

Supplementary online material for submission to the *British Medical Journal* "Moderate alcohol consumption and health benefits: how good is the science? A critique of the Ronksley et al¹ meta-analysis" by Stockwell, Greer, Fillmore, Chikritzhs and Zeisser

All 84 studies used by Ronksley et al¹ are listed below. They are organised so as to identify articles or studies that were excluded for different reasons at different stages of the reanalysis of Ronksley et al¹ as described in the text of the submitted article.

¹Ronksley R, Brien S, Turner B, Mukamal K, Ghali W. (2011) Association of alcohol consumption with selected cardiovascular disease outcomes: a systematic review and meta-analysis. *British Medical Journal*, 342:doi:10.1136/bmj.d671.

Articles excluded because another article provided an analysis of the same study which had a longer follow-up and/or more comprehensive analysis (N=17)

Albert CM, Manson JE, Cook NR, Ajani UA, Gaziano JM, Hennekens CH. (1999). Moderate alcohol consumption and the risk of sudden cardiac death among US male physicians. *Circulation* 100: 944-50.

Bazzano LA, Gu D, Reynolds K, Wu X, Chen CS, Duan X, et al. (2007). Alcohol consumption and risk for stroke among Chinese men. *Ann Neurol* 62:569-78.

Berger K, Ajani UA, Kase CS, Gaziano JM, Buring JE, Glynn RJ, et al. (1999). Light-to-moderate alcohol consumption and risk of stroke among US male physicians. *N Engl J Med* 341:1557-64.

Blackwelder WC, Yano K, Rhoads GG, Kagan A, Gordon T, Palesch Y. (1980). Alcohol and mortality: the Honolulu Heart Study. *Am J Med* 68:164-9.

Boffetta P, Garfinkel L. (1990) Alcohol drinking and mortality among men enrolled in an American Cancer Society prospective study. *Epidemiology* 1:5 342-348.

Camargo CA, Hennekens CH, Gaziano JM, Glynn RJ, Manson JE, Stampfer MJ. (1997). Prospective study of moderate alcohol consumption and mortality in US male physicians. *Arch Intern Med* 157:79-85.

Friedman LA, Kimball AW. (1986). Coronary heart disease mortality and alcohol consumption in Framingham. *Am J Epidemiol* 124:481-9.

Fuchs CS, Stampfer MJ, Colditz GA, Giovannucci EL, Manson JE, Kawachi I, et al. (1995). Alcohol consumption and mortality among women. *N Engl J Med* 332:1245-50.

Garg R, Wagener DK, Madans JH. (1993). Alcohol consumption and risk of ischemic heart disease in women. *Arch Intern Med* 153:1211-6.

Gordon T, Kannel WB. (1983). Drinking habits and cardiovascular disease: the Framingham Study. *Am Heart J* 105:667-73.

Gronbaek M, Deis A, Sorensen TI, Becker U, Schnohr P, Jensen G. (1995). Mortality associated with moderate intakes of wine, beer, or spirits. *BMJ* 310:1165-9.

Hammar N, Romelsjo A, Alfredsson L. (1997). Alcohol consumption, drinking pattern and acutemyocardial infarction. A case referent study based on the Swedish Twin Register. *J InternMed* 241:125-31.

Klatsky AL, Armstrong MA, Friedman GD. (1990). Risk of cardiovascular mortality in alcohol drinkers, ex-drinkers and nondrinkers. *Am J Cardiol* 66:1237-42.

Klatsky A, Armstrong M, Friedman G. (1997). Red wine, white wine, liquor, beer and risk for coronary artery disease hospitalization. *The American Journal of Cardiology* 80:416-420.

Mukamal KJ, Chung H, Jenny NS, Kuller LH, Longstreth WT Jr, Mittleman MA, et al. (2005). Alcohol use and risk of ischemic stroke among older adults: the cardiovascular health study. *Stroke* 36:1830-4.

Pedersen JO, Heitmann BL, Schnohr P, Gronbaek M. (2008). The combined influence of leisure-time physical activity and weekly alcohol intake on fatal ischaemic heart disease and all-cause mortality. *Eur Heart J* 29:204-12.

Solomon CG, Hu FB, Stampfer MJ, Colditz GA, Speizer FE, Rimm EB, et al. (2000). Moderate alcohol consumption and risk of coronary heart disease among women with type 2 diabetes mellitus. *Circulation* 102:494-9.

Studies excluded because they did not adequately control for smoking, age and/or health status (N=4)

NB The criteria for acceptable control of health status was that there was at least one of the following measures was controlled in the analysis or, alternatively, used to exclude respondents from the sample analysed: a standardised measure of general health functioning, three or more health indicators (such as blood pressure, physical activity, cholesterol, diet, body weight, presence of diabetes) or a history of previous coronary heart disease.

Colditz GA, Branch LG, Lipnick RJ, Willett WC, Rosner B, Posner B, et al. (1985). Moderate alcohol and decreased cardiovascular mortality in an elderly cohort. *Am Heart J*: 109:886-9.

Doll R, Peto R, Boreham J, Sutherland I. (2005). Mortality in relation to alcohol consumption: a prospective study among male British doctors. *Int J Epidemiol*, 34:199-204.

Garfinkel L, Boffetta P, Stellman SD. (1988). Alcohol and breast cancer: a cohort study. *Prev Med* 17:686-93.

Kono S, Ikeda M, Tokudome S, Nishizumi M. (1986). Kuratsune, M. Alcohol and mortality: a cohort study of male Japanese physicians. *Int J Epidemiol* 15:527-32.

Studies excluded for assessing alcohol consumption over a period shorter than 30 days (N=4)

Chiuve SE, Rexrode KM, Spiegelman D, Logroscino G, Manson JE, Rimm EB. (2008). Primary prevention of stroke by healthy lifestyle. *Circulation* 118:947-54.

Kittner SJ, Garcia-Palmieri MR, Costas R Jr, Cruz-Vidal M, Abbott RD, Havlik RJ. (1983). Alcohol and coronary heart disease in Puerto Rico. *Am J Epidemiol* 117:538-50.

Wellmann J, Heidrich J, Berger K, Doring A, Heuschmann PU, Keil U. (2004). Changes in alcohol intake and risk of coronary heart disease and all-cause mortality in the MONICA/KORA-Augsburg cohort 1987-97. *Eur J Cardiovasc Prev Rehabil* 11:48-55.

Wilkins K. (2002). Moderate alcohol consumption and heart disease. *Health Rep* 1: 9-24.

Studies excluded for failing to adequately assess both quantity and frequency of alcohol consumption (N=10)

Berberian KM, van Duijn CM, Hoes AW, Valkenburg HA, Hofman A. (1994). Alcohol and mortality. Results from the EPOZ (Epidemiologic Study of Cardiovascular Risk Indicators) follow-up study. *Eur J Epidemiol* 10:587-93.

Burke V, Lee AH, Hunter E, Spargo R, Smith, R, Beilin LJ, et al. (2007). Alcohol intake and incidence of coronary disease in Australian aborigines. *Alcohol* 42:119-24.

Cullen KJ, Knuiiman MW, Ward NJ. (1993). Alcohol and mortality in Busselton, Western Australia. *Am J Epidemiol* 137:242-8.

Ebbert JO, Janney CA, Sellers TA, Folsom AR, Cerhan JR. (2005). The association of alcohol consumption with coronary heart disease mortality and cancer incidence varies by smoking history. *J Gen Intern Med* 20:14-20.

Gaziano JM, Gaziano TA, Glynn RJ, Sesso HD, Ajani UA, Stampfer MJ, et al. (2000). Light-to-moderate alcohol consumption and mortality in the Physicians' Health Study enrollment cohort. *J Am Coll Cardiol* 35:96-105.

Jakovljevic B, Stojanov V, Paunovic K, Belojevic G, Milic N. (2004). Alcohol consumption and mortality in Serbia: twenty-year follow-up study. *Croat Med J* 45:764-8.

Thun MJ, Peto R, Lopez AD, Monaco JH, Henley SJ, Heath CW Jr, et al. (1997). Alcohol consumption and mortality among middle-aged and elderly US adults. *N Engl J Med* 337:1705-14.

Trevisan M, Schisterman E, Mennotti A, Farchi G, Conti S. (2001). Drinking pattern and mortality: the Italian Risk Factor and Life Expectancy pooling project. *Ann Epidemiol* 11:312-9.

Truelsen T, Gronbaek M, Schnohr P, Boysen G. (1998). Intake of beer, wine, and spirits and risk of stroke: the Copenhagen city heart study. *Stroke* 29:2467-72.

Woo J, Lau EM. (1990). Risk factors predisposing to stroke in an elderly Chinese population—a longitudinal study. *Neuroepidemiology* 9:131-4.

Studies excluded for failing to separate former drinkers from the abstainer reference group (N=32)

Bazzano LA, Gu D, Reynolds K, Chen J, Wu X, Chen CS, et al. (2009). Alcohol consumption and risk of coronary heart disease among Chinese men. *Int J Cardiol* 135:78-85.

Deev A, Shestov D, Abernathy J, Kapustina A, Muhina N, Irving S. (1998). Association of alcohol consumption to morality in middle-aged US and Russian men and women. *Ann Epidemiol* 8:147-53.

Diem P, Deplazes M, Fajfr R, Bearth A, Muller B, Christ ER, et al. (2003). Effects of alcohol consumption on mortality in patients with type 2 diabetes mellitus. *Diabetologia* 46:1581-5.

Donahue RP, Abbott RD, Reed DM, Yano K. (1986). Alcohol and hemorrhagic stroke. The Honolulu Heart Program. *JAMA* 255:2311-4.

Djousse L, Lee I, Buring J, Gaziano J. (2009). Alcohol consumption and risk of cardiovascular disease and death in women: potential mediating mechanisms. *Stroke* 40:237-44.

Elkind MS, Sciacca R, Boden-Albala B, Rundek T, Paik MC, Sacco RL. (2006). Moderate alcohol consumption reduces risk of ischemic stroke: the Northern Manhattan Study. *Stroke* 37:13-9.

Gordon T, Doyle JT. (1985). Drinking and coronary heart disease: the Albany Study. *Am Heart J* 110:331-4.

Gun RT, Pratt N, Ryan P, Gordon I, Roder D. (2006). Tobacco and alcohol related mortality in men: estimates from the Australian cohort of petroleum industry workers. *Aust N Z J Public Health* 30:318-24.

Hart CL, Smith GD. (2008). Alcohol consumption and mortality and hospital admissions in men from the Midspan Collaborative cohort study. *Addiction* 103:1979-86.

Hein HO, Suadicani P, Gyntelberg F. (1996). Alcohol consumption, serum low density lipoprotein cholesterol concentration, and risk of ischaemic heart disease: six year follow up in the Copenhagen male study. *BMJ* 312:736-41.

Jamrozik K, Broadhurst RJ, Forbes S, Hankey GJ, Anderson CS. (2000). Predictors of death and vascular events in the elderly: the Perth Community Stroke Study. *Stroke* 31:863-8.

Jousilahti P, Rastenyte D, Tuomilehto J. (2000). Serum gamma-glutamyl transferase, self-reported alcohol drinking, and the risk of stroke. *Stroke* 31:1851-5.

Kivela SL, Nissinen A, Ketola A, Punsar S, Puska P, Karvonen M. (1989). Alcohol consumption and mortality in aging or aged Finnish men. *J Clin Epidemiol* 42:61-8.

Kiyohara Y, Kato I, Iwamoto H, Nakayama K, Fujishima M. (1995). The impact of alcohol and hypertension on stroke incidence in a general Japanese population. The Hisayama Study. *Stroke* 26:368-72.

Knoops KT, de Groot LC, Kromhout D, Perrin AE, Moreiras-Varela O, Menotti A, et al. (2004). Mediterranean diet, lifestyle factors, and 10-year mortality in elderly European men and women: the HALE project. *JAMA* 292:1433-9.

Leppala JM, Paunio M, Virtamo J, Fogelholm R, Albanes D, Taylor PR, et al. (1999). Alcohol consumption and stroke incidence in male smokers. *Circulation* 100:1209-14.

Manttari M, Tenkanen L, Alikoski T, Manninen V. (1997). Alcohol and coronary heart disease: the roles of HDL-cholesterol and smoking. *J Intern Med* 241:157-63.

Marques-Vidal P, Montaye M, Arveiler D, Evans A, Bingham A, Ruidavets JB, et al. (2004). Alcohol consumption and cardiovascular disease: differential effects in France and Northern Ireland. The PRIME study. *Eur J Cardiovasc Prev Rehabil* 11:336-43.

Maskarinec G, Meng L, Kolonel LN. (1998). Alcohol intake, body weight, and mortality in a multiethnic prospective cohort. *Epidemiology* 9:654-61.

Mukamal KJ, Chung H, Jenny NS, Kuller LH, Longstreth WT Jr, Mittleman MA, et al. (2006). Alcohol consumption and risk of coronary heart disease in older adults: the CardiovascularHealth Study. *J Am Geriatr Soc* 54:30-7.

Murray RP, Connett JE, Makela P, Rehm J. (2005). Difficulty in demonstrating a risk from drinking pattern in fourteen years of coronary heart disease morbidity and mortality: the Lung Health Study. *Addict Behav* 30:875-87.

Renaud SC, Gueguen R, Siest G, Salamon R. (1999). Wine, beer, and mortality in middle-aged men from eastern France. *Arch Intern Med* 159:1865-70.

Scherr PA, LaCroix AZ, Wallace RB, Berkman L, Curb JD, Cornoni-Huntley J, et al. (1992). Light to moderate alcohol consumption and mortality in the elderly. *J Am Geriatr Soc* 40:651-7.

Salonen JT, Puska P, Nissinen A. (1983). Intake of spirits and beer and risk of myocardial infarction and death—a longitudinal study in Eastern Finland. *J Chronic Dis* 36:533-43.

Shaper AG, Phillips AN, Pocock SJ. (1987). Walker, M. Alcohol and ischaemic heart disease in middle aged British men. *BMJ* 294:733-7.

Simons LA, McCallum J, Friedlander Y, Simons J. (1996). Alcohol intake and survival in the elderly: a 77month follow-up in the Dubbo study. *Aust N Z J Med* 26:662-70.

Suh I, Shaten BJ, Cutler JA, Kuller LH. (1992). Alcohol use and mortality from coronary heart disease: the role of high-density lipoprotein cholesterol. The Multiple Risk Factor Intervention Trial Research Group. *Ann Intern Med* 116:881-7.

Suhonen O, Aromaa A, Reunanen A, Knekt P. (1987). Alcohol consumption and sudden coronary death in middle-aged Finnish men. *Acta Med Scand* 221:335-41.

Tolstrup J, Jensen MK, Tjonneland A, Overvad K, Mukamal KJ, Gronbaek M. (2006). Prospective study of alcohol drinking patterns and coronary heart disease in women and men. *BMJ* 332:1244-8.

Waskiewicz A, Sygnowska E, Drygas W. (2004). Relationship between alcohol consumption and cardiovascular mortality—the Warsaw Pol- MONICA Project. *Kardiol Pol* 60:552-62.

Yang T, Doherty TM, Wong ND, Detrano RC. (1999). Alcohol consumption, coronary calcium, and coronary heart disease events. *Am J Cardiol* 84:802-6.

Zhang LF, Zhao LC, Zhou BF, Yang J, Li Y, Wu YF. (2004). Alcohol consumption and incidence of ischemic stroke in male Chinese. *Zhonghua Liu Xing Bing Xue Za Zhi* 25:954-7.

Studies excluded for still including occasional/rare drinkers or former moderate drinkers with abstainers (N = 7)

Iso H, Kitamura A, Shimamoto T, Sankai T, Naito Y, Sato S, et al. (1995). Alcohol intake and the risk of cardiovascular disease in middle-aged Japanese men. *Stroke* 26:767-73.

Kitamura A, Iso H, Sankai T, Naito Y, Sato S, Kiyama M, et al. Alcohol intake and premature coronary heart disease in urban Japanese men. *Am J Epidemiol* 147:59-65.

Mukamal KJ, Conigrave KM, Mittleman MA, Camargo CA Jr, Stampfer MJ, Willett WC, et al. (2003). Roles of drinking pattern and type of alcohol consumed in coronary heart disease in men. *N Engl J Med* 348:109-18.

Lin Y, Kikuchi S, Tamakoshi A, Wakai K, Kawamura T, Iso H, et al. (2005). Alcohol consumption and mortality among middle-aged and elderly Japanese men and women. *Ann Epidemiol* 15:590-7.

Sankai T, Iso H, Shimamoto T, Kitamura A, Naito Y, Sato S, et al. (2000). Prospective study on alcohol intake and risk of subarachnoid hemorrhage among Japanese men and women. *Alcohol Clin Exp Res* 24:386-9.

Xu WH, Zhang XL, Gao YT, Xiang YB, Gao LF, Zheng W, et al. (2007). Joint effect of cigarette smoking and alcohol consumption on mortality. *Prev Med* 45:313-9.

Yuan JM, Ross RK, Gao YT, Henderson BE, Yu MC. (1997). Follow up study of moderate alcohol intake and mortality among middle aged men in Shanghai, China. *BMJ* 314:18-23.

Studies excluded for combining occasional drinkers with light or moderate drinkers (N = 8)

Djousse L, Ellison RC, Beiser A, Scaramucci A, D'Agostino RB, Wolf PA. (2002). Alcohol consumption and risk of ischemic stroke: the Framingham Study. *Stroke* 33:907-12.

Ebrahim S, Lawlor DA, Shlomo YB, Timpson N, Harbord R, Christensen M, et al. (2008). Alcohol dehydrogenase type 1C (ADH1C) variants, alcohol consumption traits, HDL-cholesterol and risk of coronary heart disease in women and men: British Women's Heart and Health Study and Caerphilly cohorts. *Atherosclerosis* 196:871-8.

Fuchs FD, Chambless LE, Folsom AR, Eigenbrodt ML, Duncan BB, Gilbert A, et al. (2004). Association between alcoholic beverage consumption and incidence of coronary heart disease in whites and blacks: the Atherosclerosis Risk in Communities Study. *Am J Epidemiol* 160:466-74.

Hansagi H, Romelsjo A, Gerhardsson de Verdier M, Andreasson S, Leifman A. (1995). Alcohol consumption and stroke mortality. 20-year follow up of 15,077 men and women. *Stroke* 26:1768-73.

Ikehara S, Iso H, Yamagishi K, Yamamoto S, Inoue M, Tsugane S, et al. (2009). Alcohol consumption, social support, and risk of stroke and coronary heart disease among Japanese men: the JPHC Study. *Alcohol Clin Exp Res* 33:1025-32.

Klatsky AL, Armstrong MA, Friedman GD, Sidney S. (2002). Alcohol drinking and risk of hemorrhagic stroke. *Neuroepidemiology* 21:115-22.

Rehm JT, Bondy SJ, Sempos CT, Vuong CV. (1997). Alcohol consumption and coronary heart disease morbidity and mortality. *Am J Epidemiol* 146:495-501.

Valmadrid CT, Klein R, Moss SE, Klein BE, Cruickshanks KJ. (1999). Alcohol intake and the risk of coronary heart disease mortality in persons with older-onset diabetes mellitus. *JAMA* 282:239-46.

Remaining studies (N=2)

Murray RP, Connett JE, Tyas SL, Bond R, Ekuma O, Silversides CK, et al. (2002). Alcohol volume, drinking pattern, and cardiovascular disease morbidity and mortality: is there a U-shaped function? *Am J Epidemiol* 155:242-8.

Harriss LR, English DR, Hopper JL, Powles J, Simpson JA, O'Dea K, et al. (2007). Alcohol consumption and cardiovascular mortality accounting for possible misclassification of intake: 11-year follow-up of the Melbourne Collaborative Cohort Study. *Addiction* 102:1574-85.