



Enzogenol® - Blood Pressure Reduction

Enzogenol® is a unique polyphenol complex extracted from New Zealand grown *pinus radiata* bark. The broad spectrum of flavonoid compounds including the very high content of proanthocyanidins are the basis for the many health benefits Enzogenol® can deliver.

Clinical studies have shown that Enzogenol® lowers blood pressure.

CLINICAL STUDY I.

PHYTOTHERAPY RESEARCH
Phytother Res. 17, 486-494 (2003)
Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/ptr.1181

Pilot Study on the Clinical Effects of Dietary Supplementation With Enzogenol®, A Flavonoid Extract of Pine Bark and Vitamin C

Brett Shanahan, Chris Strey, Russell Scott, Zaruhi Morrison and Steven Giese

- Open label study
- 24 subjects, age 55-75
- 12 weeks of supplementation:
 - 480 mg Enzogenol + 240 mg Vitamin C daily

Evidence for the effect on systolic blood pressure

Enzogenol® significantly reduced systolic blood pressure by 7 mm Hg after 6 weeks of supplementation in this open label study.

Time Point	Mean Systolic Blood Pressure (mm Hg)	Significance
Baseline	~130	
6 weeks	~123	p < 0.01
12 weeks	~122	p < 0.01

Two further double-blind, controlled clinical studies verified the finding!

CLINICAL STUDIES II & III: randomised, double-blind, vitamin C-controlled

44 smokers, age 40-67, 12 week supplementation <u>Treatment:</u> 480 mg Enzogenol + 60 mg Vitamin C daily <u>Control:</u> 60 mg Vitamin C daily	42 subjects, age 50-65, 5 week supplementation <u>Treatment:</u> 960 mg Enzogenol + 120 mg Vitamin C daily <u>Control:</u> 120 mg Vitamin C daily
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Meta-Analysis of blood pressure effects from two double-blind, vitamin C-controlled clinical studies proves that Enzogenol® lowers systolic blood pressure.

Study	Time Point	Group	Change (mm HG)	P-value
Study II	6 wks	Enzogenol + Vitamin C	~-2	0.09
		Vitamin C only	~3	
Study II	12 wks	Enzogenol + Vitamin C	~-3	0.12
		Vitamin C only	~1	
Study III	+ht	Enzogenol + Vitamin C	~-5	0.24
		Vitamin C only	~0	
Study III	-ht	Enzogenol + Vitamin C	~-7	0.21
		Vitamin C only	~-1	
Meta-Analysis II & III combined	6 wks	Enzogenol + Vitamin C	~-3	0.048
		Vitamin C only	~2	
Meta-Analysis II & III combined	12 wks	Enzogenol + Vitamin C	~-4	0.056
		Vitamin C only	~1	
Meta-Analysis II & III combined	6 wks	Enzogenol + Vitamin C	~-2	0.03
		Vitamin C only	~1	
Meta-Analysis II & III combined	12 wks	Enzogenol + Vitamin C	~-1	0.04
		Vitamin C only	~0	

With these results the effect of Enzogenol® to lower systolic blood pressure has been well established adding to the list of health benefits that Enzogenol® can deliver for cardiovascular health.

