

Clinical Studies on Bilberry (*Vaccinium myrtillus*)

Ocular (night/day vision, retinopathy, etc.)

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Muth <i>et al.</i> , 2000	Night vision and contrast sensitivity	DB, PC n=15 males, all except 2 with good vision (ages 25–47 years)	90 days	160 mg, 3x/day (25% anthocyanosides)	Not specified	Study failed to find an effect of bilberry on night visual acuity (VA) ($p>0.15$) or night contrast sensitivity (CS) ($p>0.35$) for a high dose of bilberry taken for a significant duration. Hence, this study casts doubt on the proposition that bilberry supplementation, in forms currently available and in doses recommended, improves night VA or night CS.
Perossini <i>et al.</i> , 1987	Retinopathy (patients with diabetic retinopathy, n=35; hypertensive vascular retinopathy n=5) (stage IV excluded)	DB, PC n=40	30 days	160 mg 2x/day	Tegens™ 160 mg capsule	Improved ophthalmoscopic and angiographic patterns were demonstrated in 77–90% of the patients. Concluded to be an effective and safe treatment of diabetic and hypertensive retinopathy. (No statistics reported.)
Reposi <i>et al.</i> , 1987	Early diabetic or hypertensive retinopathy	DB, PC n=40	1 year	160 mg 2x/day	Tegens™ 160 mg capsule	Improvements were observed in 50% (vs. 20% in control group). Patients with exudate deposits improved in 15% of the cases (vs. 10% control group). A lower percentage of patients (10% vs. 15%) with hard exudates worsened.
Vannini <i>et al.</i> , 1986	Nighttime vision in healthy subjects	DB, PC n=40 (mean age 25.5 years)	2 hours	240 mg/single dose	Myrtocyan®	Improved pupillary photomotor response, most evident 2 hours after administration; decreased total pupillary contraction time ($p<0.05$); increased pupillary contraction ($p<0.05$).
Orsucci <i>et al.</i> , 1983	Diabetic retinopathy in Type II diabetes mellitus	O n=10	6 months	80 mg 3x/day	Tegens™ 80 mg capsule	Improvement in retinal picture; reduction or disappearance of hemorrhages.
Scharrer and Ober, 1981	Diabetic retinopathy	O n=31: 2 with hemorrhages due to anticoagulants, 4 with arterial sclerosis with hemorrhages of the retina, 20 with diabetic retinopathy (Keith Wagner Stages II and III)	4 weeks	Two, 80 mg capsules 3x/day	Difrarel 100™ capsule	Reduced vascular permeability during treatment. Mitigated changes of retinal vessels and prevented alterations in the visual field. (No statistics reported.)

KEY: C – controlled, CC – case-control, CH – cohort, CI – confidence interval, Cm – comparison, CO – crossover, CS – cross-sectional, DB – double-blind, E – epidemiological, LC – longitudinal cohort, MA – meta-analysis, MC – multi-center, n – number of patients, O – open, OB – observational, OL – open label, OR – odds ratio, P – prospective, PB – patient-blind, PC – placebo-controlled, PG – parallel group, PS – pilot study, R – randomized, RC – reference-controlled, RCS – retrospective cross-sectional, RS – retrospective, S – surveillance, SB – single-blind, SC – single-center, U – uncontrolled, UP – unpublished, VC – vehicle-controlled.

Clinical Studies on Bilberry (*Vaccinium myrtillus*) (cont.)

Vascular (micro and peripheral circulation, venous disorders/insufficiencies, etc.)

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Gatta <i>et al.</i> , 1988	Venous insufficiency (various causes)	SB, PC n=60 (mean age 44 years)	30 days	160 mg 3x/day	Tegens™ 160	Decreased severity of edema, sensations of pressure, paresthesia, and cramp-like pain were observed in the bilberry group (p<0.01 for all outcomes).
Gentile <i>et al.</i> , 1987, unpublished	Preventive bleeding due to otorhinolaryngological surgery	SB, PC n=181 (ages 3–76 years)	10 days prior to surgery	160–320 mg/day dosed according to clinical symptoms	Myrtocyan®	Reduced intra- and postoperative bleeding and prevented subsequent hemorrhaging when treated with bilberry before surgery. (No statistics reported.)
Teglio, 1987	Venous insufficiency symptoms in pregnant women	n=51 (mean period of pregnancy 27 weeks) (mean age 30 years)	3 months	160, 240, 360 mg/day dosed according to symptom severity	Tegens™	Reduction in symptoms of pruritus (94.6%), paresthesia (87.5%), cramps (80.1%), pain (78.5%), exhaustion and heaviness (60%), and hemorrhoidal symptoms (75.5–83%).
Allegra <i>et al.</i> , 1982	Peripheral vascular disorder	DB, PC n=47	30 days	480 mg/day	Myrtocyan®	Decreased edema, paresthesia, and pain while increasing joint mobility in patients with Raynaud's disease.
Grismondi <i>et al.</i> , 1981	Phlebopathies induced by pregnancy	n=54 (ages 24–37 years)	60–90 days	320 mg/day started in 6th month of pregnancy	Myrtocyan®	Improvements in burning and itching (p<0.001), heaviness (p<0.001), and pain (p<0.001) were observed in bilberry users, as well as in diurnal and nocturnal cramps (p<0.01), and a reduction in edema and in capillary fragility (p<0.001).
Ghiringhelli <i>et al.</i> , 1977	Varicose veins of lower limbs	O n=47 (mean age 45 years)	30 days	480 mg/day	Myrtocyan®	Bilberry significantly improved symptoms such as limb edema and dyschromic skin phenomena as well as heaviness, paresthesia, and pain.
Mian <i>et al.</i> , 1977	Ulcerative dermatitis due to post thrombophlebitis	O n=15	10 days	240 mg/day	Myrtocyan®	Bilberry reduced the protein content of the exudate produced by venous occlusion and stasis, a symptom of post-thrombotic and varicose veins stasis. (No statistics reported.)

Other

Author/Year	Subject	Design	Duration	Dosage	Preparation	Results/Conclusion
Colombo, 1985	Chronic dysmenorrhea	DB, PC n=30	3 days prior to and during the cycle	320 mg/day	Myrtocyan® capsule	Bilberry significantly reduced dysmenorrhea symptoms including headache, heaviness of lower limbs, mammary tension, sickness and emesis, and pelvic and lumbosacral pain by the second month.
Cerutti <i>et al.</i> , 1984	Side effects of copper IUD's	n=48	6 months	Two, 160 mg capsules 2x/day	Myrtocyan®	Decreased incidents of spotting and hyperpoly-menorrhea were observed in bilberry users.

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