

# Fluoride Harms Bone Strength

Re-analysis of bone fluoride's association with bone strength, controlling for confounders, based on bone samples from Canadian hip-replacement-surgery patients.

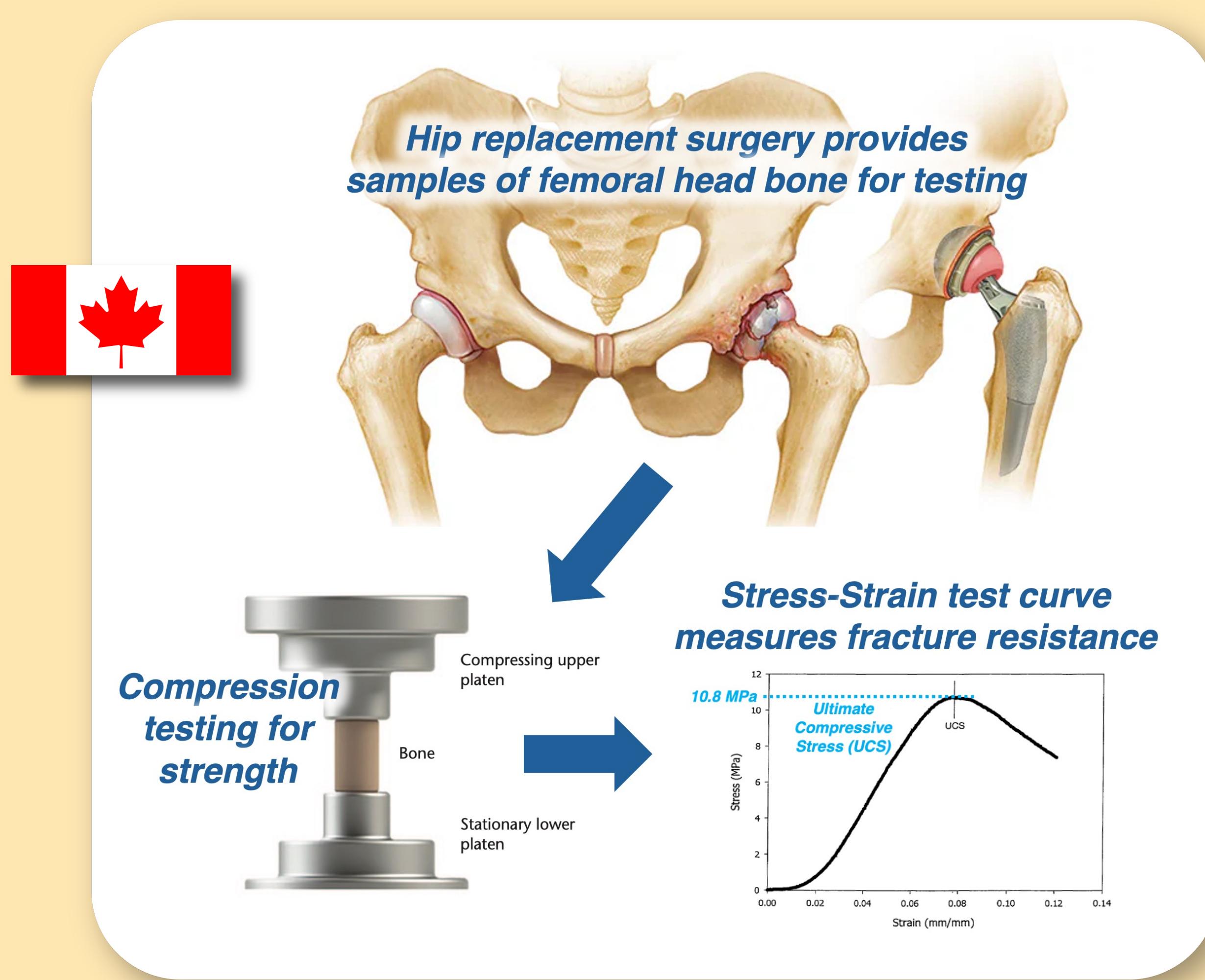
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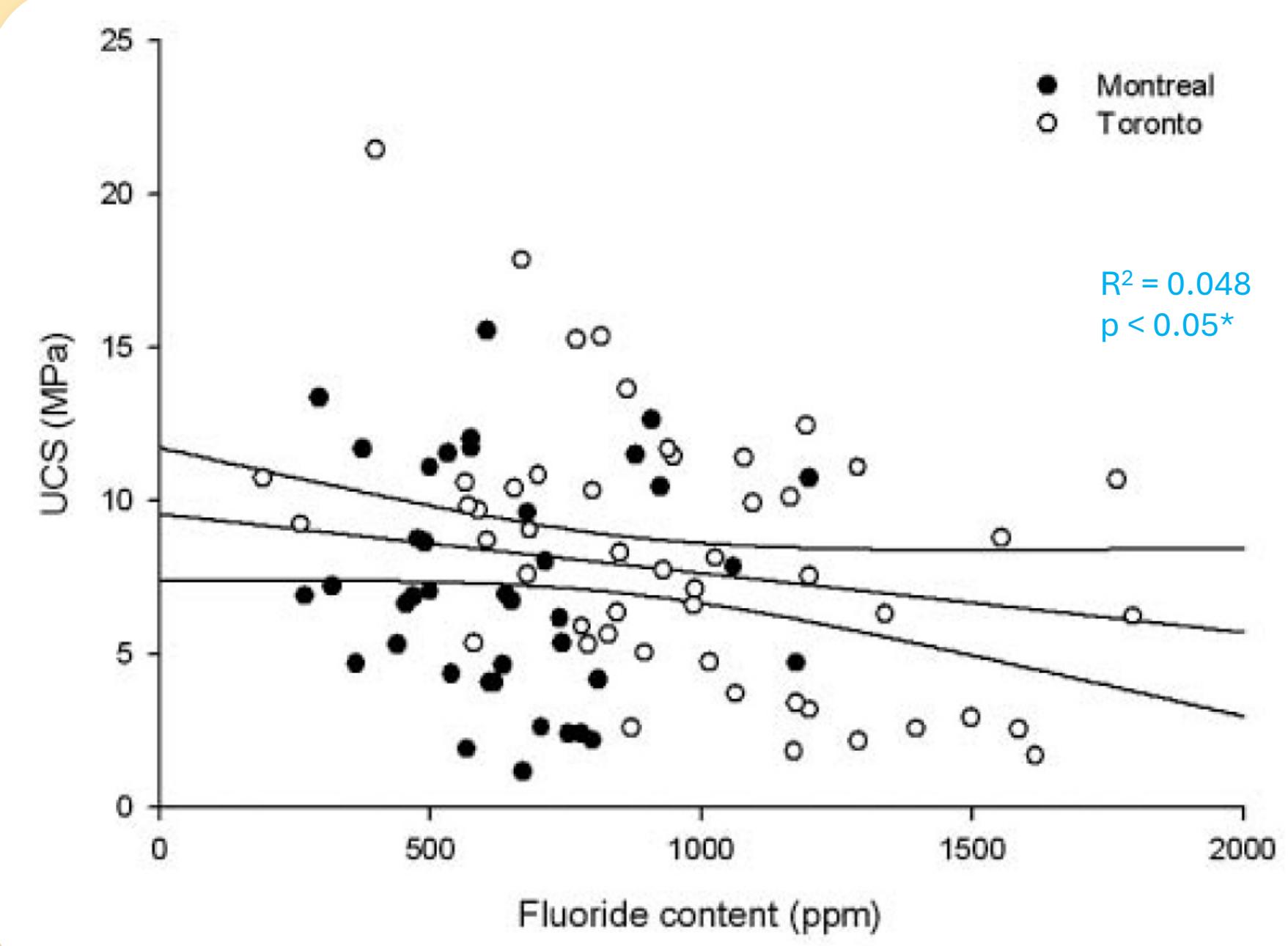
<sup>3</sup> Siri & Glimstad LLP, Los Angeles, CA

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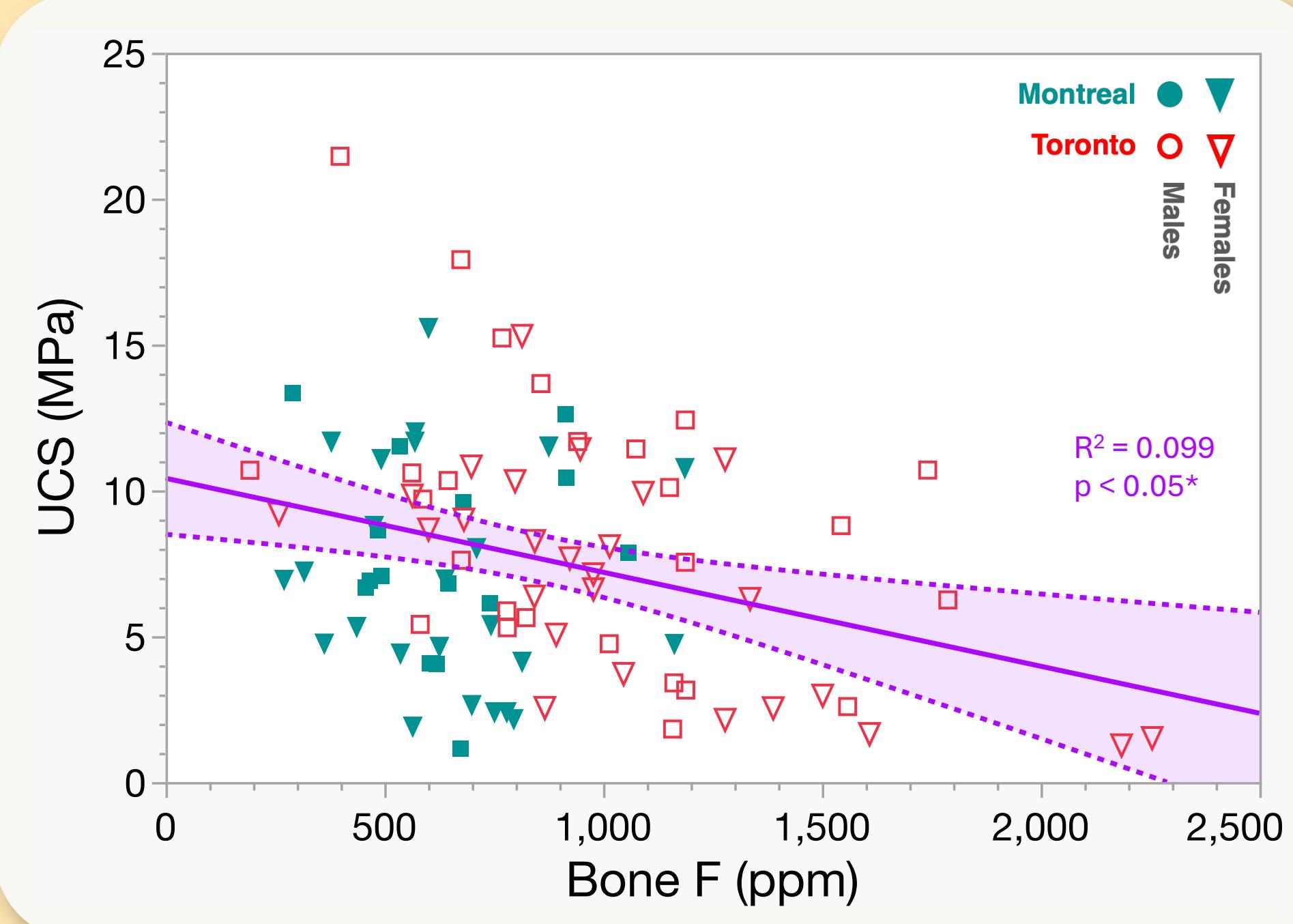
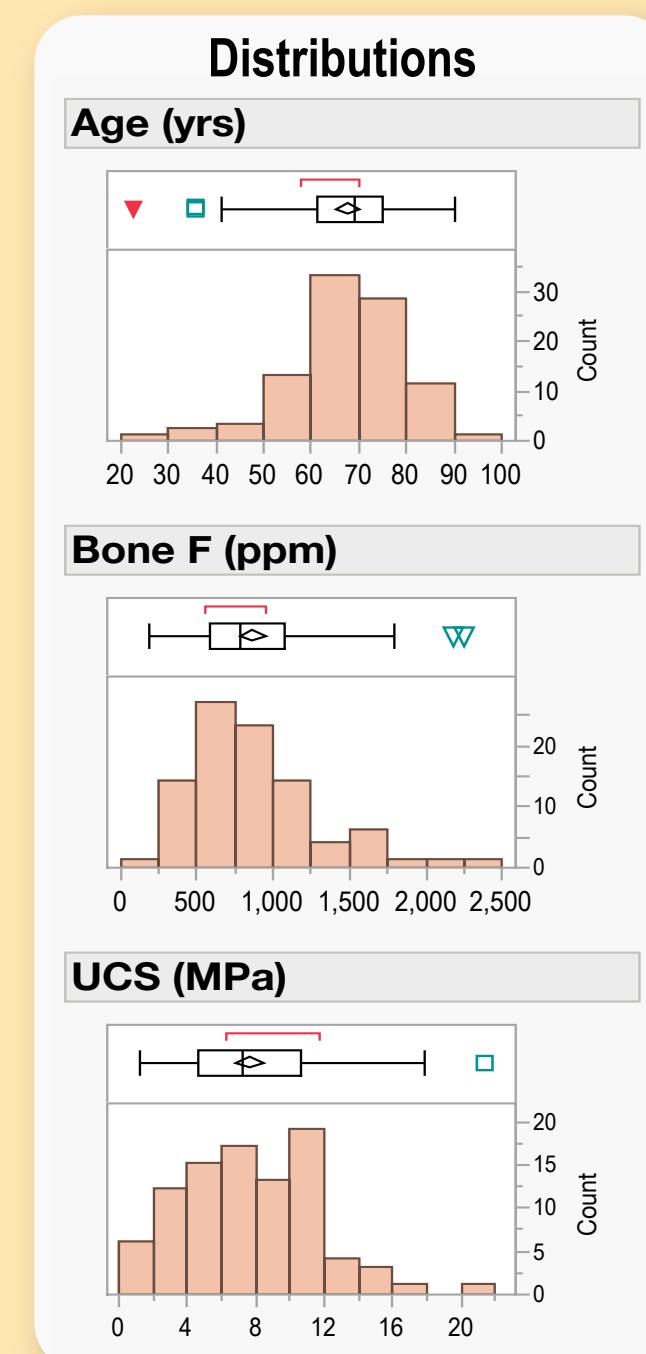
## Bone Strength vs Bone Fluoride

(figure from Chachra 2010)



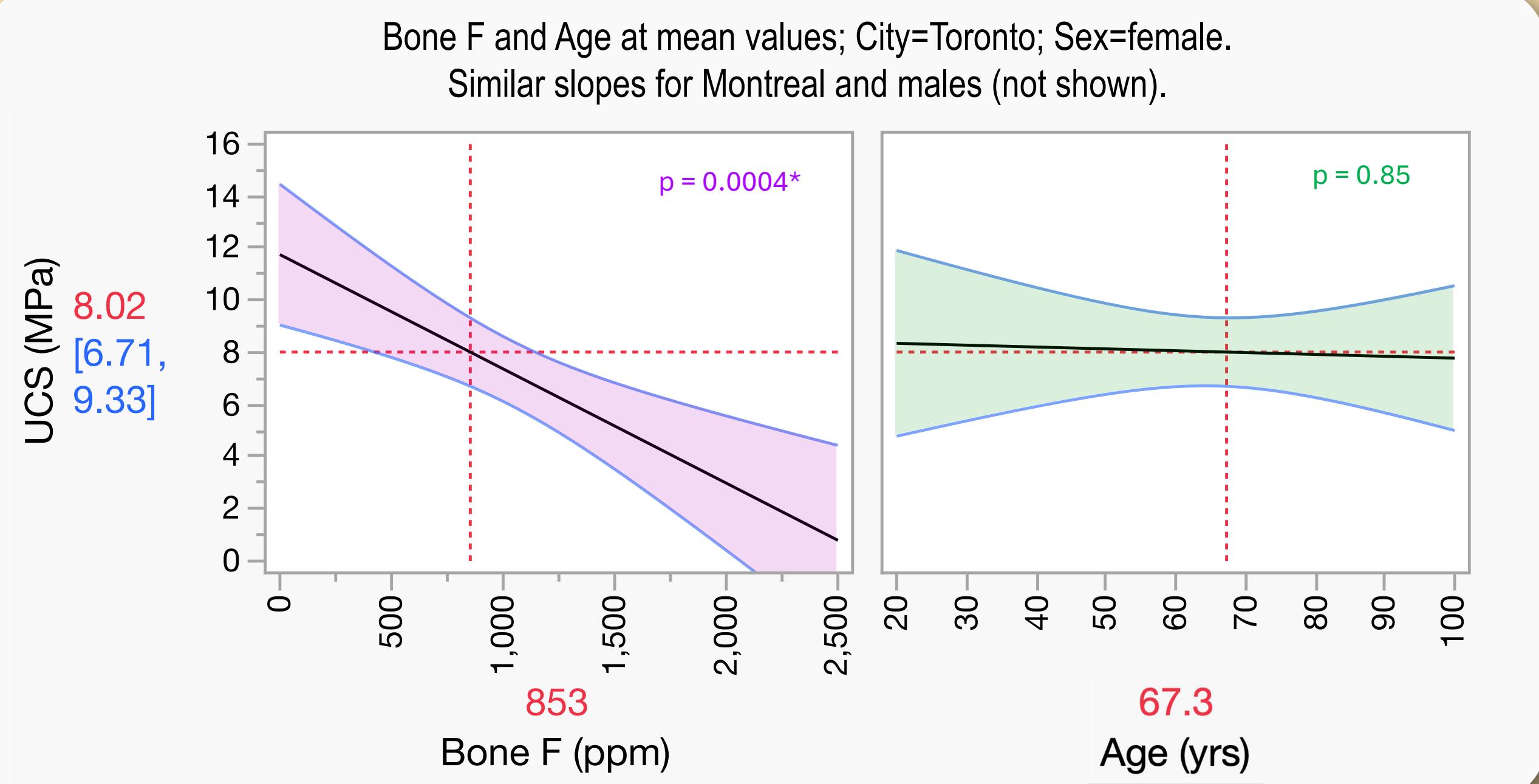
## Bivariate model, Bone Strength vs Bone Fluoride including 2 highest bone F

(data extracted from Chachra 2010, 2001)



## Multivariable linear regression model Bone Strength vs Bone Fluoride controlling for City, Sex, and Age

(data extracted from Chachra 2010, 2001)



## Conclusions:

→ After controlling for Age, City, and Sex, the adverse association between bone fluoride and weaker bone increased in magnitude and statistical significance.

→ Age does not explain the relationship between bone fluoride and bone strength.

### Multivariable Regression Model

Generalized Linear Model Fit

n = 91 Response: Ultimate Compressive Stress, UCS (MPa)

#### Parameter Estimates

Term	Beta	Lower 95%CI	Upper 95%CI	Prob > ChiSq
Bone F (per 100 ppm)	-0.40	-0.70	-0.20	<b>0.0004</b>
City (ref = Toronto)	-1.07	-1.99	-0.15	<b>0.0229</b>
Sex (ref = Male)	-0.63	-1.42	-0.16	0.1160
Age (yrs)	-0.007	-0.080	-0.066	0.8468