prevalence of coronary artery calcification: the Multi-Ethnic Study of Atherosclerosis Sleep study. *Thorax* 2015 Sep;70:880-7
192. **Shahar E**, Shahar DJ. On which variable(s) should we condition to remove confounding bias? *British Journal of Medicine and Medical Research* 2015;10(4):1-9
193. Jones SB, Loehr L, Avery CL, Gottesman RF, Wruck L, Henderson L, **Shahar E**, Rosamond WD, Midlife alcohol consumption and the risk of stroke in the Atherosclerosis Risk in Communities Study. *Stroke* 2015;46(11):3124-30
194. O'Brien EC, Greiner MA, Sims M, Hardy NC, Wang W, **Shahar E**, Hernandez AF, Curtis LH. Depressive symptoms and risk of cardiovascular events in African Americans: findings from the Jackson Heart Study. *Circ Cardiovasc Qual Outcomes* 2015 Nov;8(6):552-9. doi: 10.1161/CIRCOUTCOMES.115.001800. Epub 2015 Nov 17.
195. Lutsey PL, Bengtson LGS, Punjabi NM, **Shahar E**, Mosley TH, Gottesman RF, Wruck LM, MacLehose RF, Alonso A. Obstructive sleep apnea and 15-Year cognitive decline: The Atherosclerosis Risk in Communities (ARIC) Study. *Sleep* 2016;39(2):309-16
196. Folsom AR, Gottesman RF, Appiah D, **Shahar E**, Mosley TH. Plasma D-Dimer and incident ischemic stroke and coronary heart disease: the ARIC Study. *Stroke* 2016;47(1):18-23
197. Wang W, Shen G, **Shahar E**, Bidulescu A, Kimberly WT, Sheth KN, Campbell BW, Horbal S, Correa A, Griswold ME. Forced Expiratory Volume in the First Second and Aldosterone as

Mediators of Smoking Effect on Stroke in African Americans: The Jackson Heart Study. *J Am Heart Assoc.* 2016;5(1)

198. Nagayoshi M, Punjabi NM, Selvin E, Pankow JS, **Shahar E**, Iso H, Folsom AR, Pamela L. Lutsey PL. Obstructive sleep apnea and incident type 2 diabetes. *Sleep Med* 2016 Sep;25:156-161
199. Nagayoshi M, Lutsey PL, Benkeser D, Wassel CL, Folsom AR, **Shahar E**, Iso H, Allison MA, Criqui MH, Redline S. Association of sleep apnea and sleep duration with peripheral artery disease: The Multi-Ethnic Study of Atherosclerosis (MESA). *Atherosclerosis* 2016 Aug;251:467-75
200. Lutsey PL, Norby FL, Gottesman RF, Mosley T, MacLehose RF, Punjabi NM, **Shahar E**, Jack CR, Alonso A. Sleep apnea, sleep duration and brain MRI markers of cerebral vascular disease and Alzheimer's disease: The Atherosclerosis Risk in Communities Study (ARIC). *PLoS ONE* 2016 Jul 14;11(7)
201. Lutsey PL, Misialek JR, Mosley TH, Gottesman RF, Punjabi NM, **Shahar E**, MacLehose R, Ogilvie RP, Knopman D, Alonso A. Sleep characteristics and risk of dementia and Alzheimer's disease: The Atherosclerosis Risk in Communities Study. *Alzheimers Dement.* 2017 Jul 21. [Epub ahead of print]
202. Agarwala A, Pokharel Y, Saeed A, Sun W, Virani SS, Nambi V, Ndumele C, **Shahar E**, Heiss G, Boerwinkle E, Konety S, Hoogeveen RC, Ballantyne CM. The association of lipoprotein(a) with incident heart failure hospitalization: Atherosclerosis Risk in Communities study. *Atherosclerosis.* 2017 Jul;262:131-137. Epub 2017 May 12
203. Shahar DJ, **Shahar E**. A Theorem at the Core of Colliding Bias. *Int J Biostat* 2017 Mar 31;13(1)
204. Chang PP, Wruck LM, **Shahar E**, et al. Trends in Hospitalizations and Survival of Acute Decompensated Heart Failure in Four US Communities (2005-2014): The Atherosclerosis Risk in Communities (ARIC) Study Community Surveillance. *Circulation* 2018 Mar 8.

Commentaries on my website (<http://www.u.arizona.edu/~shahar/commentaries.html>):

[Insights on confounders](#) (*added 2017)

[Regression toward the mean: a fresh look at an old story](#) (*added 2017)

[Selection bias without colliders?](#) (*added 2017)

[The consistency rule](#)

[Causal diagrams and matched designs](#)

[On the definition of a confounder](#)

[P-values and confidence intervals? Think again](#)

[A composite outcome: another example of thought bias](#)

[On effect modification and its applications](#)

[The case-control study](#)

[Marginal structural models: much ado about \(almost\) nothing - part 2](#)

[Standardization: teach it correctly \(and leave it behind\)](#)

[Period and cohort "effects": interesting history, weak science](#)

[Spurious associations?](#)

[Colliding bias \(part 1\): misnomers and the missing dashed line](#)

[Colliding bias \(part 2\): missing theorems and missing proofs](#)

[Causal diagrams and diagnostic tests](#)

[Acute infection and ischemic stroke: a tale of unrecognized biases](#)

[Paroxetine, septal defects, and research defects](#)

RESEARCH GRANT SUPPORT (Previous and Current)

1. Title: Atherosclerosis Risk in Communities (ARIC) Study
Funding: NIH/NHLBI, N01 HC55019
Purpose: This is an investigation conducted in four U.S. communities of the etiology and natural history of atherosclerosis and atherosclerotic diseases.
Period: September 1, 1985 - August 31, 1993, \$8,561,567
September 1, 1993 - December 31, 1999, \$7,038,274
Role: Co-Investigator
2. Title: Community Surveillance of Cardiovascular Disease
Funding: NIH/NHLBI, RO1 HL23727
Purpose: Surveillance of cardiovascular disease in the 7-county metro area
Period: July 1, 1989 - June 30, 1994
July 1, 1994 - June 30, 1999 (key author of the application)
Role: Co-Investigator; Director of Morbidity Surveillance
3. Title: Family Heart Study
Funding: NIH/NHLBI, N01 HC25105
Purpose: This study investigates the role of genetic and environmental factors in atherosclerotic disease.
Period: May 15, 1993 - May 14, 1995
Role: Co-Investigator
4. Title: Cardiovascular Consequences of Sleep Apnea
Funding: NIH/NHLBI, U01 HL53934
Purpose: This study investigates the relation of sleep-related breathing disorders to cardiovascular disease.
Period: September 1, 1994 - August 31, 1999

- Role: Principal Investigator
5. Title: Etiologic Cancer Research in a Population-Based Cohort
 Funding: NIH/NCI, RO3 CA65473
 Purpose: An expansion of a the ARIC cohort to etiological investigation of common cancers
 Period: September 20, 1995 - August 31, 1999
 Role: Principal Investigator
6. Title: Minnesota Stroke Survey
 Funding: NIH/NINDS
 Purpose: Surveillance of stroke in the Twin Cities
 Period: Sept 30, 2000 - December 30, 2003
 Role: Co-Investigator (and primary author of the application)
7. Title: The Sleep Heart Health Study (SHHS)
 Funding: NIH/NHLBI, U01 HL53934
 Purpose: This study investigates the relation of sleep-related breathing disorders to cardiovascular disease (competing continuation)
 Period: September 1, 1999 - August 31, 2004
 Role: Principal Investigator
8. Title: Community Surveillance of Congestive Heart Failure
 Funding: NHLBI, R01 HL60959
 Purpose: Surveillance of congestive heart failure in the Twin Cities
 Period: July 1, 1998 - June 30, 2004
 Role: Principal Investigator
9. Title: COPD-Clinical Research Network
 Funding: NIH/NHLBI
 Purpose: Short-term clinical trials in COPD patients
 Period: July 2003 - April 2006

- Role: Co-Investigator, epidemiologist (Coordinating Center)
10. Title: The Sleep Heart Health Study (SHHS)
Funding: NIH/NHLBI, U01 HL53934
Purpose: This study investigates the relation of sleep-related breathing disorders to cardiovascular disease (competing continuation)
Period: September 1, 2004 - August 31, 2009
Role: Principal Investigator
11. Title: Endothelial Dysfunction, Biomarkers, and Lung Function
Funding: NIH/NHLBI
Purpose: This study investigates the role of endothelial dysfunction in COPD
Period: August 1, 2004 - July 31, 2006
Role: Co-Investigator (subcontract to Columbia University)
12. Title: Atherosclerosis Risk in Communities (ARIC) Study
Funding: NIH/NHLBI
Purpose: This is an investigation conducted in four U.S. communities of the etiology and natural history of atherosclerosis and atherosclerotic diseases.
Period: July 1, 2008 - Nov 15, 2016 (annually renewable)
Role: Co-Investigator (subcontract to U of MS)
13. Title: Atherosclerosis Risk in Communities (ARIC) Study
Funding: NIH/NHLBI, N01 HC55019
Purpose: This is an investigation conducted in four U.S. communities of the etiology and natural history of atherosclerosis and atherosclerotic diseases.
Period: January 1, 2000 - Nov 15, 2016
Role: Co-Investigator (annual subcontract to U of MN)

14. Title: Multi-Ethnic Study of Atherosclerosis (MESA)
Funding: NIH/NHLBI, N01 HC95163-01
Purpose: A multi-center study of subclinical CVD
Period: January 15, 1999 - August 14, 2015
Role: Co-Investigator (annual subcontract to U of MN)
15. Title: Atherosclerosis Risk in Communities (ARIC) Study
Funding: NIH/NHLBI, N01 HC55019
Purpose: This is an investigation conducted in four U.S. communities of the etiology and natural history of atherosclerosis and atherosclerotic diseases.
Period: Nov 15, 2016 – Nov 14, 2021
Role: Co-Investigator (subcontract to Univ of North Carolina; ended at retirement)
16. Title: Jackson Heart Study
Funding: NIH/NHLBI
Purpose: An investigation of risk factors for stroke and heart failure
Period: August 1, 2007 - April 28, 2018
Role: Co-Investigator (subcontract to Jackson State University)