



NORTHWESTERN  
HEALTH SCIENCES  
UNIVERSITY



Research Across Complementary and  
Integrative Health Institutions (REACH) Center



THE UNIVERSITY OF BRITISH COLUMBIA  
Okanagan Campus



University  
of Manitoba



### 16 chiropractors participated:

- 8 females: 8 males
- average age 45.4 years
- average 18.3 years clinical experience

# Contextual Factors Related to Aging Determine Force-Based Spinal Manipulation Dosage

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## Purpose:

This study explored how contextual factors related to aging influence the kinetic and kinematic characteristics of spinal manipulative therapy (SMT).

Aging factors included:

- Chronological age
  - 35-, 65-, and 85-years old
- Pathological age
  - "Healthy" versus degenerative spine
- Felt age
  - Perceived as "young" versus "old"

## Methods:

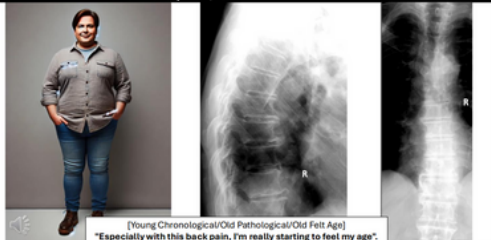
Experienced chiropractors were presented with 12 AI-generated patient vignettes with various combinations of age-related contextual factors. Participants delivered SMT to a manikin based on each vignette, presented six times in randomized order.

## Key Findings

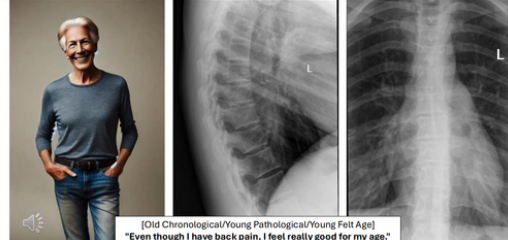
- Less force was used on vignettes with older chronological age and with pathology.
- Greater peak acceleration and velocity was used when responding to the youngest aged vignettes.
- It took less time to reach peak velocity when responding to vignettes who felt older.
- Less force was used by female clinicians overall. There was no difference in preload force or time to peak force between females and males.
- Years in practice did not influence outcomes.

## Sample Vignettes

This 35-year-old patient presents with uncomplicated, 5/10 mid thoracic pain, 3 months in duration.



This 65-year-old patient presents with uncomplicated, 5/10 mid thoracic pain, 3 months in duration.



This 85-year-old patient presents with uncomplicated, 5/10 mid thoracic pain, 3 months in duration.



## Conclusions

Chiropractors differentially discern aspects of aging to inform how they deliver SMT dosage. This is important for delivering safe and effective SMT, especially in an aging population.

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code



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citation