



Wearables for Health and Wellness



Health, Wellness and Safety Wearables

- There are many devices that can help us monitor our health, wellness and general well being.
- Important information can be shared or transferred to doctors, family members and caregivers.
- Other devices can assist with safety and emergencies.



Health and Wellness - Monitoring

- **Wireless Blood Pressure Monitor**

- FDA approved medical device
- Sends information to app
 - Can be shared with doctor and others
- Bluetooth connectivity
- Track changes over time
 - Monitor for changes and issues



Health and Wellness - Monitoring

- Kardia Mobile
 - Personal EKG Device
 - Detects:
 - Atrial fibrillation, bradycardia, tachycardia, sinus rhythm
 - FDA-cleared
 - Works in as little as 30 seconds



Health and Wellness - Monitoring

- Pulse Oximeters
 - Check oxygen levels
 - Pre-Post work out
 - Rest
 - Retain and share information



Health and Wellness

- Apple Watch*
 - Heart and vitals monitoring
 - Sleep and rest monitoring
 - Mental health and daily habits
 - Cycle tracking – family planning
 - Safety and emergency
 - ***Works best when paired with iPhone**
 - ***Different models – different features**



Health and Wellness - Monitoring

- **Apple Watch – Heart and Vitals Monitoring**
 - ECG App – single-lead electrocardiogram
 - Detect signs of atrial fibrillation
 - Heart rate alerts – high/low or irregular
 - Hypertension notifications
 - Analyzes pulse over 30-day period for signs of high blood pressure
 - Reminders to stand, walk, climb stairs and others
 - Stay healthy and meet workout/health goals
 - Wheelchair specific workouts



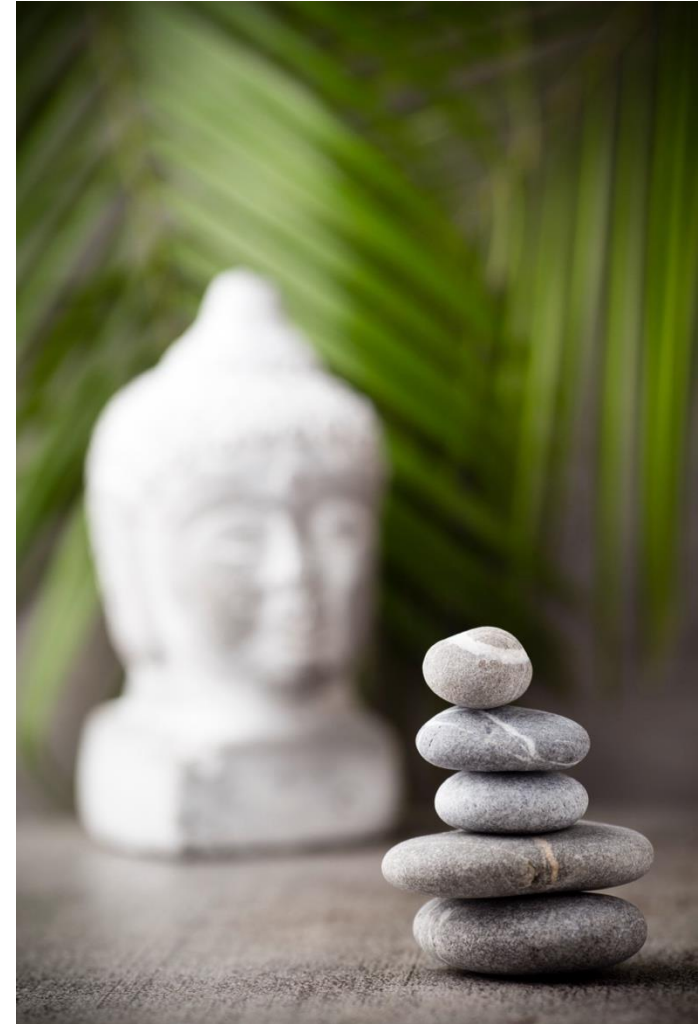
Health and Wellness - Monitoring

- **Apple Watch – Sleep and Rest Monitoring**
 - Sleep score and stages
 - REM, core, deep
 - Vitals app – tracks sleep metrics
 - Heart rate, respiratory rate, wrist temp, sleep duration and others
 - Sleep apnea detection
 - Identifies breathing disturbances



Health and Wellness - Monitoring

- Apple Watch – Mental Health, Cycle Tracking and Daily Habits
 - State of mind
 - Log emotions and moods – track mental health trends
 - Medication app - reminders and logs
 - Cycle Tracking – assist with family planning
 - Environmental tracking
 - Time spent in daylight
 - Loud environment monitoring



Health and Wellness

- **Apple Watch – Fall and Crash Detection**
 - Detects hard falls and crashes
 - Automatically calls emergency services
 - Or emergency contacts



Health and Wellness

- Watches

- Lots of others out there
 - Smart Watches: Samsung, Google
 - Fitness Trackers: FitBit, Garmin
- Different features and price points
- Depends on needs and features
- Some without screens



Health and Wellness



- **Oura Ring (and App)**
 - Measures 50+ health metrics
 - Sleep, stress, activity, metabolic health, heart health and others
 - Monitor meals and glucose levels – with **Stelo Glucose Biosensor (separate device)**
 - Provides reminders, alerts and motivations
 - Integrates with other apps from Apple, Google and 3rd parties
 - Pairs with other wearable devices to better track health

Health and Wellness

- **Lechal Haptic Insoles and Footwear**
- GPS guided haptic footwear – directions without looking at phone
- Insoles, buckles and pods – 15-day battery
- Workout, step and gait tracking
- Bluetooth to phone – works without internet or data connectivity
- Fall risk assessments – gait and balance feedback



Health and Wellness

- **Sensoria**
 - Smart socks and Garments
 - Connects to app to improve running metrics
 - Can also track gait and other walking metrics
 - Helpful to OT's and PT's



Health and Wellness

- **TouchPoints**
 - Worn on both wrists, clothing, socks or other areas
 - Gentle alternating vibrations
 - Reduce stress response
 - Manage focus
 - Support better sleep
 - Many adjustments depending on user and needs



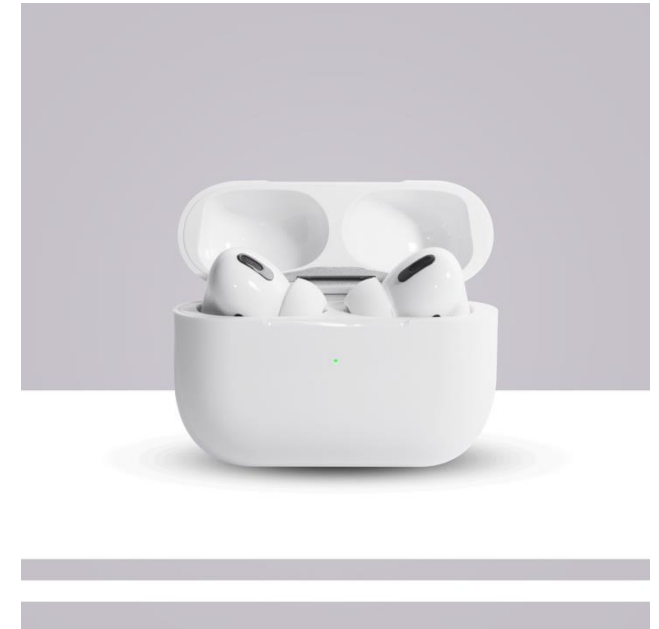
Health and Wellness

- **Tracking Devices**
 - Trax Play, AngleSense, AirTags, Etc.
 - Tracking location
 - GeoFencing
 - Alerts for movement – Elopement
 - Track changes in area or behavior
 - Different options/different features/different needs



Health and Wellness

- **Air Pods Pro**
 - Clinical-grade, over-the-counter hearing aid capability
 - Perceived mild to moderate hearing loss
 - Built-in hearing test – personalized audiograms
 - Dynamically amplifies environmental sounds
 - Pair with iPhone for assistive listening
 - Noise Cancellation for increased focus
 - Newest version can track heart rate too



Health and Wellness

- **Noise Cancelling and Reducing**

- Noise cancelling headphones and earmuffs
 - Block out noise for increased focus and to help with over stimulation
 - Bose, Sony, Apple, Google, lots out there!!
- Noise reduction earplugs
 - Brings down the volume in loud environments
 - Can block certain frequencies in some models
 - Loop, Vibes, Happy Ears, others



Health and Wellness

- **Adaptive Clothing**

- Magnets, velcro and other closures
- Elastic
- Modified openings
- Removal of buttons and zippers
- Other adaptations for different needs
 - No Limbits Clothing – www.no-limbits.com
 - Silverts – www.silverts.com
 - Joe and Bella – www.joeandbella.com
 - Magna Ready – www.magnaready.com
 - Many others and also Kohls, JC Penney and other large companies



Health and Wellness

- **Weighted Clothing and Devices**
 - Vests, coats, head and wrist bands and others
 - Promote calmness
 - Improve focus
 - Ease sensory overstimulation
 - Regulate emotions
- Important considerations
 - Should be able to independently remove
 - 15-20 minutes at a time
 - No more than 5-10% of body weight



Health and Wellness

- **OmniCuff**
 - Hand worn cuff
 - Adapter, basemount, connector
 - Can attach to different utensils
 - Eating, drinking
 - Pen, phone, stylus
 - Other items via connectors
 - Can be used independently by individuals with motor needs



Health and Wellness

- **Evolution Devices**

- **EvoWalk**

- Electrical stimulation and AI
 - Activates muscles with every step
 - Assists in lifting foot and bending knee
 - Small, noninvasive wearable
 - App enabled to monitor progress
 - Foot drop due to TBI, SCI, Stroke, MS
 - Increased speed and distance
 - Decreased falls and foot drag



Health and Wellness

- **Atom Limbs**

- AI powered, noninvasive
- Learns from the users' movements
- Sensors on remaining arm
 - Interpret movement
- Near-full range of motion
- Mind-controlled but not connected to the brain directly!!

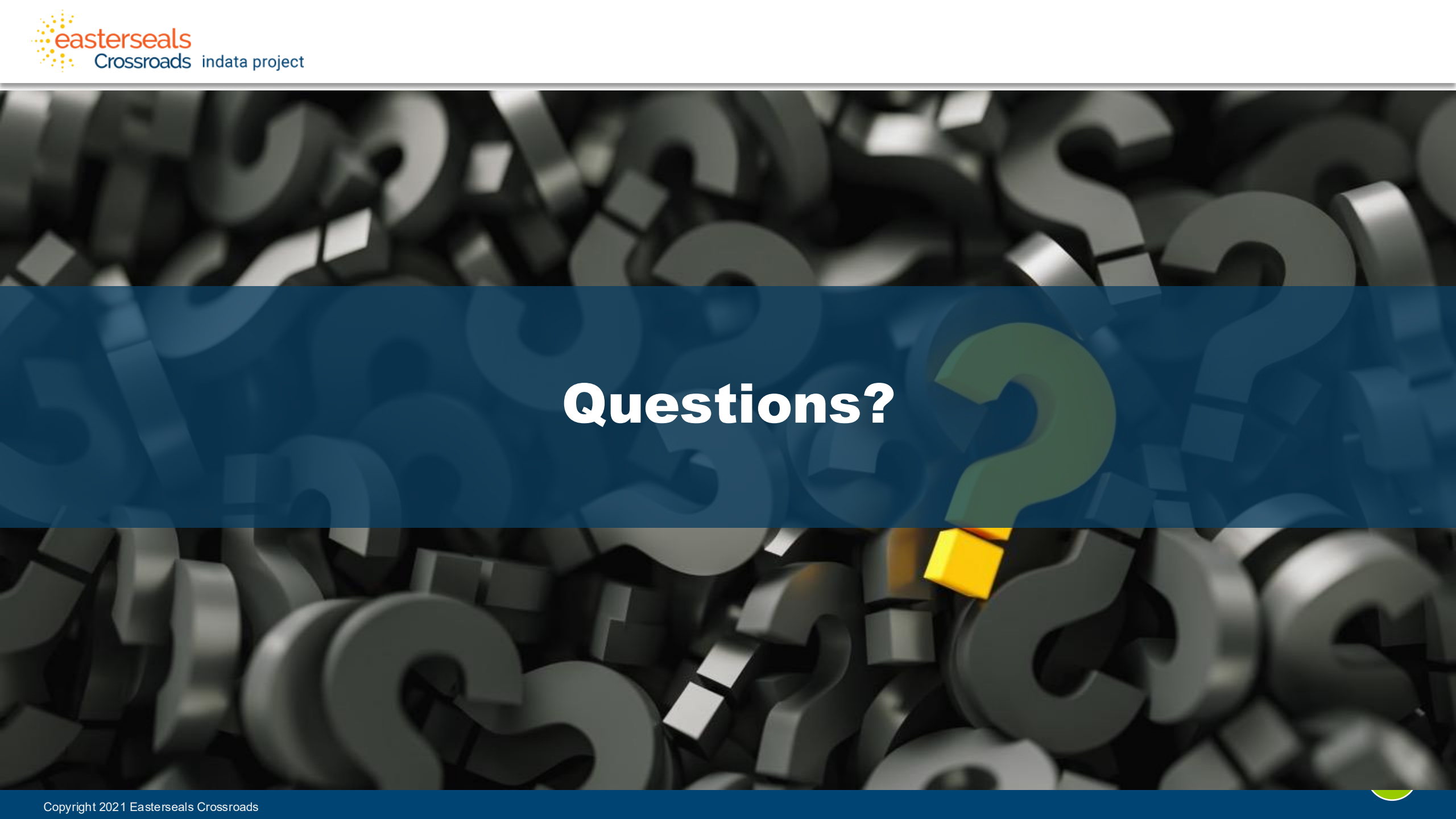


- Other companies, groups, and universities are making strides in this space
 - Using AI, machine learning and 3-D printing
 - More range of motion and independence
 - Less cost (somewhat, sometimes)
- This is only one example, tons of cool stuff out there
 - And coming soon

Health and Wellness

- **Lots of others out there**
 - Allows individuals to stay more independent
 - Remotely monitor health, instantly report changes, monitor changes over time
 - Track and stay safe
 - Dress and eat independently
 - Regulate mood and overstimulation
 - And many other things
 - ****Increased independence****





Questions?