

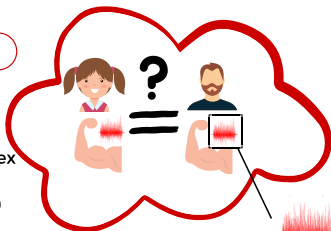
# MUSCLE ACTIVATION IN CHILDREN AND ADULTS: INSIGHT FROM THE EMG THRESHOLD

BASED ON STUDIES BY WOODS ET AL.

## OUR QUESTION



Are there age & sex differences in muscle (type-II) activation?



### Muscle Types?

Muscles typically have two types of fibres – type I and type II. The type II fibres are typically, larger, stronger and faster.

### Muscle Activation?

Did you know that when we move our muscles to their maximum, we actually do not use all of our muscle fibres? Some are left "on reserve".

### What's This?

When you move, your muscles give off an electrical signal. This is what that looks like. The harder you contract, the greater the electrical activity (and the larger the red lines)

## WHAT WE DID



We tested 4 groups different in age and sex



Each person performed knee extensions at increasing intensities



We looked for differences in the electrical activity in their muscles

## WHAT WE FOUND



Adults activated more of their type-II muscle fibres than children

There were no sex differences

### Type-II Muscle Activation



## THIS MAY EXPLAIN



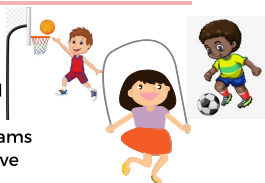
Children's Lower Muscle Strength **BUT**

Greater Muscle Endurance



## WHAT DOES THIS MEAN?

- Children's sports, rehabilitation, and physical training programs should be **designed** for children, rather than built from adults programs
- Children should be training at a higher relative intensity



Interested in learning more or becoming a future study participant?  
 Contact Stacey Woods at [sw16hl@brocku.ca](mailto:sw16hl@brocku.ca) or  
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Check out our website!

<https://brocku.ca/bone-and-muscle-health/>