

# ARG72PRO POLYMORPHISM OF *TP53* GENE IS RELATED TO CARDIOVASCULAR RISK FACTORS AMONG CROATIAN SENESCENT MEN

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## ○ BACKGROUND

The p53 tumor suppressor protein, often termed the genome's guardian, has a critical role in cell cycle, apoptosis, cell senescence, DNA repair and metabolism. Animal and human studies have identified *TP53* gene as one of the most important candidate genes involved in longevity.

## ○ GOALS

The aim of this study was to test the association between the Arg72Pro polymorphism of *TP53* gene and indicators of biological age in people of very old age

## ○ RESULTS AND DISCUSSION

In univariate analyses Arg/Arg was related with higher body mass (skinfold thickness, upper arm and waist circumferences) and with higher fasting blood glucose. T-test, ANOVA/PostHoc test results showed a significant positive association of Arg/Arg genotype with anthropometric nutritional status variables as well as with fasting glucose level (cardiovascular risk factors) in elderly men but not in women. Sex-specific principal component analysis encompassing 40 variables extracted four significant factors, among which the first factor represented body mass and composition while the second one represented general health. Although the two factors had almost identical structure in both sexes, the t-test ( $p = 0.031$ ), ANOVA ( $p = 0.046$ ) and PostHoc test ( $p=0.018$ ) revealed significant association of Arg72Pro polymorphism only with the factor of general health in men, indicating that Arg/Arg was the risk and Arg/Pro was the protective genotype.

## ○ CONCLUSION

Our results indicate the role of Arg72Pro polymorphism in health-related traits in men of very old age, but its role in longevity remains to be elucidated.

## ○ PARTICIPANTS

324 oldest old (85-101 yrs) people living in retirement homes in Zagreb, Croatia

## ○ METHODS

- Noninvasive biometric measurements (anthropometry, blood pressure measurement, ultrasound bone densitometry)
- Common biochemical blood tests (lipid, glycemic and protein status)
- Self-rated health interview
- Genotyping

**Table 1. Arg72Pro: review of significant differences in variance of qualitative variables between Arg/Arg, Arg/Pro and Pro/Pro genotypes (ANOVA,  $p < 0,05$ )**

variable	MEN	WOMEN p	Higher variable values	Lower variable values
BMI (Body Mass Index)			ArgArg	
KN subsk (subscapular skinfold)	0,042		ArgArg	
KN sum	0,048		ArgArg	
Hipp circumferences	0,042		ArgArg	
Upper arm circumferences	0,014		ArgArg	
Fasting glucose level	0,043		ArgArg	
UIBC (Unsaturated Iron Binding capacity)		0,047		ArgArg
Bone mineral density_right foot			ArgPro	ProPro

**Table 2. p53 (Arg72Pro): T-test for Factor 2 („General health“) in men**

Group	Genotype	N	F2 X	F2 SD	p-value
1	ArgArg	42	0,2247	0,9675	
2	ArgPro, ProPro	39	-0,2584	1,0086	<b>0,031</b>

