

Influence of oral Collagen Peptide intake on relevant skin parameters such as Skin hydration, elasticity and roughness

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Background:

With increasing age, various factors support the decrease of the dermal extracellular matrix. Topical cosmetic treatments are well established to slow down the aging of the skin. However, in the recent years, there is an increased focus on dietary supplements with collagen peptides that are intended to improve skin condition.

Objective:

Orally taken collagen peptides are believed to have a stimulatory effect on dermal extracellular matrix metabolism, resulting in positive effects on skin physiology over time. In this study, for the first time, we measure the impact of specific collagen peptides ([HC]-Collagen-Complex® in ELASTEN®) ingestion on different parameters of skin physiology, such as cutometry, corneometry and roughness, in four different areas within one population.

Materials & Methods:

In this randomized, non-interventional clinical trial, 24 skin-healthy subjects (12 premenopausal and 12 postmenopausal, age 45-60 years) received the test product ELASTEN® (with the daily amount of 2.5 g collagen peptides, 666 mg acerola fruit extract, 80 mg vitamin C, 3 mg zinc, 2.3 mg vitamin E (from natural mixed tocopherols), and 50 µg biotin) for 8 weeks.

Skin elasticity (Cutometer, R0, R2, R5), skin hydration (Corneometer) and skin roughness (Visioscan) were determined at different skin regions (lateral region of the cheekbone, décolleté, forearm, dorsal region of the thigh).

Results:

Results show a highly-significant increase in skin elasticity for the parameters R0, R2 and R5 after 4 and 8 weeks of intervention. Skin hydration significantly improved after 4 weeks of intervention while skin roughness improved without reaching statistical significance after 8 weeks (not shown).

Table 1: Changes in skin elasticity (R0, R2, R5) after 8 weeks of intervention

	R0		R2		R5	
	Δ (8 weeks)	p	Δ (8 weeks)	p	Δ (8 weeks)	p
Cheek	-0,16	0.001	0,09	0.002	0,16	≤0.001
Décolleté	-0,29	≤0.001	0,04	0.125	0,40	≤0.001
Forearm	-0,48	≤0.001	0,06	0.003	0,22	≤0.001
Thigh	-0,24	≤0.001	0,04	0.036	0,39	≤0.001

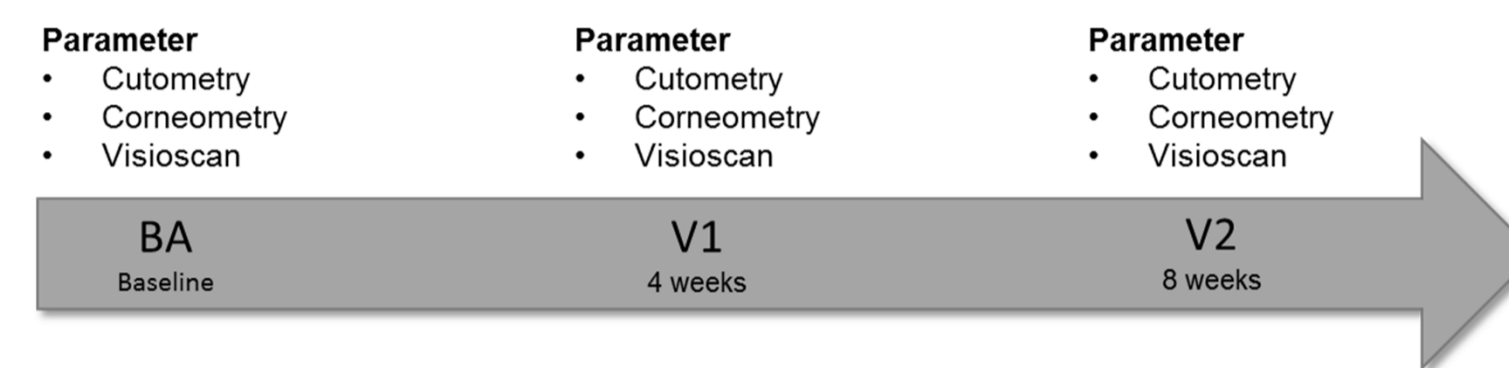


Fig 1: Study design and parameter assessment

Skin elasticity (R0)

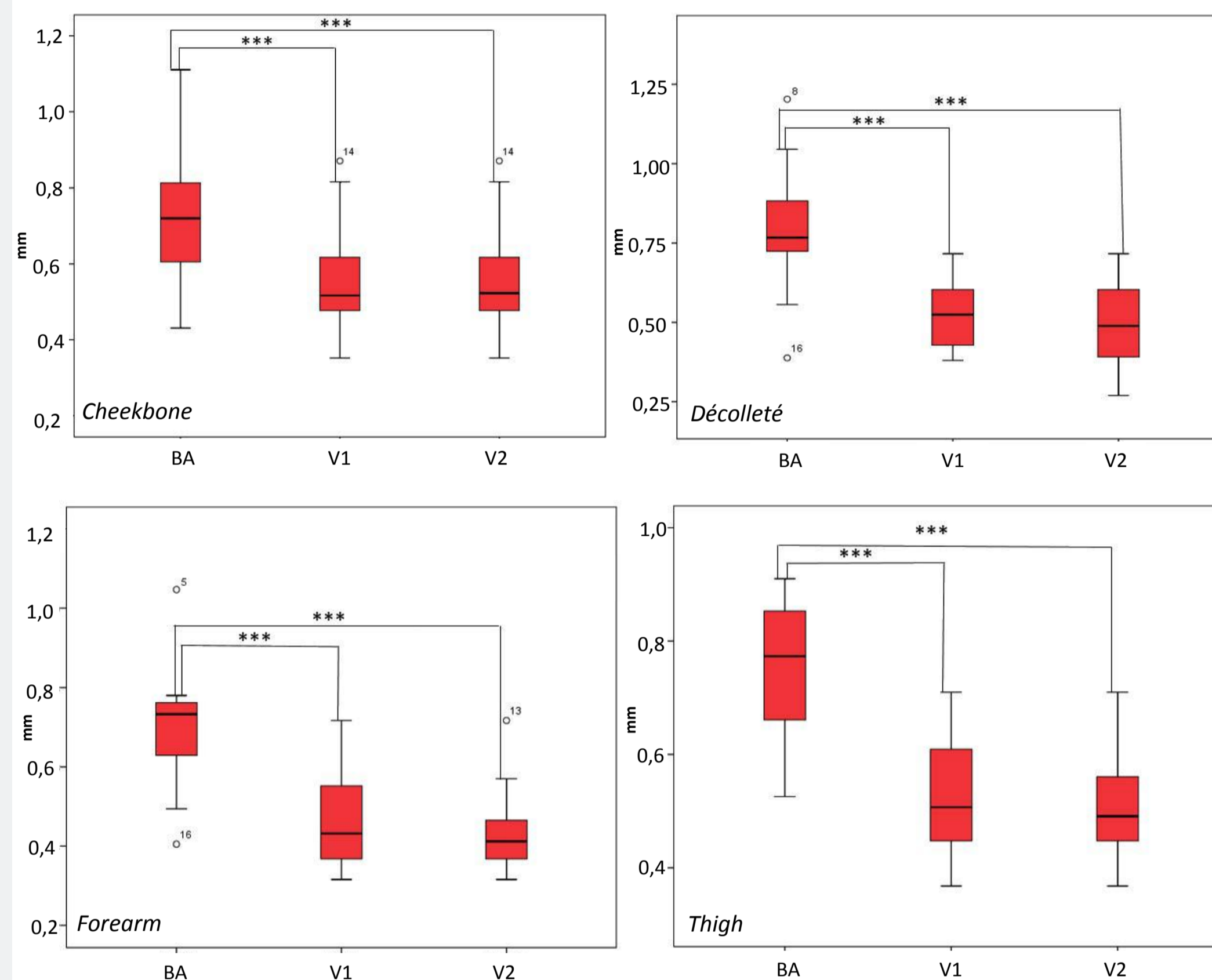


Fig 2: Skin elasticity (R0) significantly improved after 4 and 8 weeks of intervention

Skin elasticity (R2)

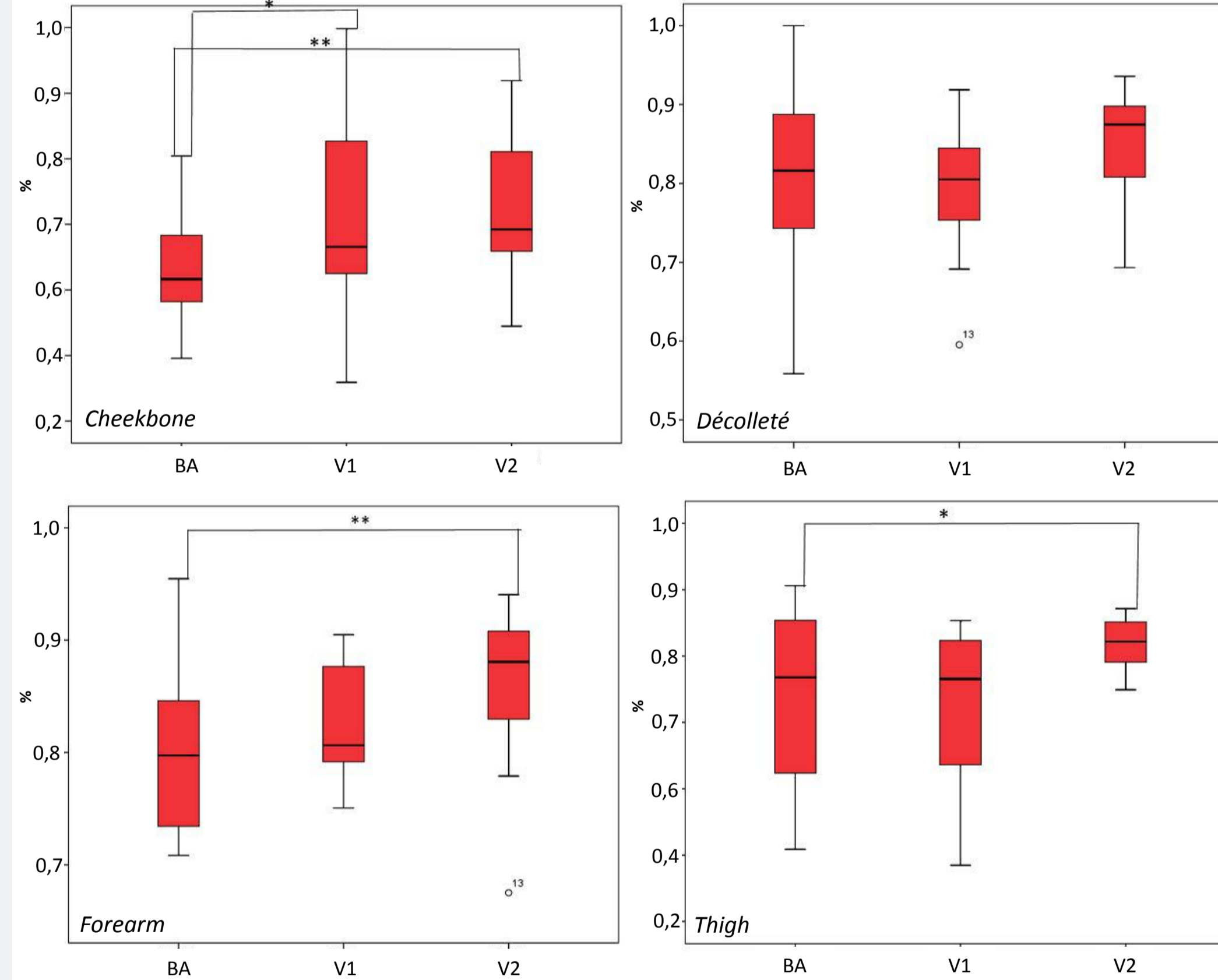


Fig 4: Skin elasticity (R2) significantly improved after 4 and 8 weeks of intervention

Skin elasticity (R5)

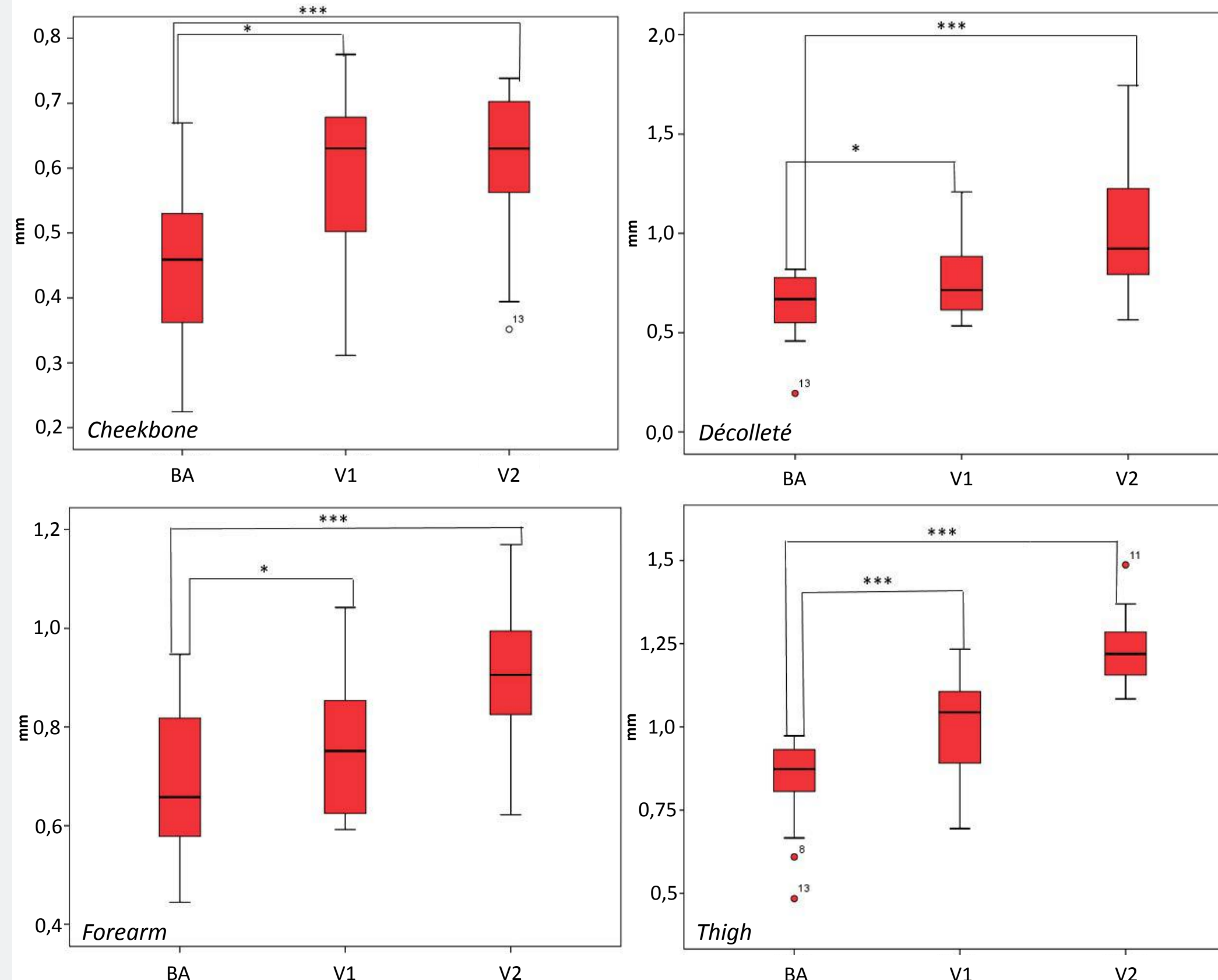


Fig 5: Skin elasticity (R5) significantly improved after 4 and 8 weeks of intervention

Conclusions:

The intake of special bioactive collagen peptides show a systemic effect on skin elasticity, hydration and roughness. Further placebo-controlled, double-blind trials will have to investigate the impact of oral collagen-peptides on skin appearance and physiology.

Skin hydration

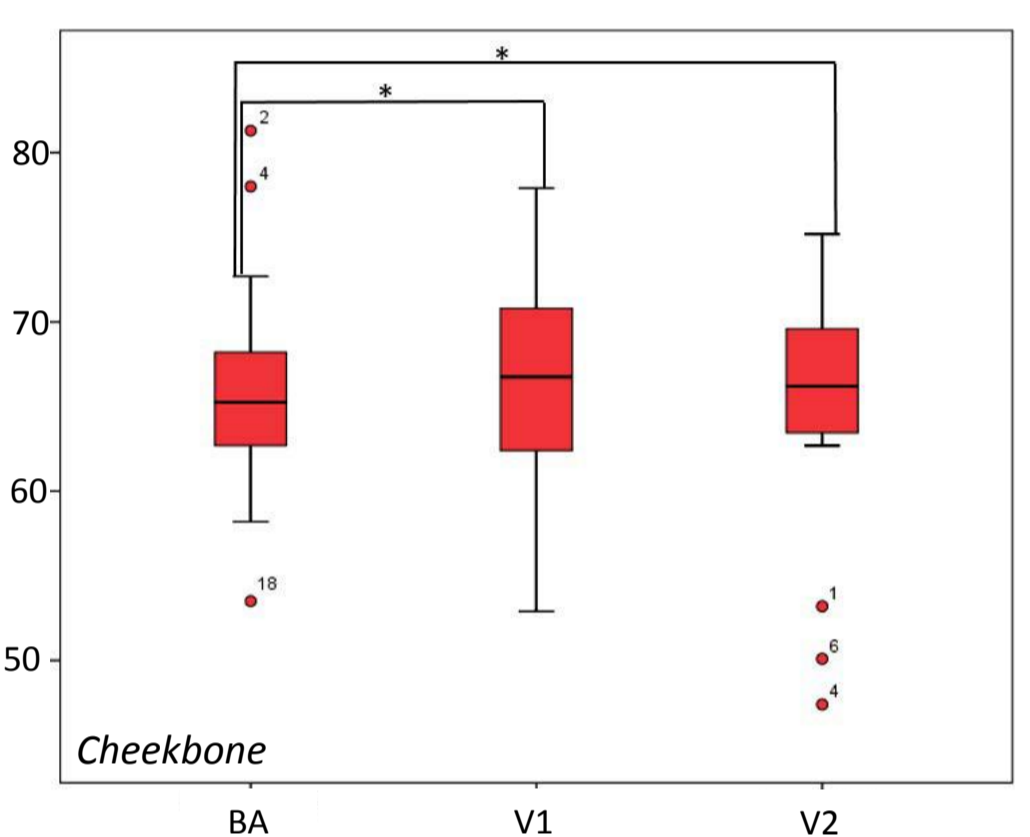


Fig 6: Skin hydration significantly improved after 4 and 8 weeks of intervention

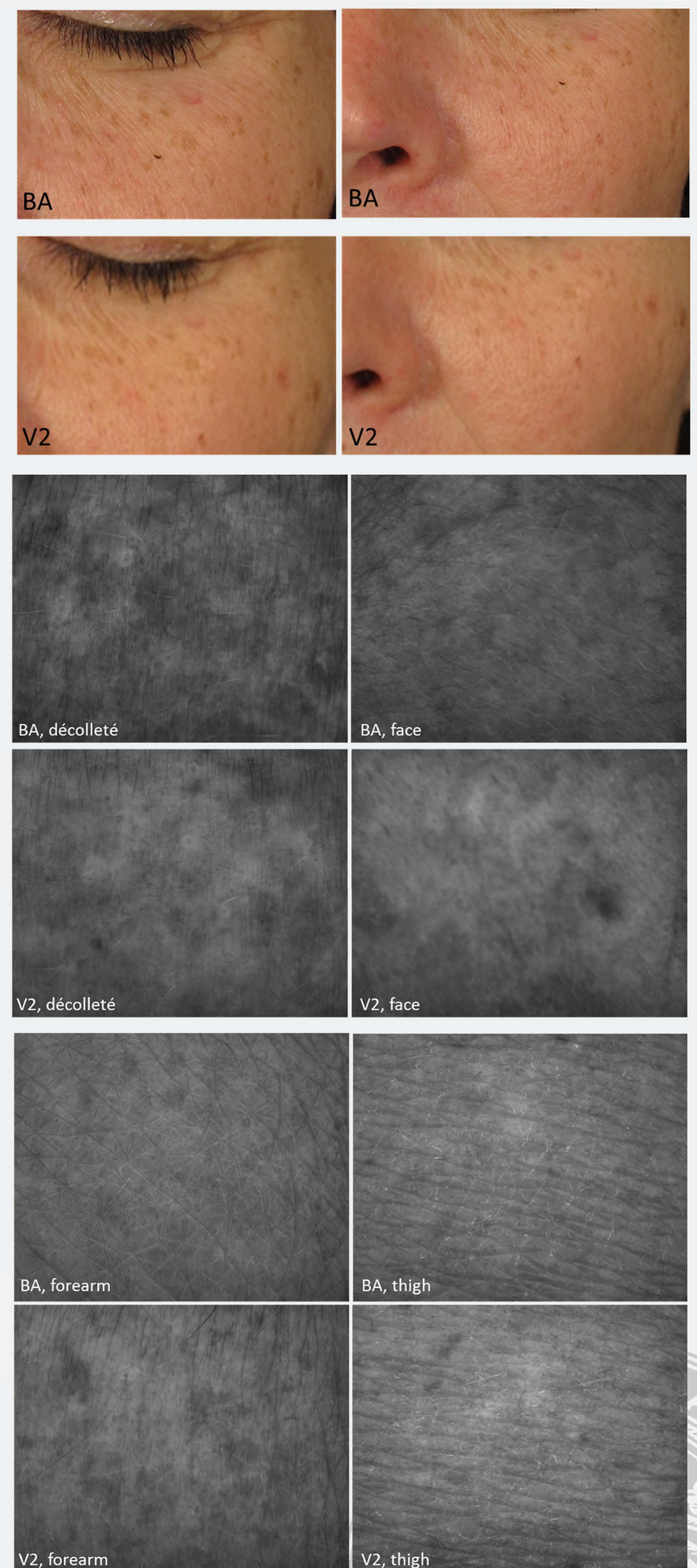


Fig 7: Visioscans before and after 8 weeks of intervention