

Study / Condition	Design	Study group	Intervention	Outcomes	Statistically significant?	Comments
Widén et al. 2015 Gingivitis	Randomized, placebo controlled trial	n = 24 Patients with gingivitis	250 or 500 g bilberries or placebo or standard therapy	Reduced inflammatory cytokine levels and bleeding on probing	Yes (for 500 g group)	-
Karlsen et al. 2010 Cardiovascular risk	Randomized, placebo controlled trial	n = 62 Subjects at elevated risk of cardiovascular disease	330 ml of bilberry juice or water Daily for 4 weeks	Reduced C-reactive protein, IL-6, IL-15, and monokine induced by INF- γ Increase of TNF- α No change in oxidative stress markers or antioxidant status	Yes	-
Kolehmainen et al. 2012 Metabolic syndrome	Randomized controlled trial	n = 27 Overweight individuals with additional symptoms of metabolic syndrome	Equivalent of 400 g fresh bilberries (200 g of bilberry purée and 40 g of dried bilberries) or no intervention Daily for 8 weeks	Reductions in several inflammatory parameters (C-reactive protein, IL-6, IL-12 and LPS) Significantly lower inflammation scores Glucose and lipid metabolism unchanged	Partially	-
Aboonabi et al. 2020 Metabolic syndrome	Open-label trial	n = 55 Healthy group and metabolic syndrome group	320 mg anthocyanin supplements (purified bilberry and blackcurrant anthocyanins) Twice daily for 4 weeks	Reduced fasting serum glucose Reduced serum triglycerides and LDL-C Reduced high-sensitivity C-reactive protein Decreased ADP-induced platelet activation configuration	Yes (in Metabolic syndrome group)	Lack of placebo control

Biedermann et al. 2012 Ulcerative colitis	Open-label pilot trial	n = 11 Patients with mild to moderate ulcerative colitis	Preparation made of dried bilberry powder and concentrated bilberry juice, 160 g (corresponding to 600 g fresh bilberries) Daily for 6 weeks	63,4% patients achieving remission Decrease in total Mayo score in all patients Decreased fecal calprotectin levels	Yes	-
Lynn et al. 2018 Exercise-induced inflammation	Single blind, randomized, placebo-controlled trial	n = 19 Recreational runners	400 ml bilberry juice or control drink Daily 5 days before, during and two days after a half marathon race	Mild increase of exercise-induced muscle soreness and of C-reactive protein levels in blood in bilberry group post-race	Yes	-
Hoggard et al. 2013 T2DM	Double-blinded, placebo-controlled crossover trial	n = 8 Male subjects with T2DM controlled by diet and lifestyle alone or with impaired glucose tolerance	470 mg standardized bilberry fruit extract (Mirtoselect) or placebo Single oral dose followed by a polysaccharide drink	Lower postprandial insulin and glucose blood levels compared to placebo No change in gut, pancreatic or anti-inflammatory peptides	Yes	-

De Mello et al. 2011 T2DM	Randomized, controlled trial	n = 104 Individuals with impaired glucose metabolism and/or symptoms of metabolic syndrome	400g fresh bilberries as a part of diet high in fatty fish, bilberries and wholegrain products Daily for 8 weeks	Lower fasting plasma glucose level Insulin sensitivity remained unchanged	Yes	Bilberries were a part of a more complex dietary intervention
Chan et al. 2021 T2DM	Randomized, double-blind, placebo- controlled, cross- over intervention study	n = 20 Patients with T2DM controlled by oral medication	1400 mg of bilberry extract (25% anthocyanidins) Once per day for 4 weeks	Reduced glycated hemoglobin No change in other parameters	No	-
Canter and Ernst 2004 Night vision	Systematic review	All clinical studies before 2004	-	4 out of 5 randomized controlled trials found no significant effect Other studies report improvements in some of the measured parameters	-	Trials without placebo control were
Scharrer and Ober 1981 Diabetic retinopathy	Open-label, placebo- controlled trial	n = 31 Patients with diabetic retinopathy	600 mg of unspecified bilberry fruit extract + 30 mg beta-carotene or placebo Daily for 4 weeks	Reduced vascular permeability Remission of changes of retinal vessels	n.a.	-

Perossini et al. 1987 Retinopathy (diabetic and hypertensive)	Randomized, double blind, placebo-controlled trial	n = 36 Patients with retinopathy	320 mg of a bilberry extract containing 25% anthocyanidins or placebo Daily for 4 weeks	77 - 90% improvement (compared to placebo) in ophthalmoscopic and fluoro-angiographic anomalies	n.a.	No clear information about statistical analysis
Kim et al. 2008 Diabetic retinopathy	Prospective multicenter clinical trial	n = 88 Patients with diabetic retinopathy	Unspecified bilberry fruit extract 510 mg Daily over one year	Gradual improvement in contrast sensitivity Other parameters unchanged	Yes	Publication in Korean language
Steigerwalt et al. 2010 Elevated intraocular pressure	Open-label pilot trial	n = 79 Patients with elevated intra-ocular pressure	Dietary supplementation with Mirtogenol®: a combination of two phenolic extracts: 80 mg from bilberry (Mirtoselect®) (standardized to 36% anthocyanins) and 40 mg French maritime pine bark (Pycnogenol®) (standardized to 70% procyanidins), or Latanoprost eye drops, or combination Once daily for 24 weeks	Intra-ocular pressure decrease took 4 weeks in latanoprost group and 24 weeks in Mirtogenol group, after which they reached the same levels Comparable effects for gradually increasing central artery blood flow between groups	Yes	-

Anderson et al. 2011	Placebo-controlled trial	n = 22	160 mg of (unspecified) bilberry nutraceutical or placebo	Ocular Surface Disease Index was improved compared to placebo	Yes	Poster presentation with incomplete data
Dry eye symptoms		Self-reported dry eye symptoms	Daily for 30 days	Tears break-up time and Schirmer's test not significant		
Kosehira et al. 2020	Double-blind, randomized, placebo-controlled trial	n = 109	240 mg standardized bilberry extract (35% anthocyanins) or placebo	Improvement in the tonic accommodation of the ciliary muscle during near-vision tasks on display terminal	Yes	-
Ocular fatigue			Daily for 12 weeks			
Kamiya et al. 2013	Prospective, randomized, placebo-controlled, cross-over trial	n = 30	400 mg of yeast-fermented bilberry fruit extract or placebo	Improvement in accommodation and mesopic contrast sensitivity	Yes	-
Myopia		With myopia, otherwise healthy	Daily for 4 weeks	Other measured parameters unchanged		
Arevström et al. 2019	Open-label randomized controlled trial	n = 50	Freeze-dried bilberry powder (40 g per day) taken with meals or no intervention	hs-CRP unchanged between groups	Yes	-
Dyslipidemia and inflammation after myocardial infarct		Patients directly after myocardial infarct	Daily for 8 weeks	Oxidized LDL improved in bilberry group Improvement in a 6-minute walking test in bilberry group		

Bryl-Górecka et al. 2020	Open-label randomized controlled trial	n = 50 Patients directly after myocardial infarct	Freeze-dried bilberry powder (40 g per day) taken with meals or no intervention Daily for 8 weeks	Improvement in the blood profile Reduced endothelial vesiculation	Yes	-
Dyslipidemia and inflammation after myocardial infarct						
Qin et al., 2009	Double-blind, randomized, placebo-controlled trial	n = 120 Patients with dyslipidemia	320 mg anthocyanin supplements (purified bilberry and blackcurrant anthocyanins) Daily for 12 weeks	Decreased LDL and increased HDL plasma concentrations Increased cellular cholesterol efflux to serum No change in fasting glucose levels	Yes	-
Dyslipidemia						
Zhu et al., 2013	Randomized, placebo-controlled trial	n = 150 Patients with hypercholesterolemia	320 mg anthocyanin supplements (purified bilberry and blackcurrant anthocyanins) Daily for 24 weeks	Decreased CRP and IL-1b in plasma Decreased LDL and increased HDL plasma levels Fasting glucose levels unchanged	Yes	-
Dyslipidemia						
Habanova et al. 2016	Pre-post intervention study	n = 65 Generally healthy subjects	150 g of frozen bilberries 3 times a week for 6 weeks	Decrease in total cholesterol, LDL and triglycerides, and a favorable increase in HDL	Yes	Lack of control group
Dyslipidemia						

Thomasset et al. 2009	Open-label pilot trial	n = 25	Standardized anthocyanin-rich bilberry fruit extract Mirtocyan (1400, 2800 or 5600 mg)	Tumor cell proliferation decreased by 7%	Yes	Lack of control group
Colorectal cancer		Colorectal cancer patients scheduled for surgery	Daily for 7 days before surgery	Apoptotic index increased from 3.6% to 5.3%, regardless of the dosage		
Tadić et al. 2021	Placebo-controlled trial	n = 25	Cream which incorporated both the oil from bilberry seeds and the extract from bilberry leaves or placebo cream	Increase of the hydration of stratum corneum	Yes	-
Skin hydration			Daily for 30 days	Improved skin barrier function		