

How Much Adjustment Force Are You Using?

Force-Time Profiles of Six Upper Cervical Chiropractic Procedures

Roderic "Bo" Rochester, D.C.

Purpose

Over the last decade, researchers have investigated the risks and benefits associated with certain types of manual manipulation to the neck. Because several different upper cervical chiropractic methods are used, it is imperative to describe in detail the patient positioning, method of delivery, and force-time profile of the thrust for these procedures. The purpose of this study is to describe the force-time profiles of six chiropractic procedures used at the craniocervical junction.

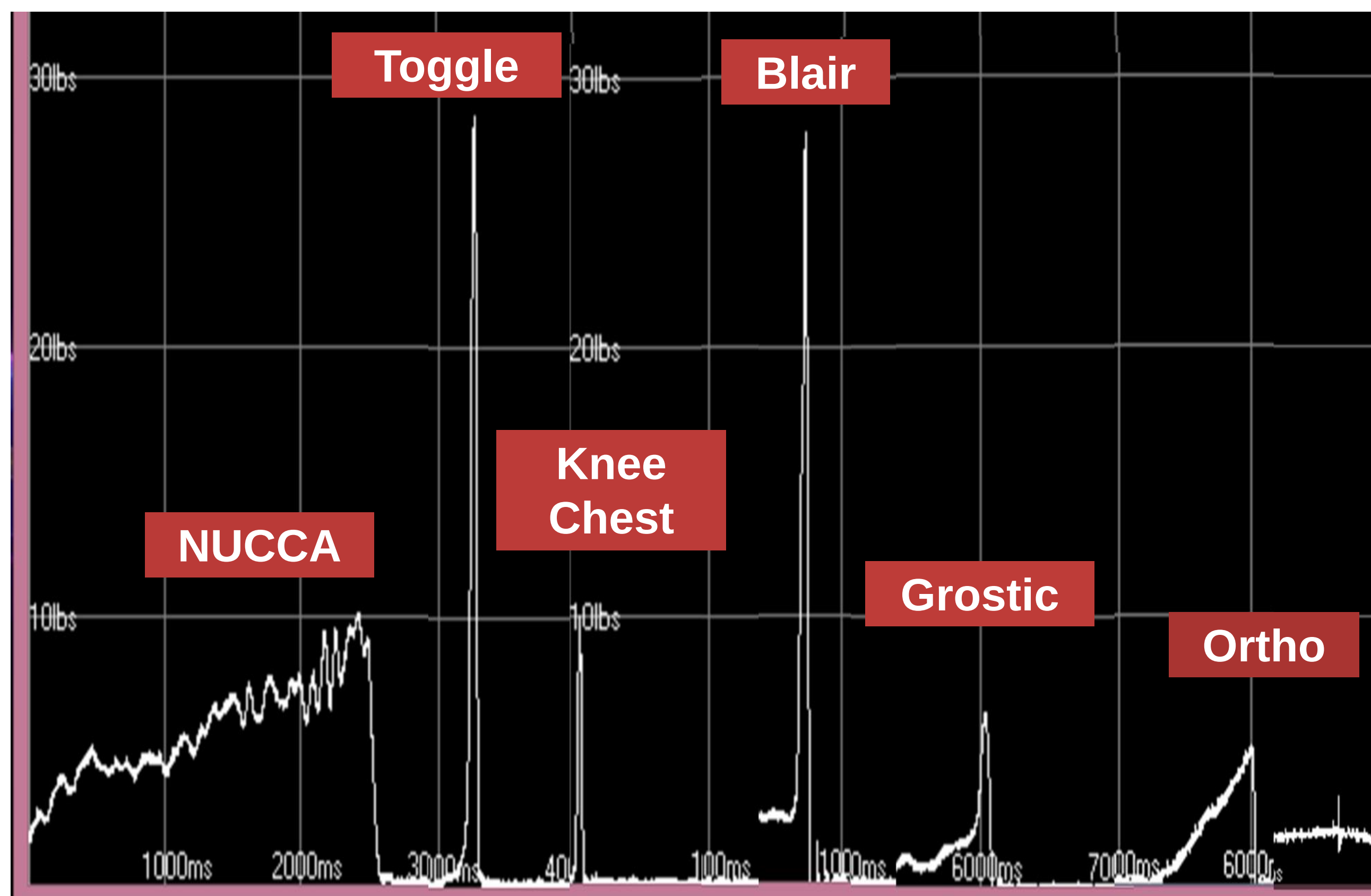


Figure 1. Force-Time Profile graph examples for (from left to right) National Upper Cervical Chiropractic Association (NUCCA), Toggle, Knee Chest, Blair, Grostic, Orthospinology (Ortho) Laney Torque table-mounted instrument, and handheld instrument adjustments.

Methods

Nineteen doctors performed 24 thrust trials on a modified version of the Titronics Research and Development Company's adjustment simulator utilizing 6 different upper cervical chiropractic procedures, which included Orthospinology handheld/table-mounted instruments, Grostic, NUCCA, Knee Chest, Blair, and Toggle. The resultant force-time graphs were examined and statistical analyses were performed.

Conclusions

Force-Time profiles were described for six chiropractic procedures used at the craniocervical junction. Significant differences in Peak Force exist between procedures.

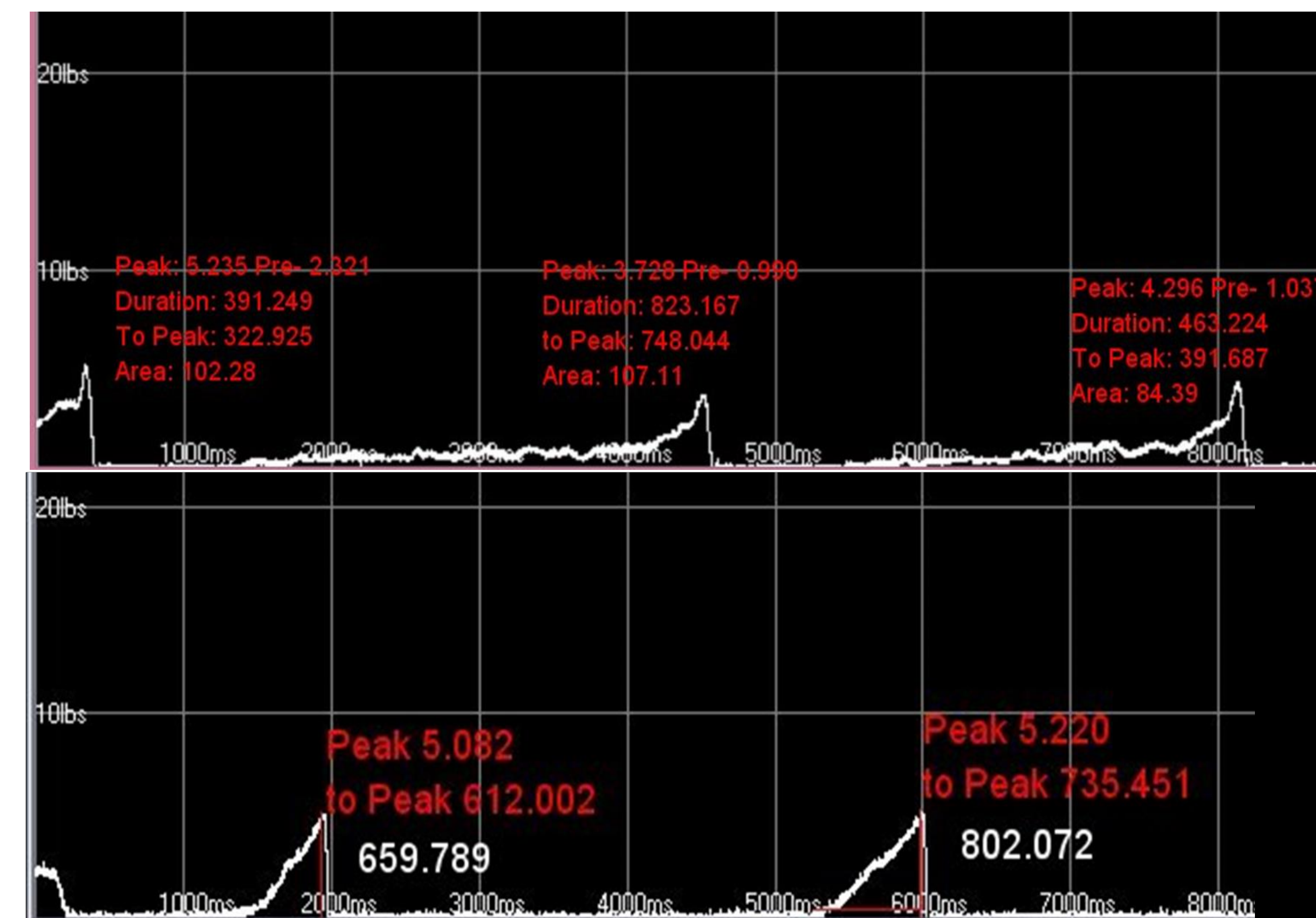


Figure 2. Force-Time Profile graphs comparing the Grostic Hand and the Laney Torque table-mounted instrument trusts, which are similar.

Results

The procedures' mean Peak Force varied from 4.4 lbs. (SD=0.5) to 22.8 lbs. (SD=6.7) with the instruments producing the lowest mean Peak Force and the Toggle producing the highest mean Peak Force.

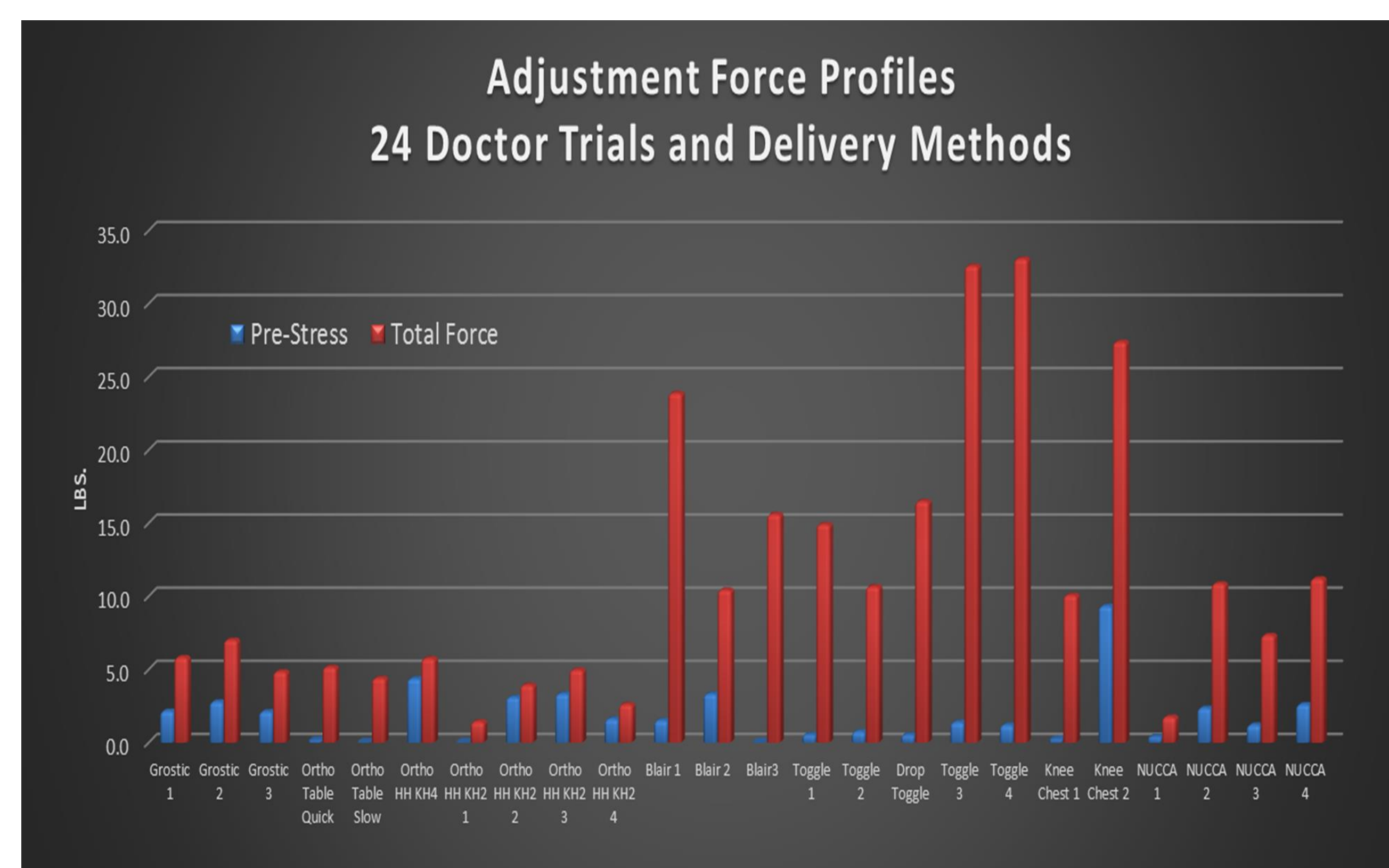
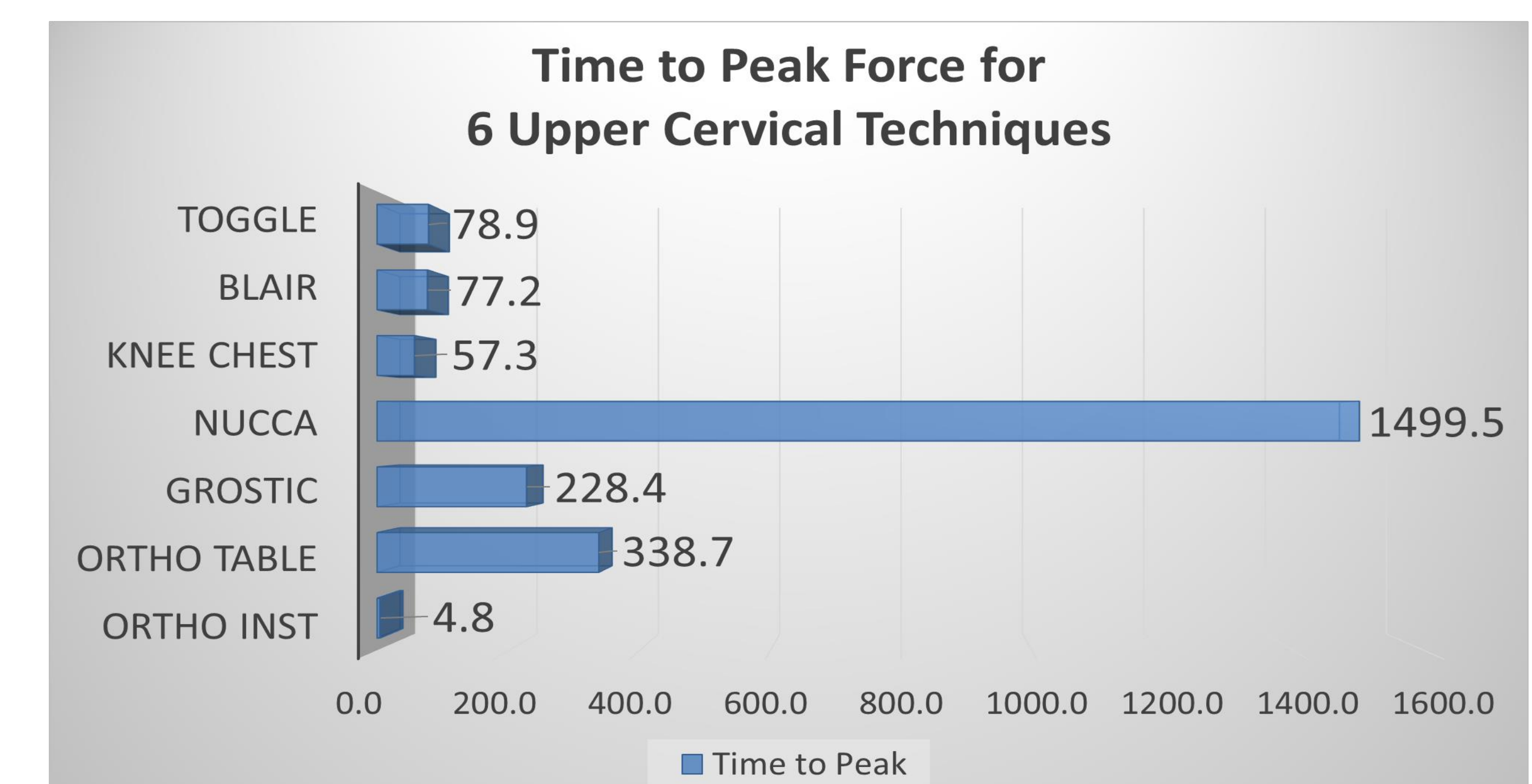
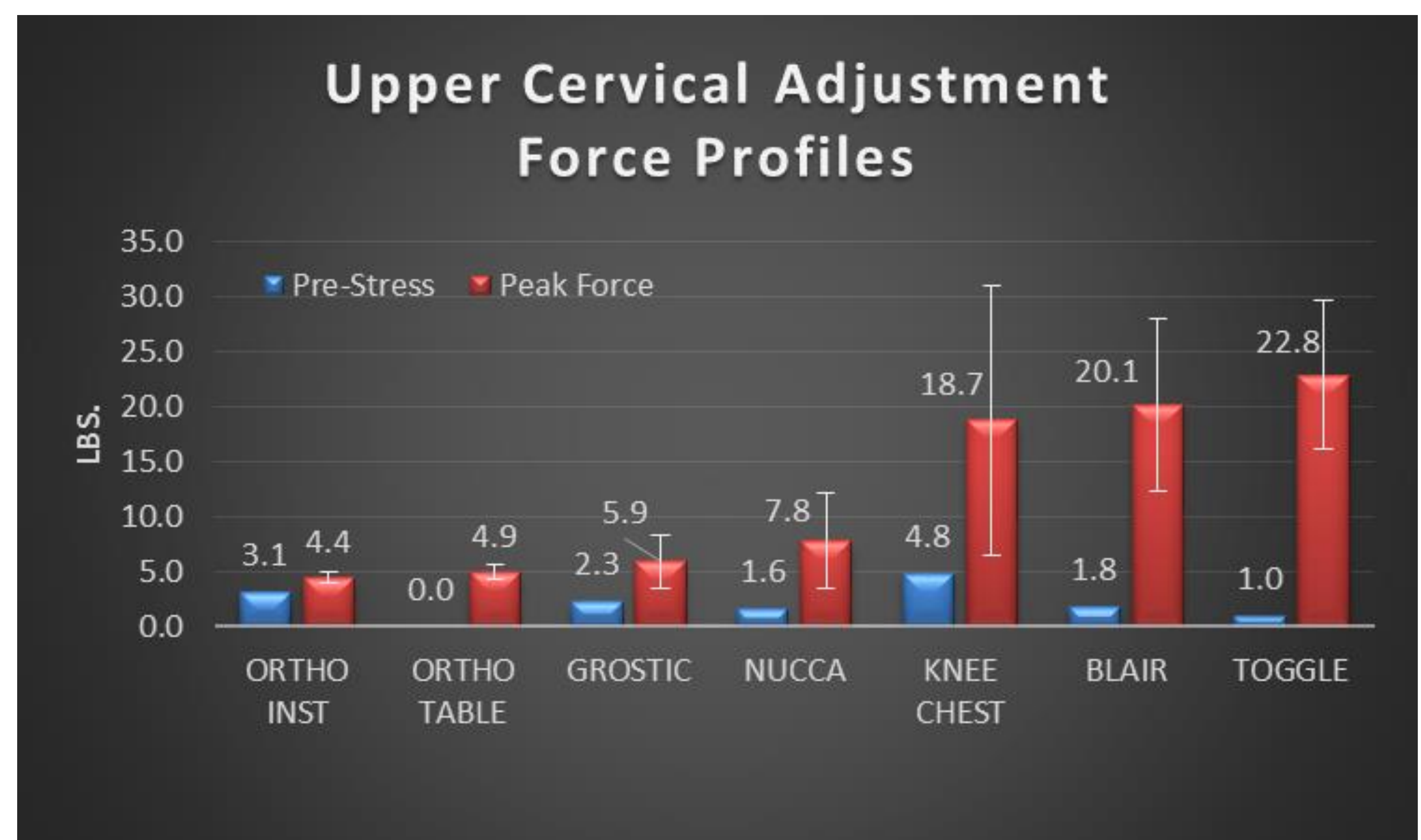


Figure 3. Shown are the averages of each doctor's adjustment forces, pre-stresses, and their technique.



Figures 4 and 5 display each technique's average pre-stress, peak force, and time to peak force in milliseconds.

Acknowledgments

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References

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