# Article information:

Maximal Strength Performance and Muscle Activation for the Bench Press and Triceps Extension Exercises Adopting Dumbbell, Barbell, and Machine Modalities Over Multiple Sets - PubMed  
<https://pubmed.ncbi.nlm.nih.gov/27669189/>

# Article summary:

1. The study investigated muscle activation, total repetitions, and training volume for 3 bench press exercise modes (Smith machine, barbell, and dumbbell) followed by a triceps extension exercise.

2. Significantly higher total repetitions were achieved for the dumbbell bench press compared to the barbell bench press.

3. Muscle activation patterns varied depending on the exercise mode used, with different exercises eliciting greater activity in different muscles.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article "Maximal Strength Performance and Muscle Activation for the Bench Press and Triceps Extension Exercises Adopting Dumbbell, Barbell, and Machine Modalities Over Multiple Sets" investigates the effects of different bench press modalities (Smith machine, barbell, and dumbbell) on muscle activation and total repetitions during a triceps extension exercise. The study found that the dumbbell modality resulted in significantly higher total repetitions compared to the barbell modality. Additionally, greater volume was achieved when the triceps extension exercise was performed after the barbell or dumbbell bench press compared to the Smith machine bench press.

While this study provides valuable insights into the effects of different bench press modalities on muscle activation and performance, there are some potential biases and limitations to consider. Firstly, the sample size of 19 trained men may not be representative of all populations. Additionally, only one triceps extension exercise was used in this study, which limits its generalizability to other exercises.

Furthermore, while surface electromyographic activity was assessed for several muscles during each modality, it is unclear whether these results translate to functional improvements or injury prevention. Additionally, there is no discussion of potential risks associated with each modality or how they may affect individuals with pre-existing injuries or conditions.

Overall, while this study provides valuable insights into the effects of different bench press modalities on muscle activation and performance during a triceps extension exercise, further research is needed to fully understand their implications for functional improvements and injury prevention.

# Topics for further research:

* Risks and benefits of different bench press modalities for individuals with pre-existing injuries or conditions
* Functional improvements resulting from increased muscle activation during bench press exercises
* Comparison of muscle activation and performance between different triceps extension exercises
* Long-term effects of using different bench press modalities on muscle strength and hypertrophy
* Differences in muscle activation and performance between novice and experienced lifters using different bench press modalities
* Comparison of injury rates between different bench press modalities in strength training programs.

# Report location:

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