

# Thumbs Up! A Statistical Analysis into Texting Styles and Their Relationship with Pain, Strength, Texting Efficiency and Accuracy



## Introduction

For our project, we decided to investigate the variation of finger and thumb pinch strength and its relationship with texting characteristics as well as how these may vary depending on age and gender. We also looked into whether certain texting style can cause or lead to more We carried out three investigations based on this topic. Our four investigations were as follows;

**Investigation 1:** Does age and gender effect the speed and accuracy of typing and texting style?

**Investigation 2:** Does age or gender effect the pinch strength of finger and thumb?

**Investigation 3:** Do certain texting styles effect the location of pain and occurrence and frequency of pins and needles?

We hope to gather insight into certain questions such as;  
Does age affect your texting style?  
Can certain texting styles cause pain in certain areas of your body

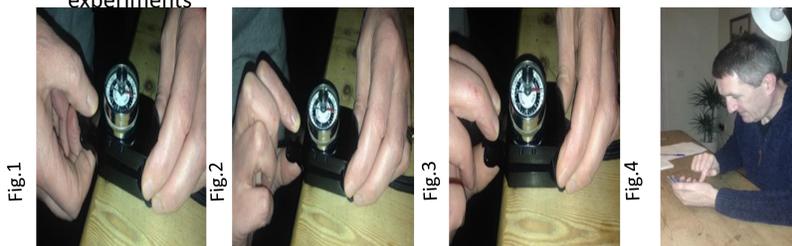
Is one texting style more accurate or efficient than another  
We believe these questions, if answered will help improve general knowledge on the effects of texting on our population

## Hypothesis

We wish to investigate the variation of Finger Strength and its Relationship with Texting Style, Frequency and Increased Localised pain. we have a particular interest in questions such as; Does age affect your texting style? Can certain texting styles cause pain in certain areas of your body particularly the upper and lower arm regions

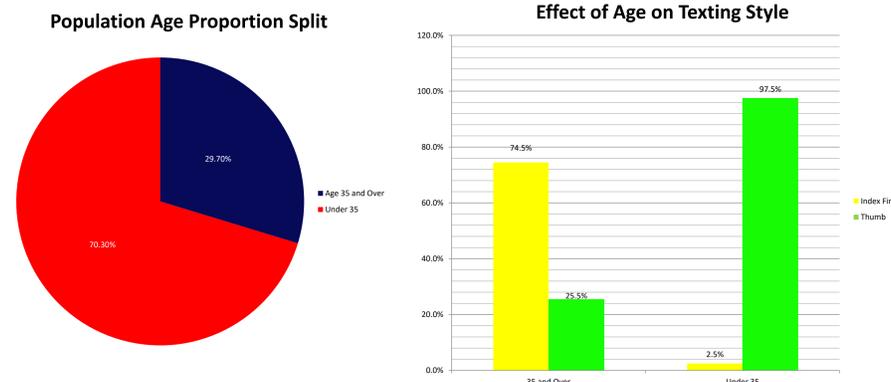
## Methodology

- We carried out testing was carried out in schools, our homes and in offices of our parent's employment. We examined 172 precipitants.
- The first stage of testing included the participants filling out a survey, we made in relation to the hours they spend texting each day. We also asked if they experience and hand or upper limb injuries and how often these occurred.
- Once the survey had been filled out, we conducted a strength test using a dynamometer and three fixed pinches; the lateral (fig.1), palmer (fig.2), and tip pinch (fig.3),
- Following on from the strength test we conducted a typing test (fig.4), for this experiment we downloaded an app by Flairfly LLC, TapTyping. The participants were required to retype a short paragraph using their typical texting style., we noted the grip they had of the phone and the fingers/thumbs they were using When they completed this test their typing speed accuracy and words typed per minute were displayed on the screen
- We then uploaded our results to an excel spreadsheet and graphed our results. Finally, we analysed our data and drew conclusions on our experiments

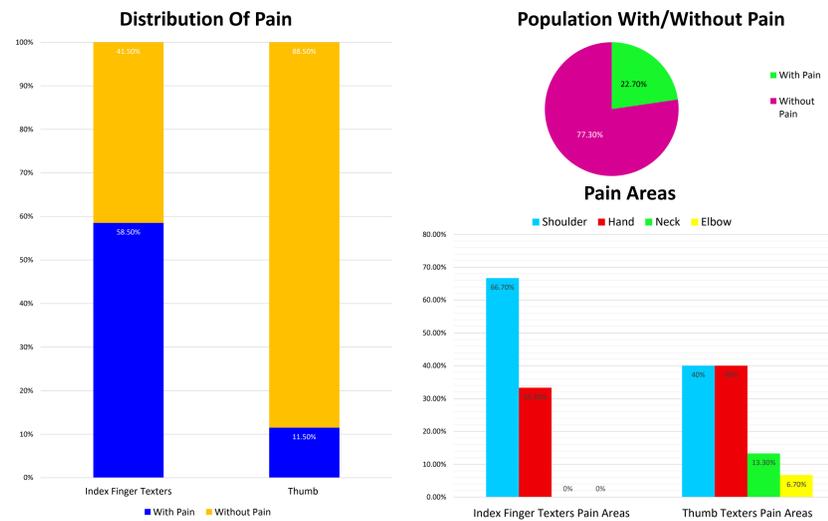


## Results

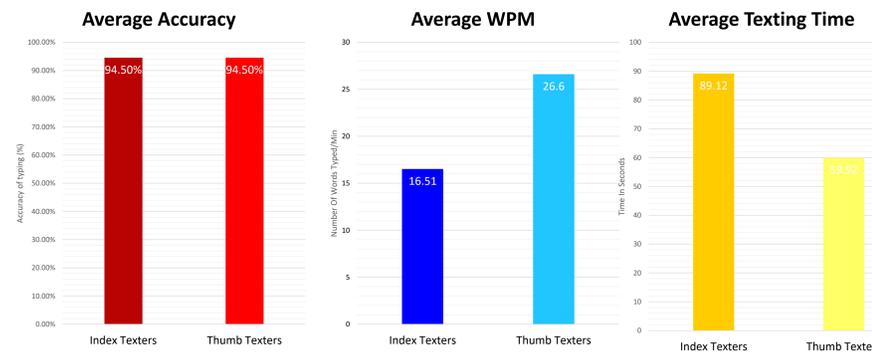
### Investigation 1: Does age affect your texting style?



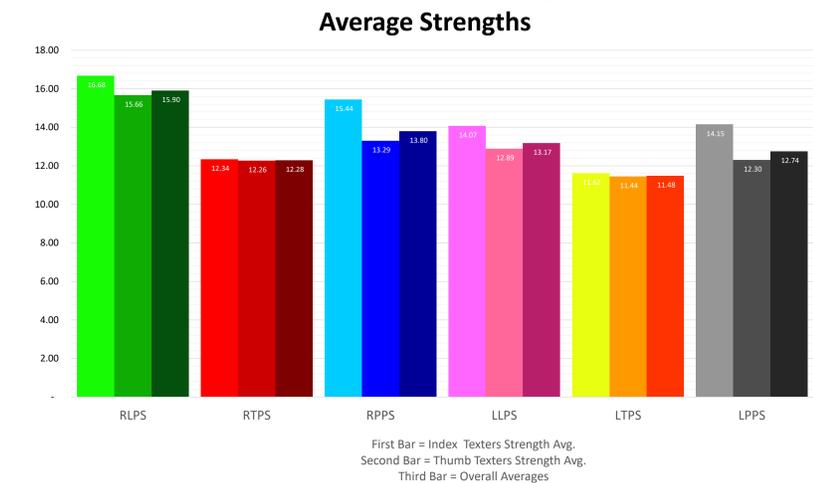
### Investigation 2: Can certain texting styles cause pain in certain areas of your body particularly the upper and lower arm regions?



### Investigation 3: Is one texting style more accurate or efficient than another?



### Investigation 4: Do certain texting styles effect the strength of an individual's thumbs or fingers?



## Conclusion

After analysing our data we discovered that;

- Age can greatly affect your texting style. We saw that 92.68% of the index finger group were from the 35 and over age group and 97.5% of under 35's text with their thumb.
- Thumb texting is more efficient than index finger texting. The thumb texters consistently outperformed the index finger texters in all efficiency tests. They were on average 29.2 seconds quicker and typed an average of 10.09 more words/minute. They also managed to maintain the same accuracy levels of the finger texters
- We found that, 58.5% index finger texters experienced pain compared to 11.5% of thumb texters. Of the index finger texters who experienced pain, 66.7% of them were experiencing shoulder pain. This could be due to a repetitive strain injury or overuse of the shoulder during index finger texting. This is a promising finding as it supports our theory that frequent index texting can lead to upper limb pain

## Injuries that can occur from texting

**Tigger thumb:** This occurs when a flexor tendon becomes constricted in the thumb and can be caused by "repeated gripping motions" like texting or holding a smartphone.

**Text claw and cell phone elbow:** The medical name for these injuries are cubital tunnel syndrome and carpal tunnel syndrome. The terms describe finger cramping and aching muscles which can be largely caused by texting scrolling or excessive gaming.

