

# CWSF 2019 - Fredericton, New Brunswick



## Rachael Urquhart

### Calm Your Beating Heart: An Experiment on Ways to Lower Heart Rate

**Challenge:** Health

**Category:** Junior

**Region:** Bluewater

**City:** Desboro, ON

**School:** Arran-Tara E.S.

**Abstract:** This project tested five activities to lower heart rate in 51 participants aged 8 to 74. The activities were: colouring a picture, deep breathing, walking, listening to music and activating the diving response, which is a reflex that is activated when the face is cooled. It was discovered that the diving response was the best strategy to lower heart rate quickly, especially for children.

#### Biography

My name is Rachael Urquhart and I am in grade 7 at Arran Tara Elementary School, in Tara Ontario. My favourite subjects in school are math, science and art. I am a competitive gymnast. I also enjoy playing the piano and spending time outside. This is my fourth year doing a science fair project, and my first year going to Canada Wide. I am really excited! This year I did my project on ways to lower heart rate. I designed an experiment to investigate five ways to lower heart rate: colouring a picture, deep breathing, listening to music, walking, and activating the diving response. The inspiration for this project was to figure out quick and easy ways to calm myself down for competitions and presentations. For further investigation, I am curious to learn if activating the diving response could be adapted to help toddlers calm down during intense emotions, as my research indicates that children respond very well to the diving response. My advice to other students thinking about doing a project is to think of something you are interested in and learn all you can about it.

#### Awards

#### Value

Excellence Award - Junior - Bronze Medal Sponsor: Youth Science Canada	
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$1 000