# Milestone 2 - Team 9

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## *Go/No Go Evaluation Table*

### Datum: Sleeve (SAM)

When thinking of **athletes**, it would be interesting to create a wearable device that uses an **EMG muscle sensor** to measure muscle contractions

### *SAM*

|  | Concept 1 (Athletic Injury Prevention Sleeve) | Concept 2 (Phlebitis) | Concept 3 (Nerve/Sight Impairment Temp. Sensor) |
|---|---|---|---|
| **Wearable** | - | -1 | 0 |
| **User Friendly** | - | 1 | 1 |
| **Non Invasive** | - | 0 | 0 |
| **Removable** | - | 1 | 1 |
| **Accurate** | - | -1 | 1 |
| **Lightweight** | - | 1 | 1 |
| **Compact** | - | 1 | 1 |
| **Measures** | - | 0 | 0 |
| **Comfortable** | - | 0 | 1 |
| **Practical** | - | 1 | -1 |
| **Score** | 0 | 3 | 5 |
| **Go/No Go** | Go | Go | No Go (extremely limited uses) |

### *JULIA*

|  | Concept 1 Headband | Concept 2 Belt | Concept 3 Necklace |
|---|---|---|---|
| **Wearable** | 0 | 1 | -1 |
| **User Friendly** | 0 | 0 | 1 |
| **Non Invasive** | 0 | 0 | -1 |

| | | | |
|---|---|---|---|
| **Removable** | 0 | -1 | 1 |
| **Accurate** | -1 | 1 | -1 |
| **Lightweight** | 0 | 0 | 0 |
| **Compact** | 0 | 0 | 0 |
| **Measures** | 0 | 0 | -1 |
| **Comfortable** | 0 | 0 | -1 |
| **Practical** | 0 | 1 | -1 |
| **Score** | -1 | 2 | -4 |
| **Go/No Go** | No Go | Go | No Go |

## CADEN

| | **Concept 1 (Muscle Tracker)** | **Concept 2 (Glasses)** | **Concept 3 (Stride Tracker)** |
|---|---|---|---|
| **Wearable** | 0 | 0 | 0 |
| **User Friendly** | -1 | -1 | -1 |
| **Non Invasive** | 0 | 0 | 1 |
| **Removable** | 0 | 0 | -1 |
| **Accurate** | 0 | 0 | -1 |
| **Lightweight** | 0 | 0 | 0 |
| **Compact** | 0 | 0 | 0 |
| **Measures** | 0 | 0 | 0 |
| **Comfortable** | 1 | 1 | 0 |
| **Practical** | 1 | -1 | 0 |
| **Score** | 2 | -1 | -2 |
| **Go/No Go** | Go (Same as Sam) | No Go | No Go (Combined with Maryam Concept 1)* |

*Both Caden's Concept 3 and Maryam's Concept 1 are extremely similar in both ideas and design. Therefore certain aspects of Caden's design that were not apparent in Maryam's design will be added in order to improve the overall design.

## MARYAM

| | Concept 1 (Shoelace Orientation) | Concept 2 (Heatstroke Shirt) | Concept 3 (Pollution Sensor-Asthma) |
|---|---|---|---|
| **Wearable** | 1 | 0 | 0 |
| **User Friendly** | -1 | 0 | 1 |
| **Non Invasive** | 0 | -1 | -1 |
| **Removable** | -1 | 0 | 0 |
| **Accurate** | 1 | 0 | 1 |
| **Lightweight** | 0 | 0 | 0 |
| **Compact** | 1 | 0 | 0 |
| **Measures** | 1 | 0 | 0 |
| **Comfortable** | 1 | -1 | -1 |
| **Practical** | 1 | 0 | -1 |
| **Score** | 4 | -2 | -1 |
| **Go/No Go** | Go | No Go | No Go |

## DETAILED EVALUATION:

| | Weight | Athlete Sleeve | | Temp Clip | | Chronic Pain Belt | | Shoelace Tracker | |
|---|---|---|---|---|---|---|---|---|---|
| | | *Rating* | *Weighted Rating* | *Rating* | *Weighted Rating* | *Rating* | *Weighted Rating* | *Rating* | *Weighted Rating* |
| **Wearable** | 0.5 | 4 | 2 | 4 | 2 | 4 | 2 | 4.5 | 2.25 |
| **User Friendly** | 0.5 | 3 | 1.5 | 5 | 2.5 | 4 | 2 | 3 | 1.5 |
| **Non Invasive** | 0.3 | 4 | 1.2 | 4 | 1.2 | 3 | 0.9 | 5 | 1.5 |
| **Removable** | 0.2 | 5 | 1 | 5 | 1 | 4 | 0.8 | 3.5 | 0.7 |
| **Accurate** | 0.5 | 2 | 1 | 3 | 1.5 | 4 | 2 | 3.5 | 1.75 |
| **Lightweight** | 0.3 | 5 | 1.5 | 5 | 1.5 | 4 | 1.2 | 5 | 1.5 |
| **Compact** | 0.1 | 5 | 0.5 | 5 | 0.5 | 5 | 0.5 | 5 | 0.5 |
| **Measures** | 0.4 | 3 | 1.2 | 3 | 1.2 | 4 | 1.6 | 3.5 | 1.4 |
| **Comfortable** | 0.5 | 4 | 2 | 4 | 2 | 3.5 | 1.75 | 4.5 | 2.75 |
| **Practical** | 0.5 | 2.5 | 1.25 | 4 | 2 | 4 | 2 | 2 | 1 |

| Total | 39 (with total ratings) | - | 13.15 | - | 15.4 | - | 14.75 | - | 13.85 |

Range of Weight: 0.1-0.5
Range of Rating: 1-5

# Final Decision

Our group has decided to pursue a device that uses a temperature sensor to sense when blood is pooling in the legs, to prevent symptoms of phlebitis and other ailments that affect blood flow in the legs. We decided on this design because it scored the highest on the weighted decision matrix, seemed most likely to work, and has a very wide consumer base. Also, we believe there may be unintended audiences that we can research, (for example, people who have a fever can possibly clip it to a headband to monitor temperature). The small and simple design of a clip was deemed to meet our criteria best, thus we chose to pursue this idea.