



Exploratory Study to Assess Association of Skin Aging with Plasma Isoprostane Levels in Healthy Middle-aged Japanese Women

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BACKGROUND

- One of the central mechanisms of aging is hypothesized to be oxidative stress.
- To date, quantification of oxidative stress in human organ systems has been difficult.

OBJECTIVE

- Exploratory study determine if human skin aging severity associates with plasma isoprostane levels, specifically PGF2a, 8-iso-PGF2a while controlling for covariates

METHODS

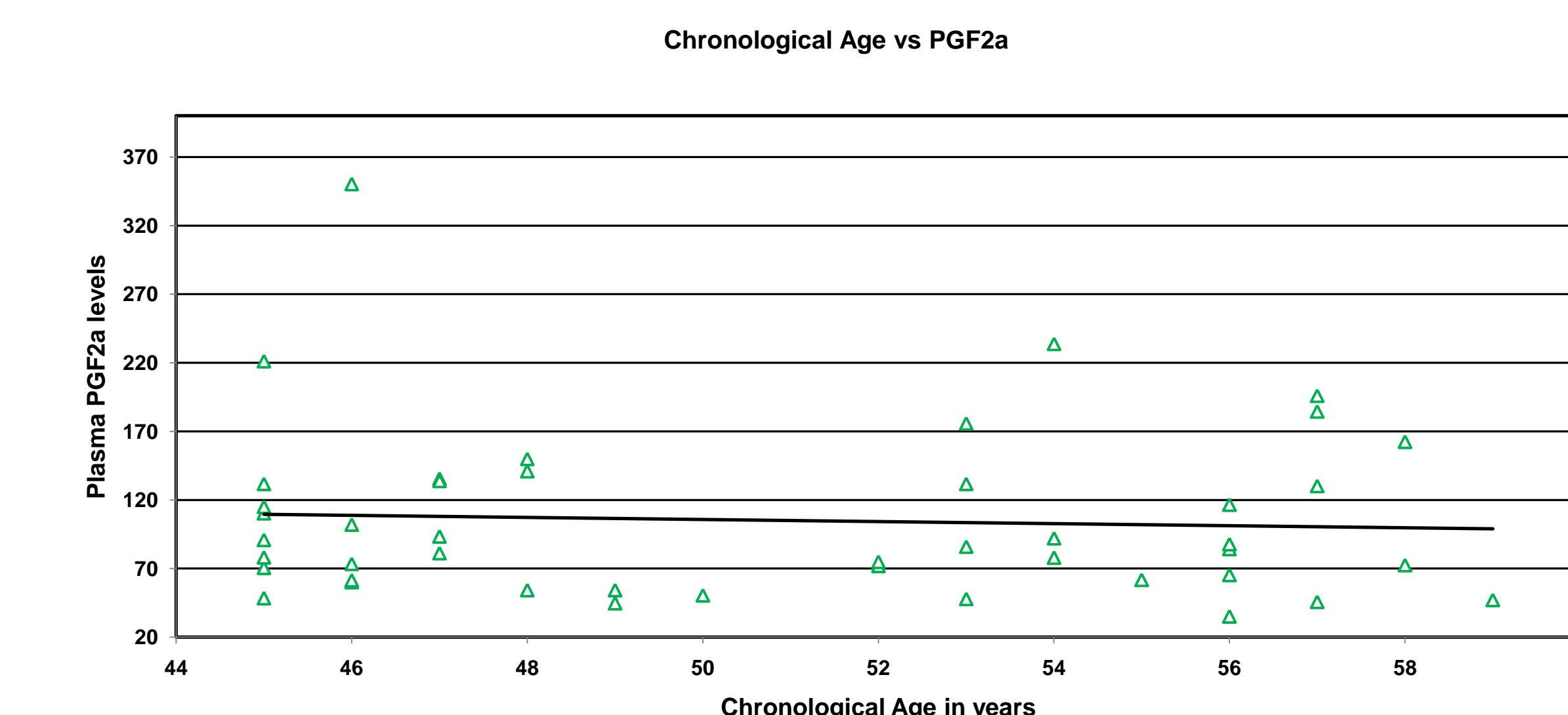
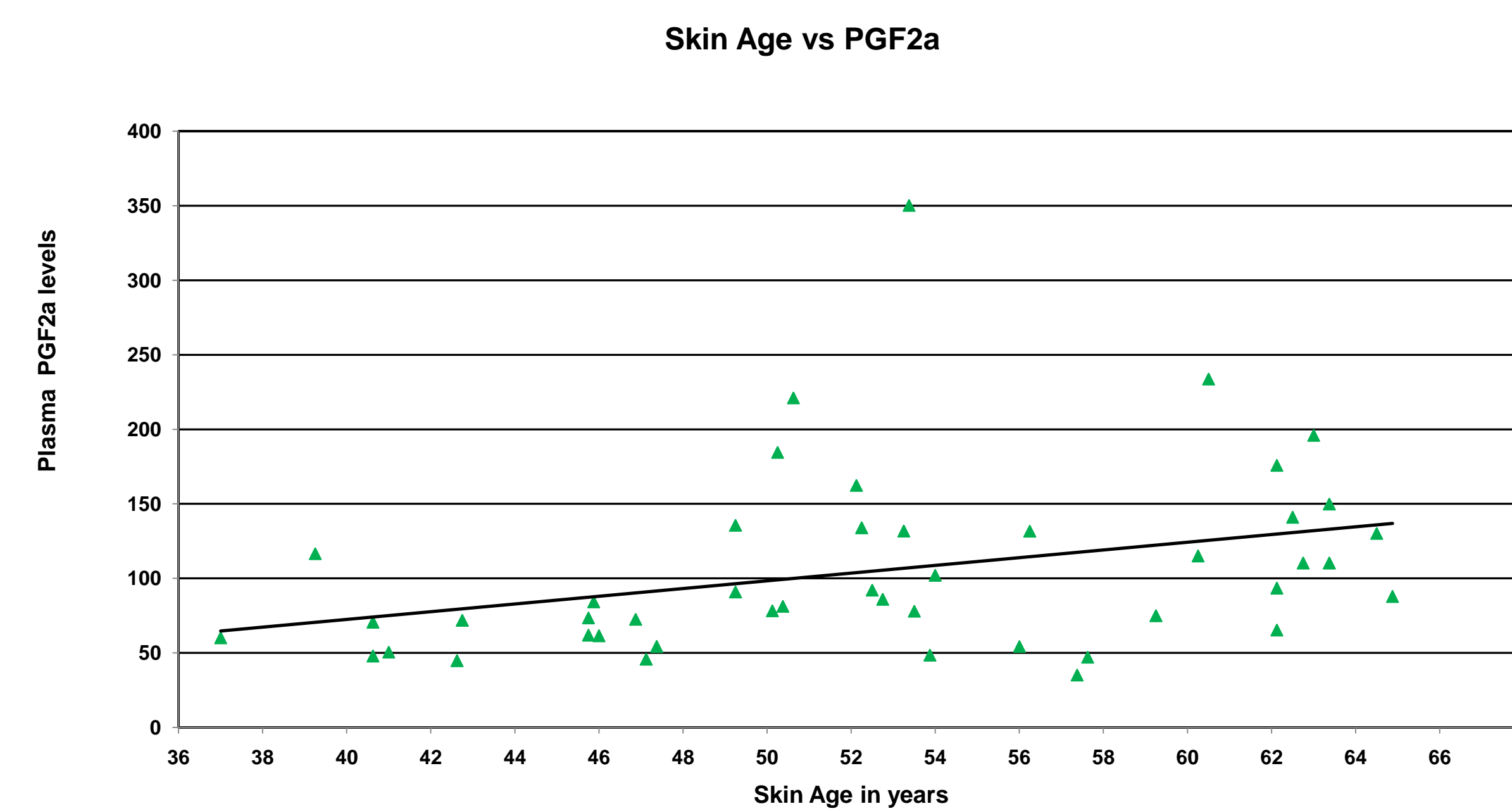
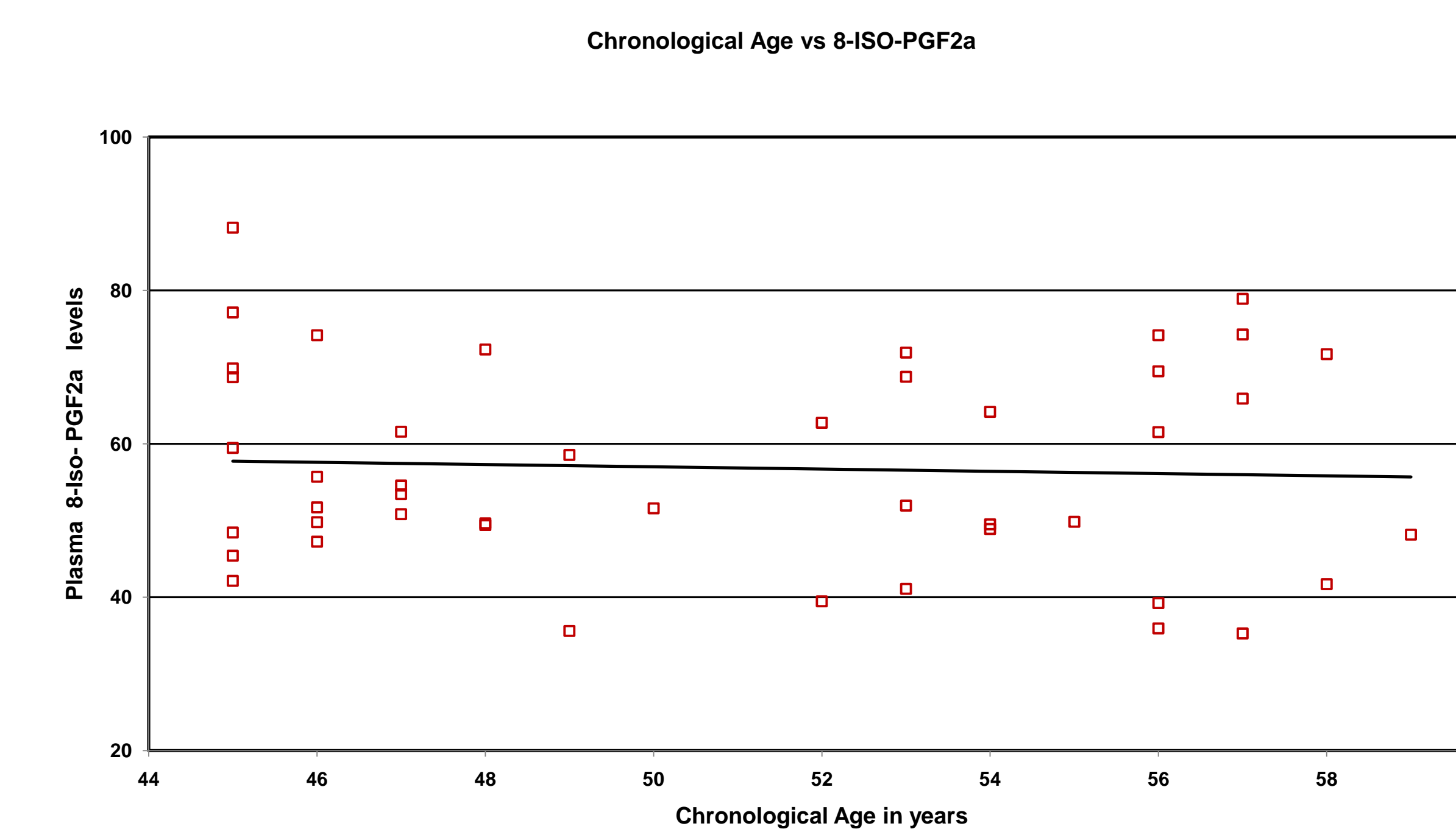
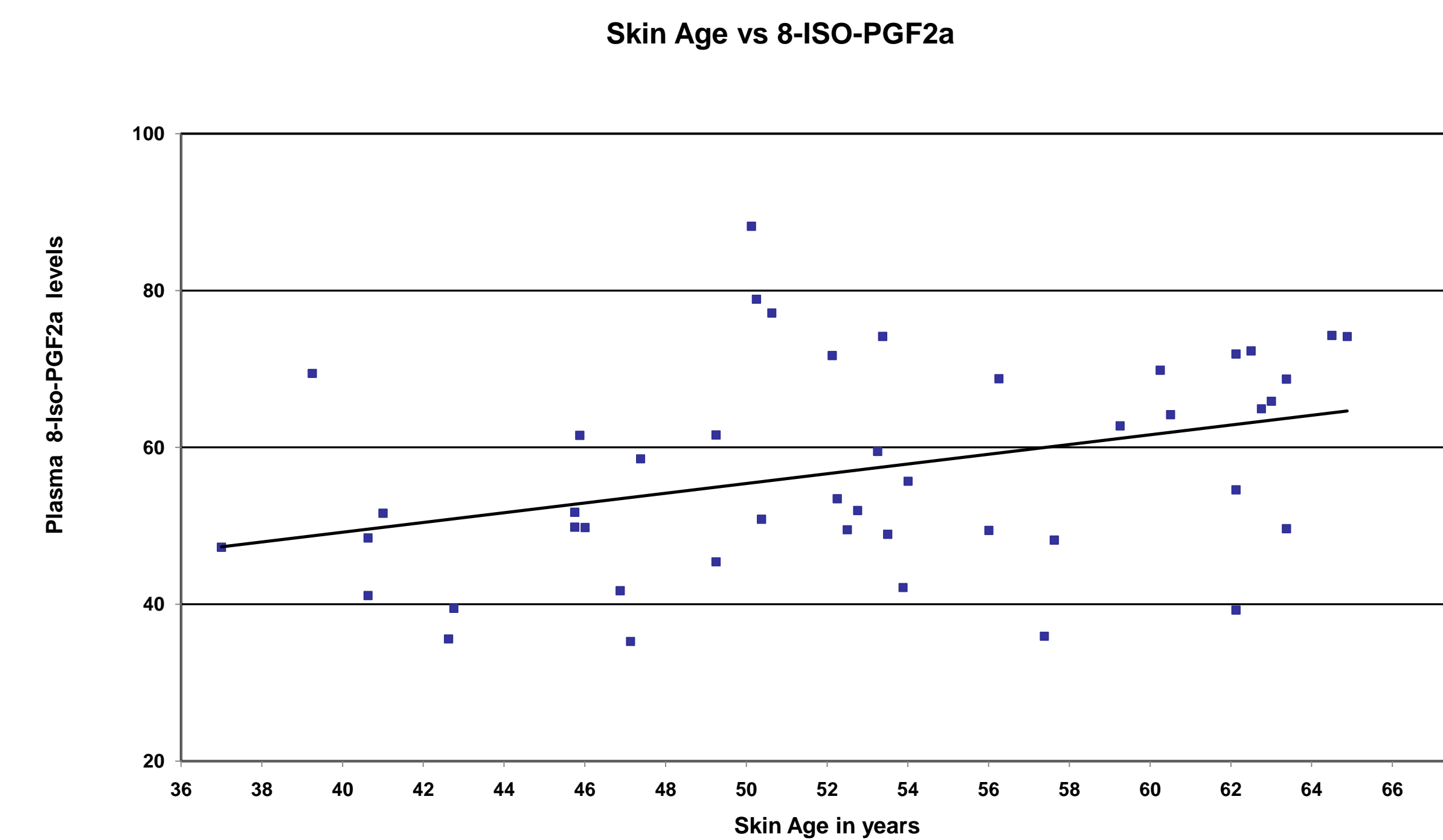
- IRB approved
- Inclusion criteria:
 - women aged 45-60 years old
 - in general good health as assessed by the investigator
- Exclusion criteria:
 - prior use of prescription medications to improve the appearance of photo damaged skin
 - facial cosmetic procedures
 - smoking
 - dermatologic conditions on the face
 - use of self-tanner two days prior to enrollment

RESULTS

Characteristic	SkinAge > CA (n=26)	SkinAge <= CA (n=20)	p-value
Skin Age	57.5 (5.35)	46.5 (5.66)	<0.001
Chronological Age	51.04 (4.93)	50.9 (4.93)	0.925
Iso_PGF2a	64.27 (11.46)	47.7 (8.76)	<0.001
PGF2a	136.18 (64.1)	65.19 (19.28)	<0.001
BMI	20.92 (3.38)	22.81 (2.56)	0.0365
Education Level	2.81 (0.69)	2.95 (0.76)	0.52
UV Exposure	0.38 (0.85)	0.05 (0.22)	0.095
Stress level at work	2.15 (1.95)	2.55 (2.06)	0.51
Coffee intake per day	1.04 (0.66)	1 (0.9)	0.87
Tea intake per day	1.23 (0.76)	1.25 (1.02)	0.94
"Yes" to medication usage	7.70%	15%	0.64
Oral supplement use	0.72 (1.37)	1.10 (1.55)	0.39
Fruits/vegetable intake per day	1.69(0.74)	1.80(1.06)	0.69
"Yes" for meat intake	88.50%	80%	0.38

Skin aging severity ratings performed by 4 dermatologists using facial photographs and replicated , with Pearson correlation R from ranging 0.82- 0.90

RESULTS



RESULTS (continued)

	OR Estimate/ 10 unit change in Isoprostane	95 % CI	p
Un-adjusted:			
8-iso-PGF2a	0.22	(0.09 , 0.52)	0.001
PGF2a	0.51	(0.34 , 0.77)	0.001
Adjusted:			
8-iso-PGF2a	0.10	(0.01 , 0.75)	0.025
PGF2a	0.39	(0.17 , 0.89)	0.026

LIMITATIONS

This study is limited by sample size.

CONCLUSIONS

Plasma isoprostanes merit further study as markers of oxidative stress in the the skin and possible biomarkers of skin aging

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