

Literatur

- Thompson HJ, Brick MA: Perspective: closing the dietary fiber gap: an ancient solution for a 21st century problem. *Adv Nutr* 2016; 7(4): 623–6.
- Ramdath DD, Padhi EM, Sarfaraz S, et al.: Beyond the cholesterol-lowering effect of soy protein: a review of the effects of dietary soy and its constituents on risk factors for cardiovascular disease. *Nutrients* 2017; 9(4): E324.
- Deutsche Gesellschaft für Ernährung (ed.): *Ernährungsbericht 2016*. Bonn: Köllen Druck + Verlag GmbH 2016.
- Jahreis G, Brese M, Leiterer M, et al.: Legume flours: nutritionally important sources of protein and dietary fiber. *Ernahrungs Umschau* 2016; 63(2): 36–42.
- Erbersdobler HF, Barth CA, Jahreis G: Legumes in human nutrition. Nutrient content and protein quality of pulses. *Ernahrungs Umschau* 2017; 64(9): 134–9.
- Sievenpiper JL, Kendall CW, Esfahani A, et al.: Effect of non-oil-seed pulses on glycaemic control: a systematic review and meta-analysis of randomised controlled experimental trials in people with and without diabetes. *Diabetologia* 2009; 52(8): 1479–95.
- Erbersdobler HF, Barth CA, Jahreis G: Legumes in human nutrition. Nutrient content and protein quality of pulses. *Ernahrungs Umschau* 2017; 64(10): 140–4.
- Lopez-Barríos L, Gutierrez-Urbe JA, Serna-Saldívar SO: Bioactive peptides and hydrolysates from pulses and their potential use as functional ingredients. *J Food Sci* 2014; 79(3): R273–83.
- Kouris-Blazos A, Belski R: Health benefits of legumes and pulses with a focus on Australian sweet lupins. *Asia Pac J Clin Nutr* 2016; 25(1): 1–17.
- Champ MM: Non-nutrient bioactive substances of pulses. *Br J Nutr* 2002; 88 Suppl 3: S307–19.
- Bührer C, Genzel-Boroviczény O, Jochum F, et al.: Ernährung gesunder Säuglinge. Empfehlungen der Ernährungskommission der Deutschen Gesellschaft für Kinder- und Jugendmedizin. *Monatsschr Kinderheilkd* 2014; 162: 527–38.
- Souci SW, Fachmann W, Kraut H: *Die Zusammensetzung der Lebensmittel. Nährwert Tabellen*. Stuttgart: Wissenschaftliche Verlagsgesellschaft mbH 2016.
- Jakse B, Jakse B, Pajek M, et al.: Uric acid and plant-based nutrition. *Nutrients* 2019; 11(8): 1736.
- Sandberg AS: Bioavailability of minerals in legumes. *Br J Nutr* 2002; 88 Suppl 3: S281–5.
- Gläser P, Dawid C, Meister S, et al.: Molecularization of bitter off-taste compounds in pea protein isolates (*Pisum sativum* L.). *J Agric Food Chem* 2020: doi.org/10.1021/acs.jafc.9b06663.
- Zhang XM, Zhang YB, Chi MH: Soy protein supplementation reduces clinical indices in type 2 diabetes and metabolic syndrome. *Yonsei Med J* 2016; 57(3): 681–9.
- Salehi-Abargouei A, Saraf-Bank S, Bellissimo N, et al.: Effects of non-soy legume consumption on C-reactive protein: a systematic review and meta-analysis. *Nutrition* 2015; 31(5): 631–9.
- Schwingshackl L, Hoffmann G, Iqbal K, et al.: Food groups and intermediate disease markers: a systematic review and network meta-analysis of randomized trials. *Am J Clin Nutr* 2018; 108(3): 576–86.
- Belski R, Mori TA, Puddey IB, et al.: Effects of lupin-enriched foods on body composition and cardiovascular disease risk factors: a 12-month randomized controlled weight loss trial. *Int J Obes (Lond)* 2011; 35(6): 810–9.
- Blanco Mejia S, Messina M, Li SS, et al.: A meta-analysis of 46 studies identified by the FDA demonstrates that soy protein decreases circulating LDL and total cholesterol concentrations in adults. *J Nutr* 2019; 149(6): 968–81.
- Jenkins DJA, Blanco Mejia S, Chiavaroli L, et al.: Cumulative meta-analysis of the soy effect over time. *J Am Heart Assoc* 2019; 8(13): e012458.
- Yang B, Chen Y, Xu T, et al.: Systematic review and meta-analysis of soy products consumption in patients with type 2 diabetes mellitus. *Asia Pac J Clin Nutr* 2011; 20(4): 593–602.
- Tokede OA, Onabanjo TA, Yansane A, et al.: Soya products and serum lipids: a meta-analysis of randomised controlled trials. *Br J Nutr* 2015; 114(6): 831–43.
- Bazzano LA, Thompson AM, Tees MT, et al.: Non-soy legume consumption lowers cholesterol levels: a meta-analysis of randomized controlled trials. *Nutr Metab Cardiovasc Dis* 2011; 21(2): 94–103.
- Ha V, Sievenpiper JL, De Souza RJ, et al.: Effect of dietary pulse intake on established therapeutic lipid targets for cardiovascular risk reduction: a systematic review and meta-analysis of randomized controlled trials. *Cmaj* 2014; 186(8): E252–62.
- Bähr M, Fechner A, Kiehntopf M, et al.: Consuming a mixed diet enriched with lupin protein beneficially affects plasma lipids in hypercholesterolemic subjects: a randomized controlled trial. *Clin Nutr* 2015; 34(1): 7–14.
- Fechner A, Kiehntopf M, Jahreis G: The formation of short-chain fatty acids is positively associated with the blood lipid-lowering effect of lupin kernel fiber in moderately hypercholesterolemic adults. *J Nutr* 2014; 144(5): 599–607.
- Messina V: Nutritional and health benefits of dried beans. *Am J Clin Nutr* 2014; 100 Suppl 1: 437s–42s.
- Liu ZM, Chen YM, Ho SC: Effects of soy intake on glycemic control: a meta-analysis of randomized controlled trials. *Am J Clin Nutr* 2011; 93(5): 1092–101.
- Viguiouk E, Stewart SE, Jayalath VH, et al.: Effect of replacing animal protein with plant protein on glycemic control in diabetes: a systematic review and meta-analysis of randomized controlled trials. *Nutrients* 2015; 7(12): 9804–24.
- Li SS, Kendall CW, De Souza RJ, et al.: Dietary pulses, satiety and food intake: a systematic review and meta-analysis of acute feeding trials. *Obesity (Silver Spring)* 2014; 22(8): 1773–80.
- Simpson HL, Campbell BJ: Review article: dietary fibre-microbiota interactions. *Aliment Pharmacol Ther* 2015; 42(2): 158–79.
- Gentile CL, Weir TL: The gut microbiota at the intersection of diet and human health. *Science* 2018; 362(6416): 776–80.
- Fechner A, Fenske K, Jahreis G: Effects of legume kernel fibres and citrus fibre on putative risk factors for colorectal cancer: a randomised, double-blind, crossover human intervention trial. *Nutr J* 2013; 12: 101.
- Paoletti R, Bolego C, Poli A, et al.: Metabolic syndrome, inflammation and atherosclerosis. *Vasc Health Risk Manag* 2006; 2(2): 145–52.
- Akhlaghi M, Zare M, Nouripour F: Effect of soy and soy isoflavones on obesity-related anthropometric measures: a systematic review and meta-analysis of randomized controlled clinical trials. *Adv Nutr* 2017; 8(5): 705–17.
- Kim SJ, De Souza RJ, Choo VL, et al.: Effects of dietary pulse consumption on body weight: a systematic review and meta-analysis of randomized controlled trials. *Am J Clin Nutr* 2016; 103(5): 1213–23.
- Onakpoya I, Aldaas S, Terry R, et al.: The efficacy of *Phaseolus vulgaris* as a weight-

- loss supplement: a systematic review and meta-analysis of randomised clinical trials. *Br J Nutr* 2011; 106(2): 196–202.
39. Jenkins DJ, Kendall CW, Augustin LS, et al.: Effect of legumes as part of a low glycemic index diet on glycemic control and cardiovascular risk factors in type 2 diabetes mellitus: a randomized controlled trial. *Arch Intern Med* 2012; 172(21): 1653–60.
 40. Bertoia ML, Mukamal KJ, Cahill LE, et al.: Changes in intake of fruits and vegetables and weight change in United States men and women followed for up to 24 years: analysis from three prospective cohort studies. *PLoS Med* 2015; 12(9): e1001878.
 41. Rautiainen S, Wang L, Lee IM, et al.: Higher intake of fruit, but not vegetables or fiber, at baseline is associated with lower risk of becoming overweight or obese in middle-aged and older women of normal BMI at baseline. *J Nutr* 2015; 145(5): 960–8.
 42. Schlesinger S, Neuenschwander M, Schwedhelm C, et al.: Food groups and risk of overweight, obesity, and weight gain: a systematic review and dose-response meta-analysis of prospective studies. *Adv Nutr* 2019; 10(2): 205–18.
 43. Ralston RA, Lee JH, Truby H, et al.: A systematic review and meta-analysis of elevated blood pressure and consumption of dairy foods. *J Hum Hypertens* 2012; 26(1): 3–13.
 44. Dong JY, Tong X, Wu ZW, et al.: Effect of soya protein on blood pressure: a meta-analysis of randomised controlled trials. *Br J Nutr* 2011; 106(3): 317–26.
 45. Jayalath VH, De Souza RJ, Sevenpiper JL, et al.: Effect of dietary pulses on blood pressure: a systematic review and meta-analysis of controlled feeding trials. *Am J Hypertens* 2014; 27(1): 56–64.
 46. Schwingshackl L, Schwedhelm C, Hoffmann G, et al.: Food groups and risk of hypertension: a systematic review and dose-response meta-analysis of prospective studies. *Adv Nutr* 2017; 8(6): 793–803.
 47. Borgi L, Muraki I, Satija A, et al.: Fruit and vegetable consumption and the incidence of hypertension in three prospective cohort studies. *Hypertension* 2016; 67(2): 288–93.
 48. Li W, Ruan W, Peng Y, et al.: Soy and the risk of type 2 diabetes mellitus: A systematic review and meta-analysis of observational studies. *Diabetes Res Clin Pract* 2018; 137: 190–9.
 49. Tian S, Xu Q, Jiang R, et al.: Dietary protein consumption and the risk of type 2 diabetes: a systematic review and meta-analysis of cohort studies. *Nutrients* 2017; 9(9): 982.
 50. Schwingshackl L, Hoffmann G, Lampousi AM, et al.: Food groups and risk of type 2 diabetes mellitus: a systematic review and meta-analysis of prospective studies. *Eur J Epidemiol* 2017; 32(5): 363–75.
 51. Afshin A, Micha R, Khatibzadeh S, et al.: Consumption of nuts and legumes and risk of incident ischemic heart disease, stroke, and diabetes: a systematic review and meta-analysis. *Am J Clin Nutr* 2014; 100(1): 278–88.
 52. Becerra-Tomas N, Diaz-Lopez A, Rosique-Esteban N, et al.: Legume consumption is inversely associated with type 2 diabetes incidence in adults: A prospective assessment from the PREDIMED study. *Clin Nutr* 2018; 37(3): 906–13.
 53. Pacifico L, Nobili V, Anania C, et al.: Pediatric nonalcoholic fatty liver disease, metabolic syndrome and cardiovascular risk. *World J Gastroenterol* 2011; 17(26): 3082–91.
 54. Markova M, Pivovarova O, Hornemann S, et al.: Isocaloric diets high in animal or plant protein reduce liver fat and inflammation in individuals with type 2 diabetes. *Gastroenterology* 2017; 152(3): 571–85.
 55. Yan Z, Zhang X, Li C, et al.: Association between consumption of soy and risk of cardiovascular disease: A meta-analysis of observational studies. *Eur J Prev Cardiol* 2017; 24(7): 735–47.
 56. Lou D, Li Y, Yan G, et al.: Soy consumption with risk of coronary heart disease and stroke: a meta-analysis of observational studies. *Neuroepidemiology* 2016; 46(4): 242–52.
 57. Shi ZQ, Tang JJ, Wu H, et al.: Consumption of nuts and legumes and risk of stroke: a meta-analysis of prospective cohort studies. *Nutr Metab Cardiovasc Dis* 2014; 24(12): 1262–71.
 58. Marventano S, Izquierdo Pulido M, Sanchez-Gonzalez C, et al.: Legume consumption and CVD risk: a systematic review and meta-analysis. *Public Health Nutr* 2017; 20(2): 245–54.
 59. Bechthold A, Boeing H, Schwedhelm C, et al.: Food groups and risk of coronary heart disease, stroke and heart failure: a systematic review and dose-response meta-analysis of prospective studies. *Crit Rev Food Sci Nutr* 2019; 59(7): 1071–90.
 60. Miller V, Mente A, Dehghan M, et al.: Fruit, vegetable, and legume intake, and cardiovascular disease and deaths in 18 countries (PURE): a prospective cohort study. *Lancet* 2017; 390(10107): 2037–49.
 61. Li H, Li J, Shen Y, et al.: Legume consumption and all-cause and cardiovascular disease mortality. *Biomed Res Int* 2017; 2017: 8450618.
 62. Aune D, Chan DS, Lau R, et al.: Dietary fibre, whole grains, and risk of colorectal cancer: systematic review and dose-response meta-analysis of prospective studies. *Bmj* 2011; 343: d6617.
 63. Zhu B, Sun Y, Qi L, et al.: Dietary legume consumption reduces risk of colorectal cancer: evidence from a meta-analysis of cohort studies. *Sci Rep* 2015; 5: 8797.
 64. Lu D, Pan C, Ye C, et al.: Meta-analysis of soy consumption and gastrointestinal cancer risk. *Sci Rep* 2017; 7(1): 4048.
 65. Vieira AR, Abar L, Chan DSM, et al.: Foods and beverages and colorectal cancer risk: a systematic review and meta-analysis of cohort studies, an update of the evidence of the WCRF-AICR Continuous Update Project. *Ann Oncol* 2017; 28(8): 1788–802.
 66. Schwingshackl L, Schwedhelm C, Hoffmann G, et al.: Food groups and risk of colorectal cancer. *Int J Cancer* 2018; 142(9): 1748–58.
 67. Applegate CC, Rowles JL, Ranard KM, et al.: Soy consumption and the risk of prostate cancer: an updated systematic review and meta-analysis. *Nutrients* 2018; 10(1): 40.
 68. Li J, Mao QQ: Legume intake and risk of prostate cancer: a meta-analysis of prospective cohort studies. *Oncotarget* 2017; 8(27): 44776–84.
 69. Diallo A, Deschasaux M, Galan P, et al.: Associations between fruit, vegetable and legume intakes and prostate cancer risk: results from the prospective Supplementation en Vitamines et Mineraux Antioxydants (SU.VI.MAX) cohort. *Br J Nutr* 2016; 115(9): 1579–85.
 70. Wu J, Zeng R, Huang J, et al.: Dietary protein sources and incidence of breast cancer: a dose-response meta-analysis of prospective studies. *Nutrients* 2016; 8(11): 730.
 71. Chen M, Rao Y, Zheng Y, et al.: Association between soy isoflavone intake and breast cancer risk for pre- and post-menopausal women: a meta-analysis of epidemiological studies. *PLoS One* 2014; 9(2): e89288.

72. *Scientific Report of the 2015 Dietary Guidelines Advisory Committee*. Washington DC: US Departments of Agriculture and Health and Human Services 2015. https://ods.od.nih.gov/pubs/2015_DGAC_Scientific_Report.pdf (last accessed on 15 March 2020).
73. Ndanuko RN, Tapsell LC, Charlton KE, et al.: Dietary patterns and blood pressure in adults: a systematic review and meta-analysis of randomized controlled trials. *Adv Nutr* 2016; 7(1): 76–89.
74. Jannasch F, Kroger J, Schulze MB: Dietary patterns and type 2 diabetes: a systematic literature review and meta-analysis of prospective studies. *J Nutr* 2017; 147(6): 1174–82.
75. Grosso G, Marventano S, Yang J, et al.: A comprehensive meta-analysis on evidence of Mediterranean diet and cardiovascular disease: Are individual components equal? *Crit Rev Food Sci Nutr* 2017; 57(15): 3218–32.
76. Krems C, Walter C, Heuer T, et al.: Lebensmittelverzehr und Nährstoffzufuhr – Ergebnisse der Nationalen Verzehrsstudie II. In: Deutsche Gesellschaft für Ernährung (ed.): *Ernährungsbericht 2012*. Ort: Warlich Druck Meckenheim GmbH 2012, 40–85.
77. Dubuisson C, Lioret S, Touvier M, et al.: Trends in food and nutritional intakes of French adults from 1999 to 2007: results from the INCA surveys. *Br J Nutr* 2010; 103(7): 1035–48.
78. Leclercq C, Arcella D, Piccinelli R, et al.: The Italian National Food Consumption Survey INRAN-SCAI 2005–06: main results in terms of food consumption. *Public Health Nutr* 2009; 12(12): 2504–32.
79. Willett W, Rockstrom J, Loken B, et al.: Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *Lancet* 2019; 393(10170): 447–92.
80. Horner HT, Cervantes-Martinez T, Healy R, et al.: Oxalate and phytate concentrations in seeds of soybean cultivars [*Glycine max* (L.) Merr.]. *J Agric Food Chem* 2005; 53(20): 7870–77.
81. Malencic D, Cvejic J, Miladinovic J: Polyphenol content and antioxidant properties of colored soybean seeds from central Europe. *J Med Food* 2012; 15(1): 89–95.
82. Bulatova K, Mazkirat S, Didorenko S, et al.: Trypsin Inhibitor assessment with biochemical and molecular markers in a soybean germplasm collection and hybrid populations for seed quality improvement. *Agronomy* 2019; 9(2): 76.

DOI: 10.4455/eu.2020.045

DOI: 10.4455/eu.2020.049