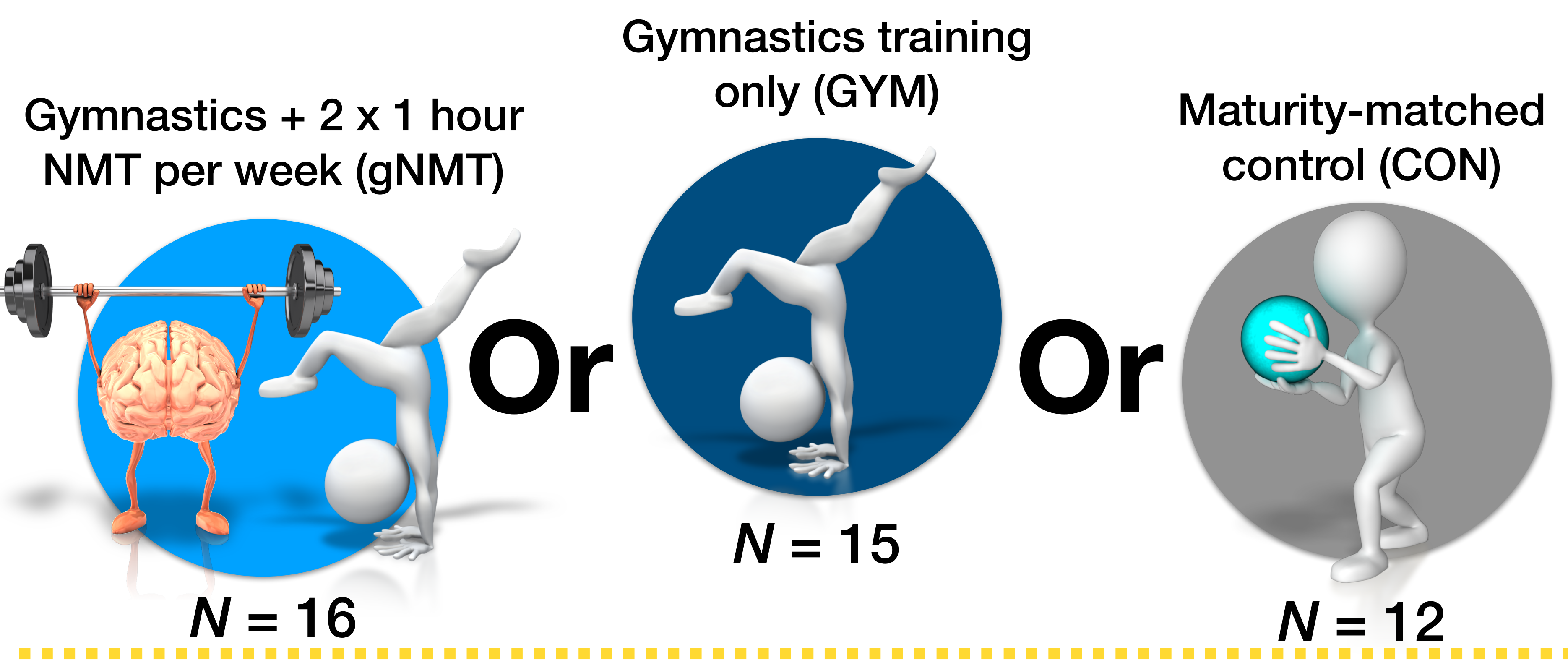


RESULTS OF 7-MONTH NEUROMUSCULAR TRAINING PROGRAMME DESIGNED TO IMPROVE LEG STIFFNESS IN HIGH-LEVEL YOUNG FEMALE GYMNASTS

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7-month Intervention



Data Analysis



Group Analysis

A 3 x 3 (group x time) repeated measures ANCOVA (%PAH as a covariate) and Hedges' *g* were used to calculate the significance and magnitude of within-group differences.

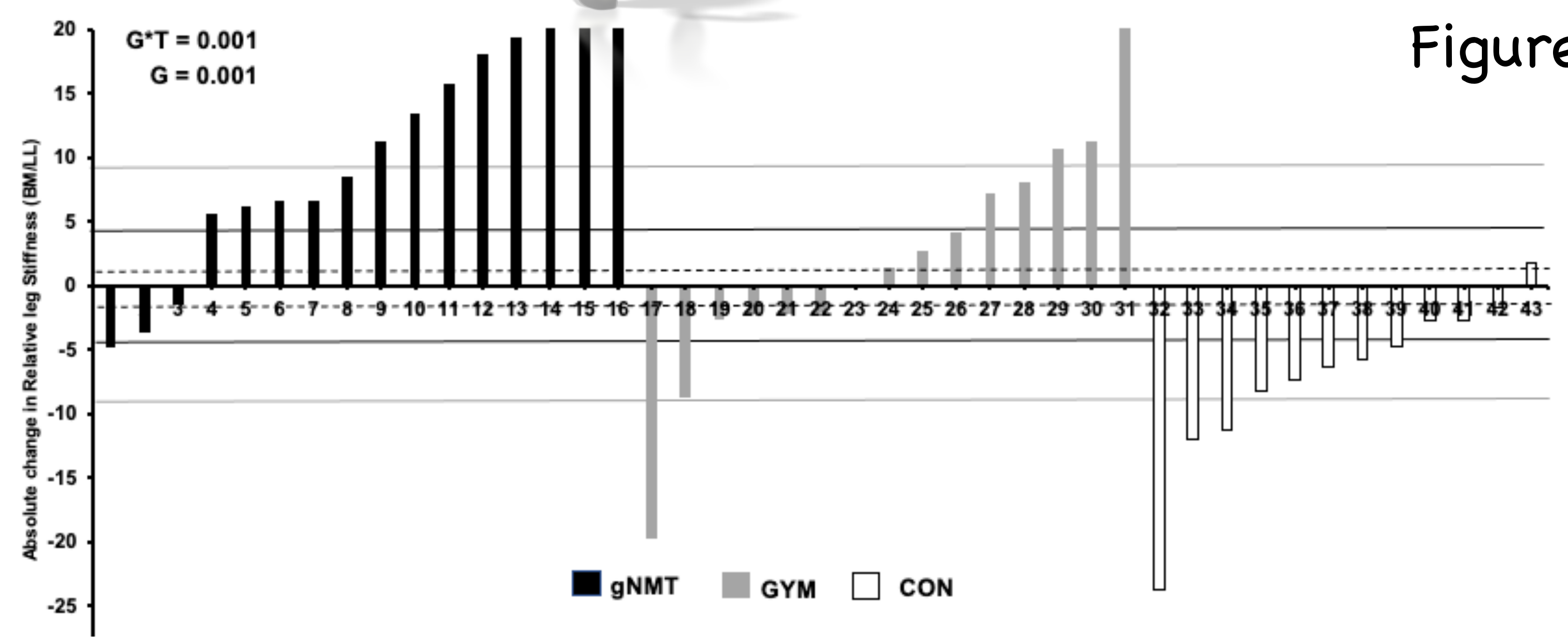
Individual Responses

Chi-Squared analysis was used to evaluate the number of positive responders using 0.2. (small), 0.6 (moderate) & 1.2 (large) of the between-subject *SD*.

Outcome measures
Relative leg stiffness ($Stiffness_{Rel}$), sprint speed and vault take-off velocity

Results

- Moderate significant increases in $Stiffness_{Rel}$ were shown in the gNMT group between 0-4 ($g = 0.66$), and 0-7 months ($g = 1.03$). The GYM group showed no significant changes ($g = 0.16-0.26$), while moderate significant decreases were evident in the CON group ($g = 0.74-0.88$).
- No significant changes in sprint speed or vault take-off velocity were present for any group over the study timepoints.
- Chi square analysis indicated that the gNMT had significantly more responders (81%) relative to the GYM (33%) and CON (0%) for $Stiffness_{Rel}$ (figure 1).
- gNMT had more positive responders for both sprint speed and vault TOV (63%) than the GYM (26-33%) and CON (33%) groups.



Conclusion

Positive changes in $Stiffness_{Rel}$ can be achieved in young female gymnasts following supplementary NMT; adaptations that exceed those changes obtained solely from gymnastics training or maturation.

However, a longer training duration of additive gNMT might be needed to elicit changes in $Speed_{peak}$ and vault take-off velocity.

