**Preliminary List of Ideas**

| **Idea** | **Sensor** | **Information Input to Device** | **Audience** |
| --- | --- | --- | --- |
| Heart Rate Monitoring Chest Strap | Heart Rate | Heart rate monitoring chest strap made of comfortable fabric that expands as the user breathes in and out. Measures BPM and outputs an alert to user or care-takers if reading is out of a pre-established “healthy” range. | Patients with previous and/or ongoing heart complications who need to continuously monitor their heart rate even away from the way hospital. For example, while working or sleeping. |
| Alzheimer’s Disease Predicting Leg Sleeve | Absolute Orientation | A common area of impairment in patients with Alzheimer’s disease is their gait pattern. This impairment causes a decrease in walking speed and symmetry as well as stride length. It also causes walking speed to become more varying. Thus, an absolute orientation sensor embedded within a comfortable leg sleeve can record and compare Euler angles in the three different axis as well as the user’s walking acceleration. This data would then be transferred to the user’s doctor, physician, or care-taker, and can then be examined for an early Alzheimer’s Disease diagnosis. Early detection of the disease drastically improves the management of it later on. | Elderly users who have been labelled as being prone to Alzheimer’s Disease based on their genetics, lifestyle, and environmental factors. |
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**Information input to this device**

* Distance:

**Types of sensor required to input this information**

**Information input to this device: Types of sensor required to input this information**

* Seizure: muscle EMG Muscle Activity/Orientation (if one uses just orientation, then can be used for people who faint)
* Muscle Pull: EMG Muscle Activity
* Heart irregularities: heart rate sensor