



Gait Analysis



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Predictive Model

=IF(B2>0.1, "short", IF(B2<0.1, "tall"))

NOTE: We have designated "short" as under 170 cm and "tall" as 170 cm or above

- "If" statement
- Analyzes gait frequency data in gFx cells
- If the number is more than 0.1, writes "tall"
- If the number is less than 0.1, writes "short"
- Uses cell references to apply to all cells

How accurate is it?

Person	Trial 1	Trial 2	Trial 3
Caitlin	tall	tall	tall
Ben	tall	tall	tall
Lara G	tall	short	tall
Lara F	short	short	short

- The model accurately predicted everyone's height range except for Lara G's second trial
- Data taken during the trials shows this was likely the result of human error
 - During Trials 1 and 3, she took 7 steps
 - During Trial 2, she took 8
 - Her stride length was also smaller in Trial 2
 - This means she took smaller steps in that trial, so her gait frequency was higher and more similar to a shorter person's
- We tested the formula on Justin, and it predicted that he was tall
 - Later found out that his height is 176.5 cm, so the model was correct

Based on Gait Frequency we can predict someone's...

- Height: The larger the gait frequency the shorter the test subject
- Leg length: The larger the gait frequency the smaller the leg length

How did we get there?

- Took the averages of gF_x , gF_y , and gF_z for each trial and graphed
- gF_x was the only one with a discernible pattern
 - The taller the person, the lower the gF_x
- Approximated dividing line at 0.1 to create “if” statement