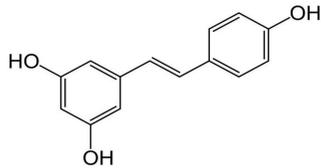


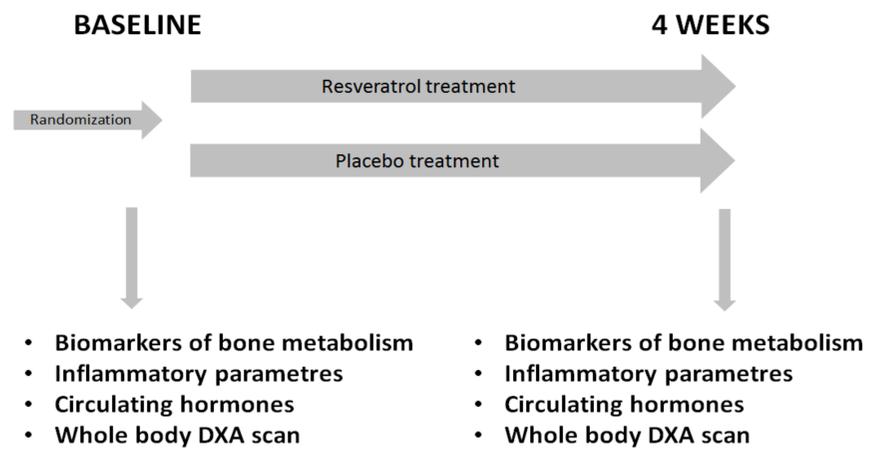
BACKGROUND

- Resveratrol (RSV) is a dietary supplement found in red wine
- RSV reduces OVX- and immobilization-induced bone loss in rodents
- RSV has anti-inflammatory effects and inhibits RANKL-induced osteoclastogenesis
- RSV stimulates proliferation and differentiation dose-dependently in hMSC-TERT cells, ST2 cells from murine bone marrow, and Human Bone Marrow-derived Mesenchymal Stem Cells (hBMSCs) from one sample of fetal bone marrow
- No human data published



METHODS

- Randomized, placebo-controlled, double-blind study
- 24 obese (BMI: 34.2±0.7) non-diabetic men were randomly assigned to either 500mg RSV or placebo three times daily for 4 weeks



AIM

- The aim of this study was to investigate if RSV impacts bone metabolism in obese non-diabetic men, who participated in a RCT originally designed to study RSVs effects on sugar- and fat- metabolism

RESULTS

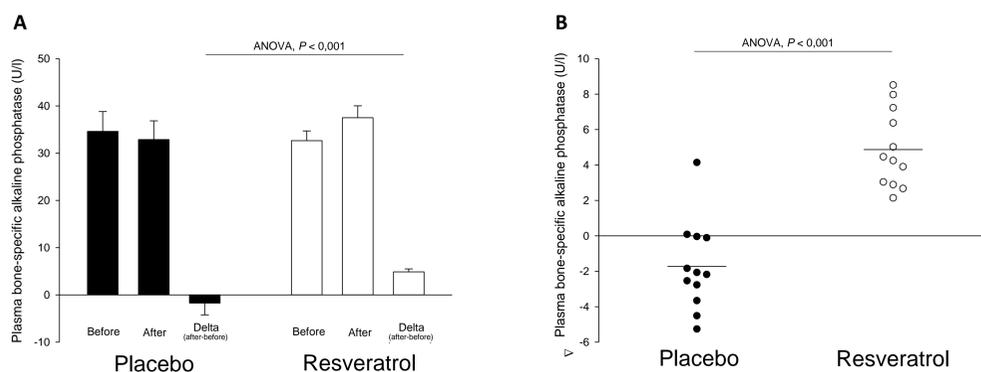


Figure 1 | Bone-specific alkaline phosphatase. Plasma levels of bone specific alkaline phosphatase before and after 4 weeks of resveratrol or placebo supplementation. **A:** Absolute changes. Results are presented as group means ± SEM. **B:** Individual delta changes (after-before). *P*-values reflect between-group differences (two way repeated measures ANOVA)

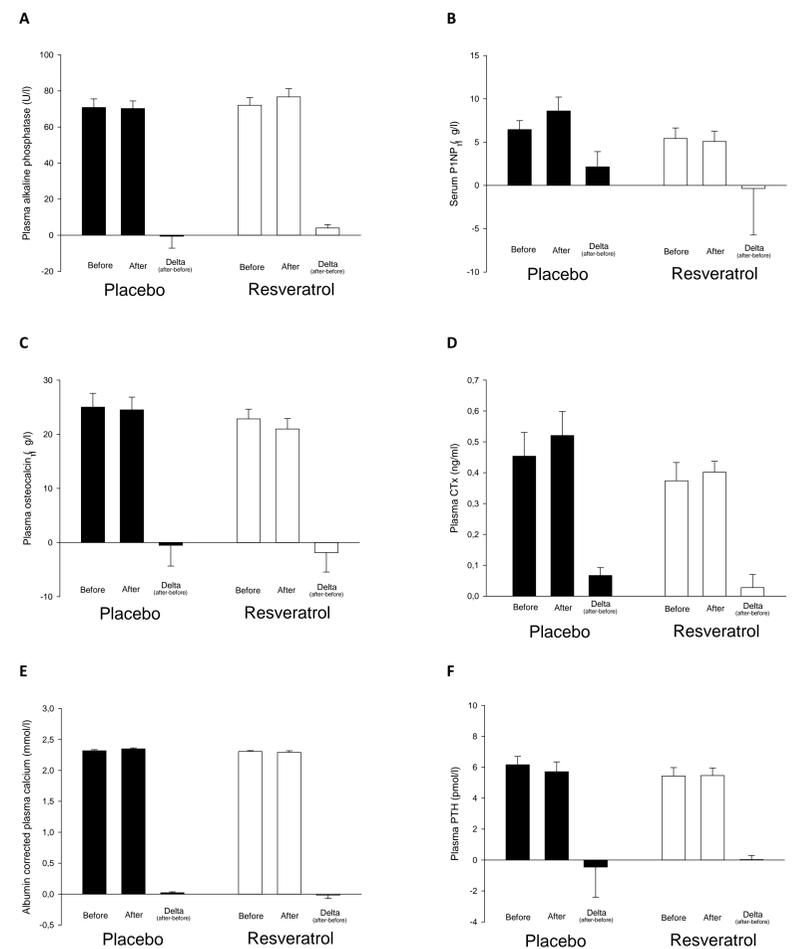


Table 1 | Circulating inflammatory markers, hormones and plasma biochemistry

	PLACEBO		RESVERATROL		ANOVA <i>P</i> -value
	Before	After	Before	After	
hsCRP (ng/ml)	2.86 ± 0.39	4.04 ± 1.01	4.04 ± 0.73	4.58 ± 0.91	0.63
IL6 (pg/ml)	3.21 ± 0.96	3.59 ± 0.72	4.84 ± 1.07	4.50 ± 0.77	0.60
TNFα (pg/ml)	4.69 ± 0.79	5.00 ± 1.70	4.24 ± 0.84	4.14 ± 1.00	0.82
MCP1 (pg/ml)	140.1 ± 7.5	134.2 ± 8.4	159.5 ± 10.7	178.4 ± 15.9	0.13
Leucocytes (10 ⁹ /l)	5.98 ± 0.45	6.71 ± 0.58	6.23 ± 0.48	5.87 ± 0.35	0.94
Leptin (ng/ml)	19.47 ± 3.95	18.00 ± 1.98	18.80 ± 3.54	22.97 ± 6.65	0.32
Adiponectin (mg/l)	6.09 ± 0.65	6.65 ± 0.71	6.71 ± 0.74	6.93 ± 0.74	0.17
ALT (U/l)	48.5 ± 5.4	54.6 ± 6.7	47.7 ± 10.2	46.9 ± 8.7	0.10

CONCLUSION

- RSV increased bone-specific alkaline phosphatase (BAP) significantly after 4 weeks of treatment as compared with placebo (*p* < 0.001)
- No difference was found in other formation markers (P1NP and osteocalcin) or the resorption marker CTX
- Calcium homeostasis was not affected by RSV treatment, and therefore do not explain the isolated increase in BAP
- Circulating BAP is mainly cleared by the liver so the increase could potentially be caused by hepatic impairment, but since alanine transaminase (ALT) was normal and unchanged it seems unlikely
- RSV may influence bone metabolism, but whether this represents a beneficial effect or rather impair the mineralization process remains unsolved
- A study designed especially to examine the effect of RSV on human bone metabolism is needed and is currently being conducted (www.LIRMOI.com)