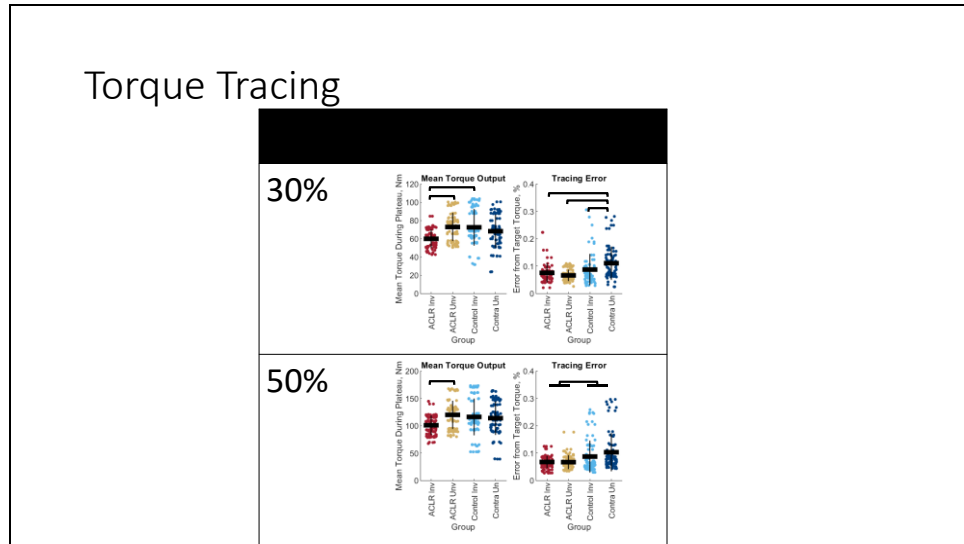


Quadriceps weakness after anterior  
cruciate ligament reconstruction: inability  
to recruit high-threshold motor units

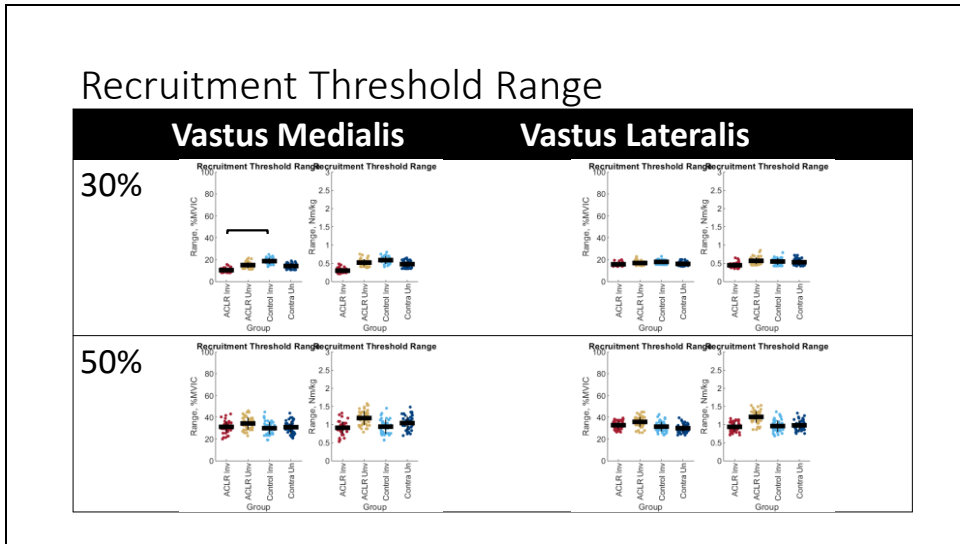
Supplement 1

Results from 30% and 50% MVIC trials.

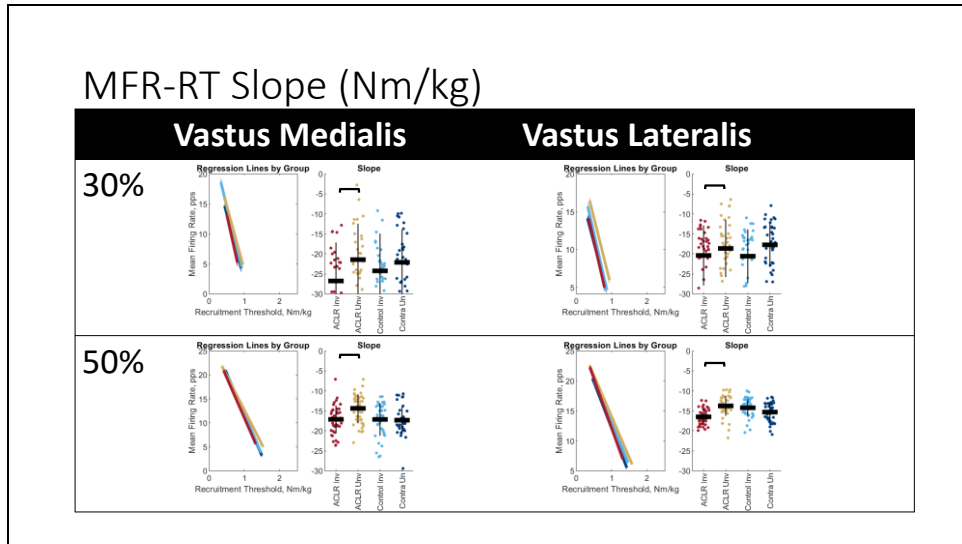
## Torque Tracing



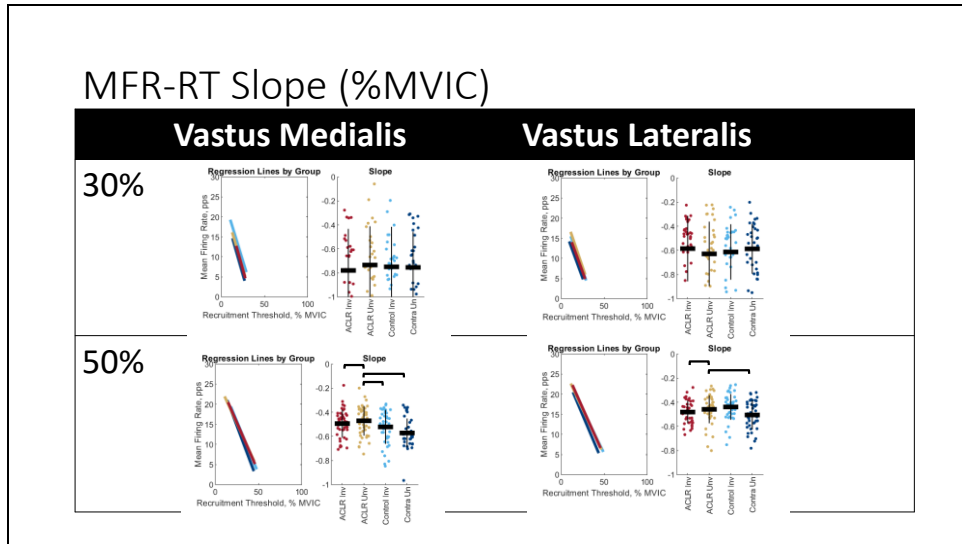
Mean torque output and force tracing performance during the 30% and 50% trials. Individual circles depict the predicted value from the mixed effect model. Solid horizontal bars represent the least squared means and vertical error bars are the standard deviation. *Post hoc* comparisons that reached statistical significance are denoted with brackets. Group effects are denoted with the footed bracket. Abbreviations: ACLR, anterior cruciate ligament reconstruction; MVIC, maximum voluntary isometric contraction; Nm, Newton-meter.



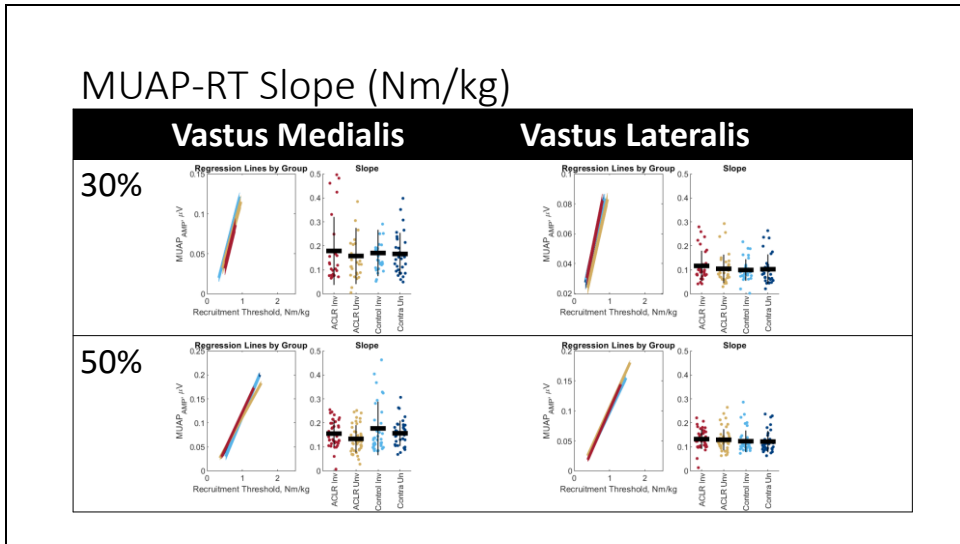
Relative and mass-normalized recruitment threshold range for MUs identified in the vastus medialis and vastus lateralis during the 30% and 50% trials. Individual circles depict the predicted value from the mixed effect model. Solid horizontal bars represent the least squared means and vertical error bars are the standard deviation. *Post hoc* comparisons that reached statistical significance are denoted with brackets. Abbreviations: ACLR, anterior cruciate ligament reconstruction; MVIC, maximum voluntary isometric contraction; Nm/kg, Newton-meter per kilogram.



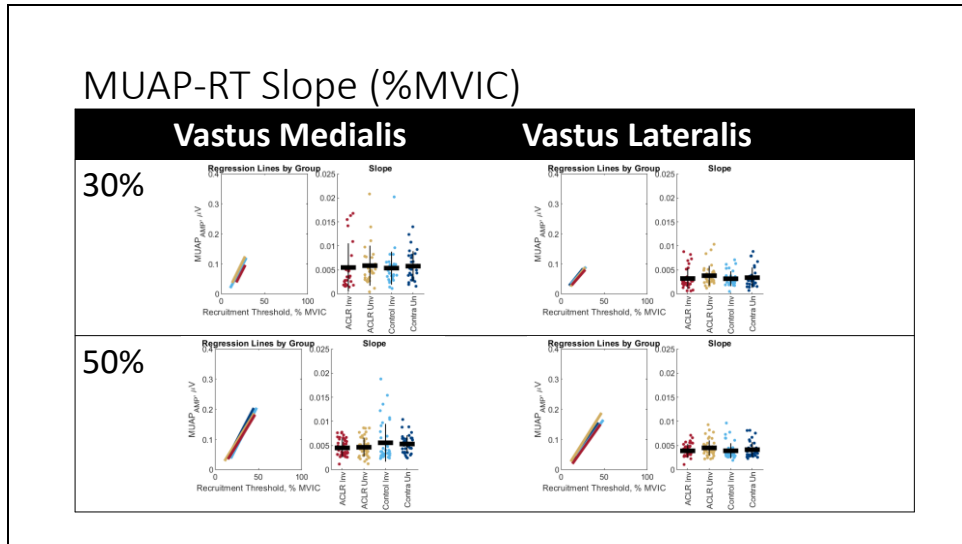
Mean firing rate to mass-normalized recruitment threshold slope comparisons for MUs identified in the vastus medialis and vastus lateralis during the 30% and 50% trials. In the left plots, dashed lines represent the mean firing rate to recruitment threshold relationship across the group\*limb levels. Lines are plotted with average slopes and mass-normalized recruitment threshold ranges without controlling for y-intercept. In the right plots, individual circles depict the predicted value from the mixed effect model. Solid horizontal bars represent the least squared means and vertical error bars are the standard deviation. *Post hoc* comparisons that reached statistical significance are denoted with brackets. Abbreviations: ACLR, anterior cruciate ligament reconstruction; MVIC, maximum voluntary isometric contraction; Nm/kg, Newton-meter per kilogram; pps, pulses per second.



Mean firing rate to relative recruitment threshold slope comparisons for MUs identified in the vastus medialis and vastus lateralis during the 30% and 50% trials. In the left plots, dashed lines represent the mean firing rate to recruitment threshold relationship across the group\*limb levels. Lines are plotted with average slopes and relative recruitment threshold ranges without controlling for y-intercept. In the right plots, individual circles depict the predicted value from the mixed effect model. Solid horizontal bars represent the least squared means and vertical error bars are the standard deviation. *Post hoc* comparisons that reached statistical significance are denoted with brackets. Abbreviations: ACLR, anterior cruciate ligament reconstruction; MVIC, maximum voluntary isometric contraction; Nm/kg, Newton-meter per kilogram; pps, pulses per second.



Motor unit action potential amplitude to mass-normalized recruitment threshold slope comparisons for MUs identified in the vastus medialis and vastus lateralis during the 30% and 50% trials. In the left plots, dashed lines represent the action potential amplitude to recruitment threshold relationship across the group\*limb levels. Lines are plotted with average slopes and mass-normalized recruitment threshold ranges without controlling for y-intercept. In the right plots, individual circles depict the predicted value from the mixed effect model. Solid horizontal bars represent the least squared means and vertical error bars are the standard deviation. *Post hoc* comparisons that reached statistical significance are denoted with brackets. Abbreviations: ACLR, anterior cruciate ligament reconstruction; MVIC, maximum voluntary isometric contraction; Nm/kg, Newton-meter per kilogram; uV, microvolts.



Motor unit action potential amplitude to relative recruitment threshold slope comparisons for MUs identified in the vastus medialis and vastus lateralis during the 30% and 50% trials. In the left plots, dashed lines represent the action potential amplitude to recruitment threshold relationship across the group\*limb levels. Lines are plotted with average slopes and relative recruitment threshold ranges without controlling for y-intercept. In the right plots, individual circles depict the predicted value from the mixed effect model. Solid horizontal bars represent the least squared means and vertical error bars are the standard deviation. *Post hoc* comparisons that reached statistical significance are denoted with brackets. Abbreviations: ACLR, anterior cruciate ligament reconstruction; MVIC, maximum voluntary isometric contraction; Nm/kg, Newton-meter per kilogram; pps, pulses per second.