

## CWSF 2013 - Lethbridge, Alberta



### Jessica DeForest

#### A Stressful Story: The Knee!

**Challenge:** Health

**Category:** Junior

**Region:** Bay Area

**City:** Hamilton, ON

**School:** St. Luke E.S.

**Abstract:** This experiment investigates the effects on the knee joint of bending the knee and the effect of added weight, above the hip. The results showed that the lower the knee bend angle, the greater the stress on the knee joint to a maximum of 30% and that added weight, above the hip, also has an increased stress effect to a maximum of 80%.

#### Biography

My name is Jessica DeForest; I am a 13 year old, grade 8 student at St. Luke Catholic Elementary School. I live in Hamilton, Ontario with my family of four which includes my father, my mother and younger brother. One day I aspire to be a Pediatrician because I love helping kids. Some of my hobbies include volleyball, shopping, spending time with family and friends, and participating and helping with school activities. I have won many volleyball medals including the Award of Excellence from the OVA. Throughout my time at St. Luke I have won Scripture Reading and Public Speaking, a Director's Award, as well as numerous Science Fair awards. The inspiration for my project came from my grandfather who recently needed a knee replacement. To take my project to the next level, I would like to review how repetitive bending contributes to the breakdown of the knee by performing my experiment hundreds of times. Some advice I would give to others, thinking about doing a project is always try your best and keep trying until you produce your best. My favourite quote says it all: "Perseverance is failing 19 times and succeeding the 20th." - Julie Roberts.

Youth Science Canada  
PO Box 297  
Pickering ON L1V 2R4  
[www.youthscience.ca](http://www.youthscience.ca) / [info@youthscience.ca](mailto:info@youthscience.ca)  
416-341-0040