

Evidence Table 2. Health risk appraisal instruments used in the extracted studies

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Alexander ¹¹² 2010	Web-based MENU program	Developed by authors	NI	
	Fruit and Veg – 16 item food freq questionnaire by NCI	Thompson FE, Subar AF, Smith AF, et al. Fruit and vegetable assessment: performance of 2 new short instruments and a food frequency questionnaire. J Am Diet Assoc. 2002;102(12):1764–1772.	The validity of this scale is reported in Thompson et al (2002). The 16-item measure tends to overestimate true values	
	Fruit and Veg - a 2-item measure that included 1 question each asking about total servings of fruits and of vegetables consumed on a typical day.	Peterson KE, Hebert JR, Hurley TG, et al. Accuracy and precision of two short screeners to assess change in fruit and vegetable consumption among diverse populations participating in health promotion intervention trials. J Nutr. 2008;138(1):218S–225S.	The validity of this scale is reported in Thompson et al (2002). The 2-item measure slightly underestimates true values. Guidelines for estimating 1 serving size were included in the 2-item questions (e.g., 1 piece of fruit, 3/4 cup of 100% juice, 1/2 cup canned fruit, or 1/4 cup dried fruit) to improve validity)	
	Physical / BP measures	Annual Preventive Medical Examinations Program	NI	
	Cardiovascular Risk Reduction Program	Initiated by NASA in 1987 as a workplace intervention program but not as a tested scientifically sound program	NI	
Aronow ¹⁰⁵ 2005	HRA intervention for adults ageing with intellectual and developmental disabilities	Developed by authors	NI	

Abbreviations: BP = blood pressure; CDC = Centres for Disease Control and Prevention; CVD = cardiovascular disease; HRA = health risk appraisal; IPAQ = International Physical Activity Questionnaire; IPAQ-A = International Physical Activity Questionnaire-Adolescents; NCI = National Cancer Institute; NCQA = National Committee for Quality Assurance; NI = no information; NR = not reported; PA = physical activity; Q = questionnaire; STC-diet = Starting the Conversation Diet; U.S. = United States; veg = vegetable; WHO-HPQ = World Health Organization Health and Work Performance Questionnaire
√ = NCQA certified

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Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Baer ¹⁰⁶ 2001	Daily Drinking Questionnaire	Collins RL, Parks GA, Marlatt,GA. Social determinants of alcohol consumption: the effects of social interaction and model status on the self-administration of alcohol. <i>J Consult Clin Psychol</i> 1985;53:189-200.	NI	
	Rutgers Alcohol Problem Inventory	White HR, Labouvie EW. 1989. Towards the assessment of adolescent problem drinking. <i>J Stud Alcohol</i> 1989;50:30-37.	NI	
	Alcohol Dependency Scale	Skinner HA, Horn JL. 1984. Alcohol Dependency Scale (ADS). Toronto, Ontario: Addiction Research Foundation.	NI	
	Diagnostic Interview Schedule	Helzer JE, Robbins LN. The Diagnostic Interview Schedule: its development, evolution, and use. <i>Soc Psychiatr Epidemiol</i> 1988;23:6-16.	NI	
	Brief Drinker Profile	Miller WR, Marlatt GA. 1984. Brief Drinker Profile. Odessa, Fla: Psychological Assessment Resources	NI	
Bergstrom ⁴² 2008	EQ-5D component of the Swedish version of the EuroQol	Bjork S, Norinder A. 1999. The Weighting Exercise for the Swedish Version of the EuroQol. <i>Health Econ</i> 1999;8:117-126.	NI	
	Time Trade Off (TTO)	Wittrup-Jensen KU, Lauridsen JT, Gudex C, et al. Estimating Danish Eq-5d tariffs using the Time Trade-Off and Visual Analogue Scale methods, in: <i>Proceedings of the 18th Plenary Meeting of the Euroqol Group</i> . Norinder AM, Pedersen KM, Roos P, eds. IHE, the Swedish Institute for Health Economics, Lund, 2002:p.257-292.	NI	
	The Lifestyle Profile	Setterlind S, Larsson G. The Stress Profile: A psychosocial approach to measuring stress. <i>Stress Medicine</i> 1995;11:85-92.	NI	

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Bertera ¹⁵ 1993	38-item health risk survey (part of workplace health promotion project)	Developed in-house by workplace	NI	
Blair ²⁸ 1986	"Lifestyles Questionnaire"	NI	NI	
Blair ⁴⁵ 1986	Evaluations included physical exam, medical history, psychosocial questionnaire (General Well-being Schedule), job satisfaction and self-concept scales, a health habits questionnaire, a health risk appraisal questionnaire, clinical measurements and a fitness assessment.	References provided for: General Well-being Schedule: Fazio AF. A Concurrent Validation Study of the NCHS General Well-being Schedule. (Vital und Health Statistics, Ser. 2, No. 73). DHEW Pub. No. (HRA) 78-1347. National Center for Health Statistics. Hyattsville. Md.. 1977. Job satisfaction scale: Brayfield AH, and Rothe HF An index of job satisfaction. J Appl Psycho 1951;35:307-31 I. Self-concept scales: Bill RE, Vance EL, and McLean OS. An index of adjustment and values. J Consult Psychol 1951;15:287-291.	NI	
Blalock ¹⁰² 2002	Calcium: Block NCI Healthy Habits and History Questionnaire (HHHQ)	Block G, Hartman AM, Dresser CM, et al. A data-based approach to diet questionnaire design and testing. AM J Epidemiol. 1986;124:453-469.	Used extensively in epidemiology and "has been shown to have excellent psychometric properties." Cummings SR, Block, G, McHenry K, et al. Evaluation of two food frequency methods of measuring dietary calcium intake. Am J Epidemiol. 1987;126:796-802.	

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Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Boudreau ⁵⁴ 1995	Attitudes and intentions questionnaire (no reference); CVD risk factors questionnaire (with responses giving risk factor score using chart by Bjurstrom et al)	Bjurstrom LA, Alexious NG. A program of heart disease intervention for public employees. J Occup Med. 1978;20:521-531.	NI	
Braeckman ⁷⁰ 1999	Health questionnaire 24-hour food record Nutrition knowledge questionnaire Health measurements	No references. Nutrition knowledge questionnaire developed by authors, no other acknowledgements	NI	
Breslow 1990 ⁴⁰	The Health Profile	Not described or referenced	NI	
Brug ⁵⁶ 1996	2 part self-administered questionnaire (121 items). First part- Validated food freq questionnaire; 2nd part to screen psychosocial measures developed by authors	Brug J, Lechner L, De Vries H. Psychosocial determinants of fruit and vegetable consumption. Appetite. 1995;25:285–296.	Van Assema P, Brug J, Kok G, et al. The reliability and validity of a Dutch questionnaire on fat consumption as a means to rank subjects according to individual fat intake. Eur J Cancer Prev 1992;1:375–80.	
Campbell ⁵⁵ 2002	Self-administered 92 question survey	Developed by authors	NI	

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Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Campbell ⁸⁴ 1994	Health Habits and History Questionnaire	Block G, Hartman AM, Dresser CM, et al. A data-based approach to diet questionnaire design and testing. Am J Epidemiol. 1986;124:453-469.	Cummings SR, Block, G, McHenry K, et al. Evaluation of two food frequency methods of measuring dietary calcium intake. Am J Epidemiol. 1987;126:796-802.	
Chan ²¹ 1988	Health Risk Appraisal	Centers for Disease Control. Anonymous, Health risk appraisal-United States. MMWR 1981;30:133-5.	NI	
Cockcroft ⁶⁹ 1994	Risk behavior questionnaire General Health questionnaire (GHQ)	Risk behavior questionnaire - developed by authors GHQ: Goldberg D. The general health questionnaire. London: NFER-Nelson, 1981.	Goldberg DP et al. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. Psychol Med 1997;27:191-7.	
Connell ⁵⁷ 1995	Health Behavior Assessment (HBA) form HRA Booklet	No reference on HBA; HRA Booklet based on CDC HRA Centers for Disease Control (CDC). Anonymous, Health risk appraisal-United States. MMWR 1981; 30:133-5.	NI	
Crouch ⁶⁸ 1986	NR	NR	NI	

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Dally ¹¹⁰ 2002	HRA Questionnaire	Vendor: HEALTHTRAC (noted in article that this vendor bases their tool on CDC HRA)	'The validity of this HRA in calculating scores was recently discussed in a study on this vendor's HRA' (see Ozminkowski RJ, Dunn RL, Goetzel RZ, et al. A return on investment evaluation of the Citibank, N.A., health management program. Am J Health Promot. 1999;14(1):31-43) This tool has also received the C. Everett Koop Award in 1996. Information regarding their findings and assessment is found at: http://www.sph.emory.edu/healthproject/koop/healthtrac/evaluation.html	
De Bourdeaudhuij ⁶⁶ 2007	Electronic questionnaire-four-item food frequency to measure fat intake; questions concerning psychosocial determinants of fat intake	Developed by authors	Vandelanotte C, Matthys C, De Bourdeaudhuij I. Reliability and validity of a computerised questionnaire to measure fat intake in Belgium. Nutrition Research. 2004;24:621-631.	

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Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
De Bourdeaudhuij ¹⁰⁸ 2010	Diagnostic tool includes demographic questions; PA questions (IPAQ-A) and psychosocial determinants	<p>Developed by authors</p> <p>De Bourdeaudhuij I, Sallis J. Relative contribution of psychological variables to the explanation of physical activity in three population based adult samples. <i>Prev Med</i> 2002;34(2):279-88.</p> <p>De Bourdeaudhuij I, Lefevre J, Deforche B, et al. Physical activity and psychosocial correlates in normal weight and overweight 11 to 19 year olds. <i>Obesity</i> 2005;13(6):1097-105.</p>	Hagströmer M, Bergman P, De Bourdeaudhuij I, et al. Concurrent validity of a modified version of the International Physical Activity Questionnaire (IPAQ-A) in European adolescents: The HELENA Study. <i>Int J Obes</i> 2008;32(Suppl 5):S42–8.	
Edelman ¹⁰⁷ 2006	Personalized Health Planning Intervention	Developed by authors at the Centre for Integrative Medicine at Duke University Medical Center.	NI	
	Framingham Risk Score (FRS)	FRS version discussed in: Wilson PW, D'Agostino RB, Levy D, et al. Prediction of coronary heart disease using risk factor categories. <i>Circulation</i> 1998;97:1837-47.	NI	
Elliot ⁵⁸ 2007	Questionnaire: demographics, knowledge, behaviors, beliefs re: nutrition; exercise; body weight; overall health	Developed by authors	Reliability reported by authors	

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Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Elliot ⁵⁸ 2007 (cont'd)	Questionnaire: Dietary Habits	Thompson FE, Subar AF, Smith AF, et al. Fruit and vegetable assessment: performance of 2 new short instruments and a food frequency questionnaire. J Am Diet Assoc. 2002;102:1764–1772. Thompson FE, Kipnis V, Subar AF, et al. Performance of a short instrument to estimate usual dietary intake of percent calories from fat. Euro J Clin Nutr. 1998;52(Suppl 2):S63.	Thompson FE, Subar AF, Smith AF, et al. Fruit and vegetable assessment: performance of 2 new short instruments and a food frequency questionnaire. J Am Diet Assoc. 2002;102:1764–1772. Thompson FE, Kipnis V, Subar AF, et al. Performance of a short instrument to estimate usual dietary intake of percent calories from fat. Euro J Clin Nutr. 1998;52(Suppl 2):S63.	
Elliot ⁵⁹ 2004	Laboratory (blood, HDL/LDL) Dietary habits Physiological measures	Dietary habits questions: Thompson FE, Subar AF, Brown CC, et al. Cognitive research enhances accuracy of food frequency questionnaire reports: results of an experimental validation study. J Am Diet Assoc. 2002;102(2):212-225. Kristal AR, Shattuck AL, Henry HJ. Patterns of dietary behavior associated with selecting diets low in fat: reliability and validity of a behavioral approach to dietary assessment. J Am Diet Assoc. 1990 Feb;90(2):214-20.	Dietary habits questions: see references in column 3	
Erfurt ¹⁸ 1991	Blood pressure, weight, smoking history	NR	NI	
Faghri ¹⁶ 2008	Wellsorce Personal Health Profile Questionnaire (PHP)	Wellsorce, Inc.	Personal Wellness Profile is NCQA certified, and was certified by the University of Florida. More information about validity is available at: www.wellsorce.com/scientific-validity.html	√

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Ferrer ⁸⁶ 2009	Standardized Behavioral Risk Assessment (mix of Tobacco use items from Society for Research on Nicotine and Tobacco)	Glasgow RE, Ory MG, Klesges LM, et al. Practical and relevant self-report measures of patient health behaviors for primary care research. <i>Ann Fam Med</i> . 2005;3(1):73-81.	NI	
	Alcohol use from Behavioral Risk Factor Surveillance System Questionnaire	U.S. Department of Health and Human Services. 2004. Behavioral Risk Factor Surveillance System. http://www.cdc.gov/brfss/questionnaires/pdf-ques/2004brfss.pdf .	NI	
	The IPAQ	Craig CL, Marshall AL, Sjöström M, et al. International physical activity questionnaire: 12-country reliability and validity. <i>Med Sci Sports Exerc</i> . 2003;35(8):1381-1395.	NI	
	The STC-Diet instrument	Ammerman AS, Haines PS, DeVellis RF, et al. A brief dietary assessment to guide cholesterol reduction in low-income individuals: design and validation. <i>J Am Diet Assoc</i> . 1991;91(11):1385-1390.	NI	
	CDC Healthy Days measure of physical and emotional health	U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention, Division of Adult and Community Health. <i>Measuring Healthy Days: Population Assessment of Health-Related Quality of Life</i> . Atlanta, GA: U.S. Department of Health and Human Services; 2000.	NI	

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Fielding ⁷⁹ 1995	IMPACT Program – Serum Cholesterol Screening (with underlying Johnson & Johnson LIVE FOR LIFE program)	NI	NI	
Fjeldsoe ¹⁰³ 2010	Baseline survey AWAS (Australian Women's Activity Survey)	3 Variables extracted from AWAS survey	Fjeldsoe B, Marshall A, Miller Y. Measurement properties of the Australian Women's Activity Survey. <i>Med Sci Sports Exerc.</i> 2009;41(5):1020–1033.	
Fouad ⁴³ 1997	NR	NI	NI	
Gagnon ¹⁰⁴ 2010	NR	Developed by authors based on elaboration likelihood model of persuasion; social cognitive theory; theory of implementation of intention Only theorists are sourced and the initial measurement is based on several questions (again without source) asked of participants	NI	
Gemson ⁷¹ 1995	Computerized Health Risk Appraisal (HRA)	Robbins L, Hall J. 1970. How to practice prospective medicine. Indianapolis Methodist Hospital of Indiana. Spielberger CD 1995. State-Trait Personality Inventory. Palo Alto, CA: Mind Garden.	NI	
Godin ⁹⁶ 1987	Canadian Home Fitness Test (CHFT) Health Hazard Appraisal (HHA)	Shephard RJ, Bailey DA, Mirwald RL. Development of the Canadian Home Fitness Test. <i>CMAJ.</i> 1976;114:675-679. Robbins LC, Hall JH. 1970. How to Practice Prospective Medicine. Methodist Hospital of Indiana, Indianapolis.	Shephard RJ, Cumming GR. Evaluation of the Canada Home Fitness Test. <i>CMAJ.</i> 1977;117:1136.	

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Goetzel ¹⁹ 2002	<i>Insight</i> ® Health Risk Appraisal Survey (Johnson & Johnson HWP) at time of writing. Intervention program Pathways to Change®	NI	NI	√
Goetzel ⁵¹ 1994	Voluntary Health Assessment – VHA (IBM)	NI	NI	
Gold ⁴⁶ 2000	StayWell HealthPath HRA	The StayWell Company - The Northeast Utilities Company developed a health promotion project called WellAware, the first step of which is the StayWell HealthPath. The C. Everett Koop site talks about StayWell's validity: www.thehelathproject.com/koop/NortheastUtilities/evaluation.html	The predictive validity of this tool has been established based on projecting heart disease mortality in the Framingham study population and associating risk measurements to health care costs and utilization	
Gomel ^{8,12} 1997, 1993	Risk factors for CVD assessed (specific tool not identified)	Developed by authors	NI	

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Haerens ¹⁰⁹ 2009	International Physical Activity Questionnaire adapted for adolescents (IPAQ-A)	<p>Hagströmer M, Bergman P, De Bourdeaudhuij I, et al. Concurrent validity of a modified version of the International Physical Activity Questionnaire (IPAQ-A) in European adolescents: The HELENA Study. <i>Int J Obes</i> 2008;32(Suppl 5):S42–8.</p> <p>De Bourdeaudhuij I, Sallis J. Relative contribution of psychological variables to the explanation of physical activity in three population based adult samples. <i>Prev Med</i> 2002;34(2):279–88.</p> <p>De Bourdeaudhuij I, Lefevre J, Deforche B, et al. Physical activity and psychosocial correlates in normal weight and overweight 11 to 19 year olds. <i>Obesity</i> 2005;13(6):1097-105.</p>	Johnson-Koslow M, Salis JF, Gilpin EA, et al. Comparative validation of the IPAQ and the 7-Day PAR among women diagnosed with breast cancer. <i>Int J Behav Nutr Phys Act</i> 2006;3:7-17.	
Hanlon ⁷² 1995	Dundee risk score	Tunstall-Pedoe, H. The Dundee coronary risk-disk for management of change in risk factors. <i>BMJ</i> 1991;303:744-747.	NI	
Hedberg ⁴¹ 1998	Health Profile Assessment: Questionnaire 1 Questionnaire 2 Questionnaire 3	<p>Q1 and Q2: Andersson G. The importance of exercise for sick leave and perceived health. Linköping: Linköping University, Medical Dissertations, 1987:245.</p> <p>Q3: Malmgren S. A health information campaign and health profile assessment as revelatory communication. Linköping:Linköping University,Medical Dissertations, 1987:246.</p>	NI	
Heirich ⁷³ 1993	Measured blood pressure, height, weight, frequency of exercise and took a brief history	NR	NI	
Herman ⁴⁴ 2006	Shorter version of the University of Michigan online health risk appraisal	Edington DW, Yen LT, Braunstein A. The reliability and validity of HRAs. <i>SPM Handbook of Health Assessment Tools</i> . 1999;135-141.	NI	

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Holt ⁴⁷ 1995	General Health Inc. (GHI) HRA	General Health, Inc., 1046 Potomac St., N.W., Washington, D.C. 20007	NI	
Karlehagen ³⁰ 2003	The Health Profile Test	NR (just stated that it is 'widely used in Sweden')	NI	
Kemper ⁴⁸ 2002	Physical Activity Questionnaire	Adapted from Dishman RK, Sallis, JF. (1994) Determinants and interventions for physical activity and exercise. In: Bouchard C, Shephard RJ, Stephens T. editors. Physical activity, fitness and health: international proceedings and consensus statement. Champaign, ILL: Human Kinetics, pp.214-238.	NI	
	Structured Interview	Based on Physical Activity Questionnaire developed by Verschuur R. (1987) Daily physical activity and health. Longitudinal changes during the teenage period. Thesis. Universiteit van Amsterdam. Haarlem: De Vrieseborch	NI	
Kim ⁹⁸ 2010	Baseline questionnaire (nutrition, physical activity, demographics, etc.)	Developed by authors	NI	
Korolewski ²⁹ 1984	Lifestyle Assessment Questionnaire (LAQ)	NR	Reliability: pearson's r=-0.926 'LAQ validity was established through review and testings by professionals in areas of exercise, nutrition and stress management and by members of the public' (Korolewski 1984:373)	
Kreuter ⁸⁸ 1996	Healthier People	Carter Center of Emory University Health Risk Appraisal Program; (evolved from CDC HRA)	NI	

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Kroeze ⁹⁹ 2008	Screening Questionnaire (including questions from FFQ - Food Frequency Questionnaire)	Developed by authors but no source provided for FFQ	NI	
Lalonde ¹¹⁴ 2006	Short medical report to provide risk-profile information. Authors derived concordance with patients' answers and estimates derived from the Cardiovascular Life Expectancy Mode (CLEM)I; and Decisional Conflict Scale to measure level of uncertainty	<p>CLEM: Lalonde L, O'Connor AM, Drake E, et al. Development and pre-testing of a patient decision aid to assist pharmaceutical care in the prevention of cardiovascular disease. <i>Pharmacotherapy</i> 2004; 24:909-22.</p> <p>Fodor, JG, Frohlich JJ, Genest JJ Jr, et al. Recommendations for the management and treatment of dyslipidemia. Report of the working Group on Hypercholesterolemia and Other Dyslipidemias. <i>CMAJ</i> 2000; 162:1441-1447.</p> <p>O'Connor AM. Decisional conflict scale. 1999. http://decision-aid.ohri.ca/eval.html</p>	O'Connor AM. Validation of a decisional conflict scale. <i>Medical Decision Making</i> 1995;15:25-30.	
Lawler ¹²² 2010	Active Australia Survey	Developed by authors using questions from Active Australia and Australian National Nutrition Surveys Australian Institute of Health and Welfare. The active Australia survey: A guide and manual for implementation, analysis and reporting. Canberra: AIHW; 2003.	<p>Timperio A, Salmon J, Crawford D. Validity and reliability of a physical activity recall instrument among overweight and nonoverweight men and women. <i>J Sci Med Sport</i>. 2003;6:477-491.</p> <p>Brown WJ, Trost SG, Bauman A, et al. Test-retest reliability of four physical activity measures used in population surveys. <i>J Sci Med Sport</i>. 2004;7:205-215.</p>	

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Lawler ¹²² 2010 (cont'd)	Australian National Nutrition Survey	Rutishauser IHE, Webb K, Abraham B, et al. Evaluation of short dietary questions from the 1995 National Nutrition Survey. Canberra: Australian Food and Nutrition Monitoring Unit; 2001.	Rutishauser IHE, Webb K, Abraham B, et al. Evaluation of short dietary questions from the 1995 National Nutrition Survey. Canberra: Australian Food and Nutrition Monitoring Unit; 2001.	
Lauritzen ⁸⁹ 2008	Comprehensive Medical Health Test	Physicians educated to delivered test but no reference for test	NI	
Lingfors ⁴⁹ 2009	Health Curve	Lingfors H, Lindstrom K, Persson LG, et al. Evaluation of "Live for Life", a health promotion programme in the County of Skaraborg, Sweden. J Epidemiol Comm Health 2001;55:277-282. Persson LG, Lindstrom K, Lingfors H, et al. Cardiovascular risk during early adult life. Risk markers among participants in "Live for Life" health promotion programme in Sweden. J Epidemiol Comm Health 1998;52:425-432.	NI	
Lowensteyn ⁹³ 1998	CHD Prevention Model	Grover SA, Abrahamowicz M, Joseph L, et al. The benefits of treating hyperlipidemia to prevent coronary heart disease: estimating changes in life expectancy and morbidity. JAMA 1992;267:816-822.	Vandelanotte C, Matthys C, De Bourdeaudhuij I. Reliability and validity of a computerised questionnaire to measure fat intake in Belgium. Nutr Res 2004;24(8):621-631.	
Maron ⁶⁰ 2008	HRA (commercial, 39 question)	Wellsource Inc (Clackamas, OR, United States)	NI	
	Medical/baseline history	Medical Outcomes Trust Inc, Waltham Mass	NI	

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Maruyama ⁷⁴ 2010	LiSM10!® Lifestyle Modification Intervention	<p>Center of Health Promotion, International Life Sciences Institute Japan – ILSI Japan CHP Arao T. Effect of lifestyle modification program on physical activity and nutrition behavior and risk factors for chronic diseases in high risk middle-aged male workers – follow up study at one year after the end of the intervention. ILSI Japan 2005;81:50–53. (Japanese)</p> <p>Arao T. Effect of lifestyle modification program on physical activity, nutrition behavior and chronic disease risk factors in high risk middle-aged male workers. Proceedings of the 4th International Conference on Nutrition and Aging 2006:26-29. (Japanese & English)</p> <p>Egawa K, Arao T, Muto T, et al. Effect of a convenience intervention program for lifestyle modification in physical activity and nutrition (LiSM10!) in middle-aged male office workers: a randomized controlled trial. International Congress Series no.1294:119–122. (English)</p>	NI	
McClure ¹¹¹ 2009	Health Risk Screening (CO levels, self-report) Fagerstrom Test of Nicotine Dependence	Developed by authors	NI	

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McKee ³² 2010	FLAIR (Family Lifestyle Assessment of Initial Risk) Child nutrition and sedentary behaviors were measured using an 8-item instrument developed by Ammerman and colleagues, adult eating using the 7-item Starting the Conversation-Diet survey, and adult exercise using the IPAQ	Green LA, Cifuentes M, Glasgow RE, et al. Redesigning primary care practice to incorporate health behavior change: prescription for health round-2 results. <i>Am J Prev Med</i> 2008;35:S347-9. Ammerman et al. Physical activity & nutrition behaviors monitoring form. North Carolina Department of Health and Human Services Women's and Children's Health Section; 2005. Guide to implementation, scoring, and counseling for diet, physical activity and smoking. North Carolina Prevention Partners; 2007.	Hagstromer M, Oja P, Sjostrom M. The International Physical Activity Questionnaire (IPAQ): a study of concurrent and construct validity. <i>Public Health Nutr</i> 2006;9:755-62. Craig CL, Marshall AL, Sjörström M, et al. International physical activity questionnaire: 12-country reliability and validity. <i>Med Sci Sports Exerc.</i> 2003;35(8):1381-1395.	
Mills ⁵⁰ 2007	HRA Questionnaire Questions from WHO-HPQ	Developed by authors	Authors suggest that validation research is available for base questionnaires (p.46)	
Moy ¹⁷ 2006	Self-administered questionnaires"	Developed by authors	NI	
Nice ¹²⁵ 1990	Personal Risk Profile	Developed by General Health, Inc. No reference	NI	
Nisbeth ⁶⁷ 2000	Clinical Examination	Standard clinical exam: Blood, exercise, smoking	NI	
	Questionnaire	Questionnaire: developed by authors	NI	

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Nitzke ¹²⁶ 2007	5 A Day Screener (5AD)	Potter JD, Finnegan JR, Guinard J-X, et al. 2000. 5 A Day for Better Health program evaluation report. NIII publication 01-4904. Bethesda, Md: National Institutes of Health, National Cancer Institute.	NI	
	Perceived Daily Intake (PI)	Greene G, Horacek T, White A, et al. Use of a diet interview method to define stages of change in young adults for fruit, vegetable and grain intake. Top Clin Nutr 2003;18:35-44.	NI	
Nurminen ⁶¹ 2002	"Structured questionnaires"	Developed by authors	NI	
O'Loughlin ³⁶ 1996	Questionnaire: questions drawn from Canadian Heart Health Surveys and non-quantitative Food Frequency Questionnaire	MacLean DR, Petrasovits A., Nargundkar M, et al. Canadian Heart Health Survey: a profile of cardiovascular risk: survey methods and data analysis. CMAJ 1992;146(Suppl):1969-74.	Authors refer to their previous validation study of food frequency questionnaire (validation r=0.48: p<0.001; internal consistency Cronbach's alpha =0.72) but do not supply a reference	
Papadaki ²⁵ 2008	SFFQ (Short food frequency questionnaires)	Papadaki A, Scott JA. The Mediterranean Eating in Scotland Experience project: evaluation of an internet-based intervention promoting the Mediterranean diet. Br J Nutr 2005;94:290-8.	Authors state it is validated: Papadaki A, Scott JA. The Mediterranean Eating in Scotland Experience project: evaluation of an internet-based intervention promoting the Mediterranean diet. Br J Nutr 2005;94:290-8.	

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Pelletier ⁸¹ 1998	Job Strain Survey (JSS)	"This instrument has an extensive research base establishing its reliability and validity (convergent, discriminant, construct, and predictive." (Pelletier 1998:167)	NI provided or found in preliminary search. Also called the Job Content Survey in the paper.	
	Healthtrac Health Risk Appraisal (HHRA)	"Based on prior research, both the reliability and validity of the risk assessment instrument have been established" (Pelletier 1998:167). No citations given by authors	Healthtrac company won the C.Everett Koop award in 1996 – well-documented. Also referred to in Ozminkowski RJ, Dunn RL, Goetzel RZ, et al. A return on investment evaluation of the Citibank, N.A., health management program. Am J Health Promot. 1999;14(1):31-43)	
Pescatello ³⁷ 2001	Survey	Developed retrospectively by authors to collect data on participation in health education and behavioral support programs	NI	
Peters ⁷⁵ 1999	The Carter Center of Emory University Health Risk Appraisal Program's Healthier People, Version 4.0	NI	NI	
	The Self-Rated Abilities for Health Practices Scale	Becker H, Stuijbergen A, Oh HS, et al. Self-rated abilities for health practices: A health self-efficacy measure. Health Values 1993;1:43-51.	Becker H, Stuijbergen A, Oh HS, et al. Self-rated abilities for health practices: A health self-efficacy measure. Health Values 1993;1:43-51.	
	The Multidimensional Health Locus of Control Scale	Wallston KA, Wallston BS, DeVellis R. Development of the multidimensional health locus of control (MHLC) scales. Health Education Monographs 6: 1978;160-170.	Wallston KA, Wallston BS, DeVellis R. Development of the multidimensional health locus of control (MHLC) scales. Health Education Monographs 6: 1978;160-170.	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Peters ⁷⁵ 1999 (cont'd)	The State-Trait Personality Inventory	Spielberger CD, Gorsuch RL, Lushene R, et al. State-Trait Anxiety Inventory for adults. Palo Alto (CA): Consulting Psychologists Press.	Spielberger CD, Gorsuch RL, Lushene R, et al. State-Trait Anxiety Inventory for adults. Palo Alto (CA): Consulting Psychologists Press.	
	Health Attitudes and Behaviour Scale	Elder JP, Artz LM, Beaudin P, Carleton RA, Lasater TM, Peterson MS, Roderigues A, Guadagnoli E, Vellicer WF. 1985. Multivariate evaluation of health attitudes and behaviors: Development and validation of a method for health promotion research. Preventive Medicine 1985;14;34-54.	Elder JP, Artz LM, Beaudin P, Carleton RA, Lasater TM, Peterson MS, Roderigues A, Guadagnoli E, Vellicer WF. 1985. Multivariate evaluation of health attitudes and behaviors: Development and validation of a method for health promotion research. Preventive Medicine 1985;14;34-54.	
Prochaska ⁶² 2008	The Health Risk Intervention was provided by Pro-Change Behavior Systems.	NR	NI	
Proper ⁶³ 2003	PACE: Patient-centred Assessment and Counseling for Exercise and Nutrition program (Fitness test, questionnaire, structured interview)	Patrick K, Sallis JF, Long BJ, et al. A new tool for encouraging activity: Project PACE. Phys Sportsmed 1994;22:45–55.	NI	
Puska ³⁸ 1988	Baseline Survey	Developed by authors	NI	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Racette ⁷⁶ 2009	Framingham Coronary Heart Disease (CHD) Risk Score	Framingham Coronary Heart Disease (CHD) Risk Score – calculated according to the National Cholesterol Education Program (NCEP) Adult Treatment Panel III (ATP III) guidelines (Expert Panel on Detection, 2001) – 16117: Gillespie MJ, Davis CJ, Lambert ND, et al. Measuring and treating serum lipids in patients in a chest pain observation unit. Am J Cardiol 2007;99:1718-1720.	Framingham Coronary Heart Disease (CHD) Risk Score – calculated according to the National Cholesterol Education Program (NCEP) Adult Treatment Panel III (ATP III) guidelines (Expert Panel on Detection, 2001) – 16117: Gillespie MJ, Davis CJ, Lambert ND, et al. Measuring and treating serum lipids in patients in a chest pain observation unit. Am J Cardiol 2007;99:1718-1720.	
	National Institutes of Health Fruit and Vegetable Screener	National Institutes of Health Fruit and Vegetable Screener: Thomson FE, Kipnis V, Subar AF, et al. Evaluation of 2 brief instruments and a food-frequency questionnaire to estimate daily number of servings of fruit and vegetables. Am J Clin Nutr 2000;71:1503-1510.	National Institutes of Health Fruit and Vegetable Screener: Thomson FE, Kipnis V, Subar AF, et al. Evaluation of 2 brief instruments and a food-frequency questionnaire to estimate daily number of servings of fruit and vegetables. Am J Clin Nutr 2000;71:1503-1510.	
	Kristal Fat and Fiber Behavior Questionnaire	Kristal Fat and Fiber Behavior Questionnaire: Kristal AR, Curry SJ, Shattuck AL, et al. A randomized trial of a tailored, self-help dietary intervention: the Puget Sound Eating Patterns study. Prev Med 2000;31:380-389.	Kristal Fat and Fiber Behavior Questionnaire: Kristal AR, Curry SJ, Shattuck AL, et al. A randomized trial of a tailored, self-help dietary intervention: the Puget Sound Eating Patterns study. Prev Med 2000;31:380-389.	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Racette ⁷⁶ 2009 (cont'd)	International Physical Activity Questionnaire (IPAQ)	International Physical Activity Questionnaire (IPAQ): Booth M. 2000. Assessment of physical activity: an international perspective. Res Q Exerc Sport 2000;71:S114-S120. Craig CL, Marshall AL, Sjörström M, et al. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc. 2003;35(8):1381-1395.	International Physical Activity Questionnaire (IPAQ): Booth M. 2000. Assessment of physical activity: an international perspective. Res Q Exerc Sport 2000;71:S114-S120. Craig CL, Marshall AL, Sjörström M, et al. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc. 2003;35(8):1381-1395.	
Rahe ⁷⁷ 2002	Stress and Coping Inventory (SCI)	SCI: Rahe RH. 1995. Stress and psychiatry. In: Kaplan HI, Sadock BJ, editors. Comprehensive textbook of psychiatry. Vol 2. 6 th ed. Baltimore: Williams & Wilkins; p.1545-1559. Miller M, Rahe RH. Life changes scaling for the 1990s. J Psychosom Res 1997;43:279-292.	SCI: Rahe RH, Veach TL, Tolles RL, Murakami K. 2000. The Stress and Coping Inventory: an educational and research instrument. Stress Med 16, 199-208	
	State-Trait Anxiety Inventory (STAI)	STAI: Spielberger CD, Gorsuch RL, Lushene R, et al. 1983. State-Trait Anxiety Inventory for adults. Palo Alto (CA): Consulting Psychologists Press	STAI: Spielberger CD, Gorsuch RL, Lushene R, et al. 1983. State-Trait Anxiety Inventory for adults. Palo Alto (CA): Consulting Psychologists Press	
	Quarterly Health Report Questionnaire (QHRQ)	QHRQ: NR	NI	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Richter ²² 1987	Lifestyle Assessment Questionnaire (LAQ)	<p>Hettler RB. 1982. Wellness promotion and risk reduction on a university campus. In: Faber M., Reinhardt A., eds. Promoting health through risk reduction. New York: MacMillan Publishing Company</p> <p>Hettler RB, Janty C, Moffat C. 1977. A comparison of seven methods of Health Hazard Appraisal. Proceedings of the Thirteenth Meeting of the Society of Prospective Medicine. Bethesda, MD: Society of Prospective Medicine, 36-44.</p>	NI	
Sabti ³¹ 2010	Questionnaire	<p>Developed by authors with physical activity level questions from the Swiss Health Survey 2002 (Lamprecht M, Stamm H. Detailanalyse zum Bewegungsverhalten der Schweizer Wohnbevölkerung. http://www.sportobs.ch/fileadmin/sportobs-dateien/DasObservatorium/SPORTOBS_Bericht05.pdf</p> <p>Health Enhancing Physical Activity Survey (HEPA) 1999/2001</p>	NI (unless the Dutch Web site offers validation/reliability information)	
Shephard ²³ 1982	Health Hazard Appraisal (HHA)	Health & Welfare Canada. Your lifestyle Profile. Operation Lifestyle. Promotion and Prevention Directorate, Health and Welfare, Canada. 1976.	Stated (pg. 369) that content validity of the LAQ was “established with the evaluation of the tool by two experts in the area of measurement and health promotion. Two experts, who were specialists in measurement and the study of health promotion, independently evaluated the wellness section of the LAQ.”	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Shephard ²³ 1982 (cont'd)	Canada Home Fitness Test	Shephard RJ, Bailey DA, Mirwald RL. Development of the Canadian Home Fitness Test. CMAJ 1976;114:675-679.	Stated (pg. 369) that content validity of the LAQ was “established with the evaluation of the tool by two experts in the area of measurement and health promotion. Two experts, who were specialists in measurement and the study of health promotion, independently evaluated the wellness section of the LAQ.”	
Shi ³³ 1992	HealthWise Step Intervention Study (HSIS)	Developed by Windom Health Enterprises 16154: Windom Health Enterprises. 1989. HealthWise research plan. Berkeley, CA	NI	
Singleton ³⁴ 1988	NR	Developed by author; NI	NI	
Selbst ⁷⁸ 1992	NR	NI	NI	
Smeets ¹⁰¹ 2008	I-Change Model (Integrated Model for explaining and changing behavior change)	I-Change: De Vries H, Mudde A, Leijts I et al. The European Smoking Prevention Framework Approach (ESFA): an example of integral prevention. Health Educ Res 2003; 18: 611–26.	SQUASH: Wendel-Vos G, Schuit A, Saris W, et al. Reproducibility and relative validity of the short questionnaire to assess health enhancing physical activity. J Clin Epidemiol 2003;56:1163–9.	
	SQUASH (Dutch Short Questionnaire to Assess Health Enhancing Physical Activity)	SQUASH: Wendel-Vos G, Schuit A, Saris W, et al. Reproducibility and relative validity of the short questionnaire to assess health enhancing physical activity. J Clin Epidemiol 2003;56:1163–9.	SQUASH: Wendel-Vos G, Schuit A, Saris W, et al. Reproducibility and relative validity of the short questionnaire to assess health enhancing physical activity. J Clin Epidemiol 2003;56:1163–9.	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Smith ⁹⁴ 1985	Health Hazard Appraisal (HHA)	Sadusk JF Jr, Robbins LC. Proposal for health hazard appraisals in comprehensive health care. JAMA 1968, 201:1108-12.	Sacks JJ, Krushat WM, Newman J. Reliability of the health hazard appraisal. Am J of Pub Hlth 1980;70:730-2.	
Sorensen ⁶⁴ 2007	Baseline survey	Developed by authors (based on tools from Cancer Institute and Society for Research on Nicotine and Tobacco	NI	
Spittaels ¹⁰⁰ 2007	International Physical Activity Questionnaire	Craig CL, Marshall AL, Sjöström M, et al. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc 2003;35(8):1381-1395.	Craig CL, Marshall AL, Sjöström M, et al. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc 2003;35(8):1381-1395.	
Spoth ⁹⁵ 1991	Jenkins Activity Survey (JAS)	Jenkins CD, Rosenman RH, Zyzansk SJ. 1965. The Jenkins Activity Survey for health prediction. Chapel Hill, NC: David C. Jenkins.	NI	
	Cook and Medley Hostility Scale (Ho)	Cook WW, Medley DM. Proposed hostility and pharisaic-virtue scales for the MMPI. J Appl Psychol 1954;39:414-418.	NI	
	Self-evaluation Questionnaire (SEQ)	Spielberger C, Gorsuch R, Lushene R. 1968. A State-Trait Anxiety Inventory: Test Manual for Form X. Palo Alto, CA: Consulting Psychologist's Press.	NI	
	Lifestyle Behavior Change Scale (LBCS)	LBCS developed by author	NI	
Steptoe ⁹⁰ 1999	Helping people change	Health Education Authority. Helping people change; health promotion in primary health care. London: HEA, 1994.	NI	
Stevens ⁸² 2002	Modified Fat & Fibre Questionnaire FFB	Modified by authors	NI for modification	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Strychar ⁶⁵ 1998	Health Risk Appraisal (including a Rate Your Plate component)	HRA Developed by authors Rate Your Plate: Gans KM, Sundaram SG, McPhillips JB, et al. Rate Your Plate: an eating pattern assessment and educational tool used at cholesterol screening and education programs. J Nutr Educ 1993;25:29-36.	NI	
Stuifbergen ¹²⁰ 2010	Health Promoting Lifestyle Profile II (HPLP-II)	Authors used the tools in column 2 to develop their survey: Walker S, Sechrist K, Pender N. Health Promoting Lifestyle Profile II. Omaha, NE, Authors, 1995.	Previous work (noted in current study) documenting reliability/validity of tools: HPLPP-II: Stuifbergen A, Blozis S, Harrison T, Becker H. Exercise, functional limitations and quality of life: a longitudinal study of persons with multiple sclerosis. Arch Phys Med Rehabil 2006;87:935-43. SRAHP: Stuifbergen AK, Becker H, Blozis S, Timmerman G, Kullberg V. A randomized clinical trial of a wellness intervention for women with multiple sclerosis. Arch Phys Med Rehabil. 2003;84:467-76. SRAHP: Stuifbergen AK, Becker H, Blozis S, Timmerman G, Kullberg V. A randomized clinical trial of a wellness intervention for women with multiple sclerosis. Arch Phys Med Rehabil. 2003;84:467-76.	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Stuifbergen ¹²⁰ 2010 (cont'd)	Self Rated Abilities for Health Practices Scale (SRAHP)	Becker H, Stuifbergen A, Oh HS, et al. Self-rated abilities for health practices: a health self-efficacy measure. Health Values 1993;17:42–50.	<p>Previous work (noted in current study) documenting reliability/validity of tools:</p> <p>HPLPP-II: Stuifbergen A, Blozis S, Harrison T, Becker H. Exercise, functional limitations and quality of life: a longitudinal study of persons with multiple sclerosis. Arch Phys Med Rehabil 2006;87:935–43.</p> <p>SRAHP: Stuifbergen AK, Becker H, Blozis S, Timmerman G, Kullberg V. A randomized clinical trial of a wellness intervention for women with multiple sclerosis. Arch Phys Med Rehabil. 2003;84:467–76.</p> <p>SRAHP: Stuifbergen AK, Becker H, Blozis S, Timmerman G, Kullberg V. A randomized clinical trial of a wellness intervention for women with multiple sclerosis. Arch Phys Med Rehabil. 2003;84:467–76.</p>	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Stuifbergen ¹²⁰ 2010 (cont'd)	Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36)	Ware JE Jr, Kosinski M, Dewey JE. How to score version 2 of the SF-36_ health survey. Lincoln, RI, QualityMetric Inc., 2000.	Previous work (noted in current study) documenting reliability/validity of tools: HPLPP-II: Stuifbergen A, Blozis S, Harrison T, Becker H. Exercise, functional limitations and quality of life: a longitudinal study of persons with multiple sclerosis. Arch Phys Med Rehabil 2006;87:935–43. SRAHP: Stuifbergen AK, Becker H, Blozis S, Timmerman G, Kullberg V. A randomized clinical trial of a wellness intervention for women with multiple sclerosis. Arch Phys Med Rehabil. 2003;84:467–76. SRAHP: Stuifbergen AK, Becker H, Blozis S, Timmerman G, Kullberg V. A randomized clinical trial of a wellness intervention for women with multiple sclerosis. Arch Phys Med Rehabil. 2003;84:467–76.	
	Fibromyalgia Impact Questionnaire	Dunkl PR, Taylor AG, McConnell CG, et al. Responsiveness of fibromyalgia clinical trial outcome measures. J Rheumatol 2000;27:2683–91.	FIQ Burckhardt C, Clark S, Bennett R. The fibromyalgia impact questionnaire: development and validation. J Rheumatol 1991;18:728–33.	
Taimela ^{9,13} 2008	Self-administered questionnaire	Developed by authors	NI	
Talvi ³⁵ 1999	Questionnaire; blood and lab tests; fitness test	NI on source	NI	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Toft ⁸³ 2008	PRECARD® used to estimate absolute risk of IHD within next 10 years (Copenhagen Risk Score)	Thomsen T, Borch-Johnsen K, Davidsen M, et al. The 'PRECARD' study: identification and management of individuals at risk of developing cardiovascular disease. Can J Cardiol 1997;13 (Suppl B): 286B-287B.	NI	
van Beurden ²⁷ 1990	NR	NI	Schoenbach V, Wagner EH, Beery W. 1987. Health risk appraisal: Review of evidence for effectiveness. Health Serv Res 22, 576	
Vandelanotte ¹¹⁸ 2005	Fat and Activity Tailored to Health (FAITH) project IPAQ	<p>Vandelanotte C, De Bourdeaudhuij I. Acceptability and feasibility of a computer-tailored physical activity intervention using stages of change: Project FAITH. Health Education Research 2003;18:304-317.</p> <p>Vandelanotte C, De Bourdeaudhuij I., Brug J. Acceptability and feasibility of an interactive computer-tailored fat intake intervention in Belgium. Health Promot Int 2004;19(4):463-70. Epub 2004 Nov 8.</p>	<p>Vandelanotte C, De Bourdeaudhuij I. Acceptability and feasibility of a computer-tailored physical activity intervention using stages of change: Project FAITH. Health Education Research 2003;18:304-317.</p> <p>Vandelanotte C, De Bourdeaudhuij I., Brug J. Acceptability and feasibility of an interactive computer-tailored fat intake intervention in Belgium. Health Promot Int 2004;19(4):463-70. Epub 2004 Nov 8.</p>	
	Food frequency questionnaire	Craig CL, Marshall AL, Sjöström M, et al. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc 2003;35(8):1381-1395.	Thompson FE, Subar AF, Smith AF, Midthune D, Radimer KL, Kahle LL, Kipnis V. Fruit and vegetable assessment: performance of 2 new short instruments and a food frequency questionnaire. J Am Diet Assoc 2002;102:1764-1772.	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
van 't Riet ¹¹⁹ 2010	International Physical Activity Questionnaire (IPAQ)	Craig CL, Marshall AL, Sjöström M, et al. International physical activity questionnaire: 12-country reliability and validity. <i>Med Sci Sports Exerc</i> 2003;35(8):1381-1395.	Williams RB Jr., Barefoot JC, Shekelle RB. 1985. The health consequences of hostility, in <i>Anger and Hostility in Cardiovascular and Behavioral Disorders</i> . M.A. Chesney and R.H. Rosenman (eds.). New York: Hemisphere Publishing Corporation	
Von Huth ⁹² 2008	PRECARD® used to estimate absolute risk of IHD within next 10 years (Copenhagen Risk Score)	Thomsen,T, Borch-Johnsen K, Davidsen M, et al. The 'PRECARD' study: identification and management of individuals at risk of developing cardiovascular disease. <i>Can J Cardiol</i> 1997;13(Suppl B):286B-287B.	NI	
Walker ¹¹⁷ 2010	PAR-Q (Physical Activity Readiness Questionnaire)	American College of Sports Medicine 2006.	NI	
Wilson ²⁴ 1980	University of Wisconsin Lifestyle Questionnaire	University of Wisconsin-Stevens Point. Lifestyle Assessment Questionnaire-Risk of Death Section. Stevens Point: University of Wisconsin Press, 1976.	NI	
Yen ²⁰ 2001	Health Risk Appraisal in tandem with General Motors LifeSteps Health Promotion Program	This HRA is currently a product of the StayWell Company. The LifeSteps Program won a C.Everett Koop National health Award in 2004.	NI	
Medicare Population				
Brennan ¹²¹ 2010	Questionnaire	Developed by authors	NI	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Charlson ⁸⁵ 2008	Patients completed a health assessment that evaluated 13 cardiac risk factors, including physical activity, smoking, diet and medications. Questionnaire used Semi-Quantitative Food Frequency Questionnaire (FFQ); Modified Minnesota Leisure time activity questionnaire (MMLTA)	MMLTA: Taylor HL, Jacobs DR, Schucker B et al. A questionnaire for the assessment of leisure time physical activities. J Chronic Dis 1997; 31: 741–55.	FFQ: 16110: Rimm EB, Giovannucci EL, Stampfer MJ et al. Reproducibility and validity of an expended self-administered semiquantitative food frequency questionnaire among male health professionals. Am J Epidemiol 1992; 135: 1114–26 and discussion 1127–36	
Fries ⁷ 1993 & Leigh ¹¹ 1992	Health Risk Score	Developed by authors based on Framingham and other studies, and the tool was adapted from the Healthtrac Health Assessment Questionnaire, discussed in: Ramey D, Raynauld J, Fries J. The Health Assessment Questionnaire 1992: Status and review. Arthritis Care and Research Journal 1992;5:119-129.	Health risk score evaluated for reliability convergent validity, internal validity (see p.457 for r and p)	
Fries ¹²³ 1994	Healthtrac and Senior Healthtrac Active and Passive programs	Healthtrac company won the C. Everett Koop award in 1996 – well-documented	Ramey D, Raynauld J, Fries J. The Health Assessment Questionnaire 1992: Status and review. Arthritis Care and Research Journal 1992; 5:119-129.	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Fries ¹²³ 1994 (cont'd)	Health Assessment Questionnaire (HAQ)	HAQ: Ramey D, Raynauld J, Fries J. The Health Assessment Questionnaire 1992: Status and review. Arthritis Care and Research Journal 1992;5:119-129.	HAQ: Ramey D, Raynauld J, Fries J. The Health Assessment Questionnaire 1992: Status and review. Arthritis Care and Research Journal 1992;5:119-129.	
Gallagher ¹²⁴ 1996	FICSIT (fear of falling)	Washington University Division of Biostatistics. FICSIT Frailty and Injury: Cooperative studies of intervention techniques. Procedure Manual. St. Louis, MI: Washington University, 1991 Based on measure developed for Ottawa-Carleton Health Dept study: Edwards N. Ottawa-Carleton Health Unit Study of Falls. (Unpublished Interview Schedule) 1991	NI	
	Falls efficacy 15 item scale showing local services for elderly (to measure health services utilization)	Developed by authors	NI	
	MOS Short Form Health Survey (SF-36) (quality of life)	Authors provide same reference as for FICSIT (above)	Brazier JE, Harper R, Jones NM, et al. Validating the SF-36 health survey questionnaire: new outcome measure for primary care. BMJ 1992; 305(6846):160-4.	
	Social Activities of Daily Living scale (social functioning)	Reuben D, Laliberte L, Hiris J, et al. A hierarchical exercise scale to measure function at the advanced activities of daily living (AADL) level. J of the Am Ger Soc 1990;38:855-61.	NI	
Harari ⁸⁷ 2008	Health Risk Appraisal for Older Persons (HRA-O)	Breslow L, Beck JC, Morgenstern H et al. Development of a Health Risk Appraisal for the Elderly (HRA-E). Am J Health Promot 1997;11:337-43.	NI	
Maes ²⁶ 1992	Health Risk Assessment	Developed by authors	NI	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Makrides ⁸⁰ 2008	Wellscore Personal Health Profile Questionnaire (PHP)	Wellscore, Inc.	Personal Wellness Profile (PWP) is NCQA certified, and was certified by the University of Florida. More information about validity is available at: www.wellscore.com/scientific-validity.html	√
Mayer ⁹⁷ 1994	Health Risk Appraisal	Not defined	NI	
Meng ¹¹⁵ 2010	Outcomes and Assessment Information Set (OASIS) ADLs scale	Shaughnessy PW, Crisler KS, Schlenker RE. Medicare's OASIS: Standardization Outcome and Assessment Information Set for Home Health Care: OASIS B. Denver, Colo: Center for Health Services and Policy Research; 1997.	Madigan EA, Fortinsky RH. Additional psychometric evaluation of the Outcomes and Assessment Information Set (OASIS). Home Health Care Serv Q. 2000;18:49–62. Madigan EA, Fortinsky RH. Interrater reliability of the Outcomes and Assessment Information Set: results from the field. Gerontologist 2004;44:689–692.	
Stoddard ⁹¹ 2004	"A comprehensive health risk appraisal" HealthChek® Personal Risk Assessment (PRA)	Medical Sciences, Inc. Boston, MA.	NI	
van Stralen ¹⁴ 2009	Questionnaire SQUASH	SQUASH was adapted from the Healthtrac Health Assessment Questionnaire, discussed in: Ramey, D., Raynauld, J., Fries, J. The Health Assessment Questionnaire 1992: Status and review. Arthritis Care and Research Journal 1992;5:119-129.	Wendel-Vos G, Schuit A, Saris W, et al. Reproducibility and relative validity of the short questionnaire to assess health enhancing physical activity. J Clin Epidemiol 2003;56:1163–9.	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Van Stralen ¹⁰ 2010	Questionnaire SQUASH	Wendel-Vos G, Schuit A, SarisWet al. Reproducibility and relative validity of the short questionnaire to assess health enhancing physical activity. J Clin Epidemiol 2003; 56: 1163–9.	See column 3 Wagnemakers R, van den Akker-Scheek I, Groothoff JW, et al. Reliability and validity of the short questionnaire to assess health enhancing physical activity (SQUASH) in patients after total hip arthroplasty. BMC Musculoskeletal Disorders. 2008;9:141.	
Wallace ¹¹⁶ 1998	Medical Outcomes Study Short-Form 36 (SF-36)	Ware JE, Sherbourne CD 1992. The MOS 36 item short-form health survey (SF-36): conceptual framework and item selection. Med Care 30, 473-483.	NI	
	CES-Depression scale	Radloff LS. CES-D scale: a self-report depression scale for research in the general population. Appl Psychol Measure 1977;1:385-400.	NI	
	CAGE questionnaire	Ewing JA. Detecting alcoholism. The CAGE questionnaire. JAMA 1984;14:1905-1907.	NI	

Evidence Table 2. Health risk appraisal instruments used in the extracted studies (cont'd)

Author	Tools / Instruments	Instrument Reference	Validity / Reliability	NCQA Certified
Walker ¹¹⁷ 2010	1998 Block Health Habits and History Questionnaire (Web version) Modified 7-Day Activity Recall	Block Health and Modified 7-day Activity Recall not sourced although Block is an author on use and reliability of Web version.	<p>Boeckner LS, Pullen CH, Walker SN, et al. Use and reliability of the World Wide Web version of the Block Health Habits and History Questionnaire with older rural women. <i>Journal of Nutrition Education and Behavior</i> 2002;34(Suppl. 1):S20-S24.</p> <p>Hellman E A, Williams M A, & Thalken L. Construct validity of the Modified 7-Day Activity Interview used with older adults with cardiac problems. <i>Rehabilitation Nursing Research</i> 1997;5(4):126-133.</p> <p>Hageman PA, Walker SN, Pullen CH, et al. Test-retest reliability of the Rockport Fitness Walking Test and other fitness measures in women ages 50-69 years. <i>Issues on Aging</i> 2001;24(2):7-11.</p>	