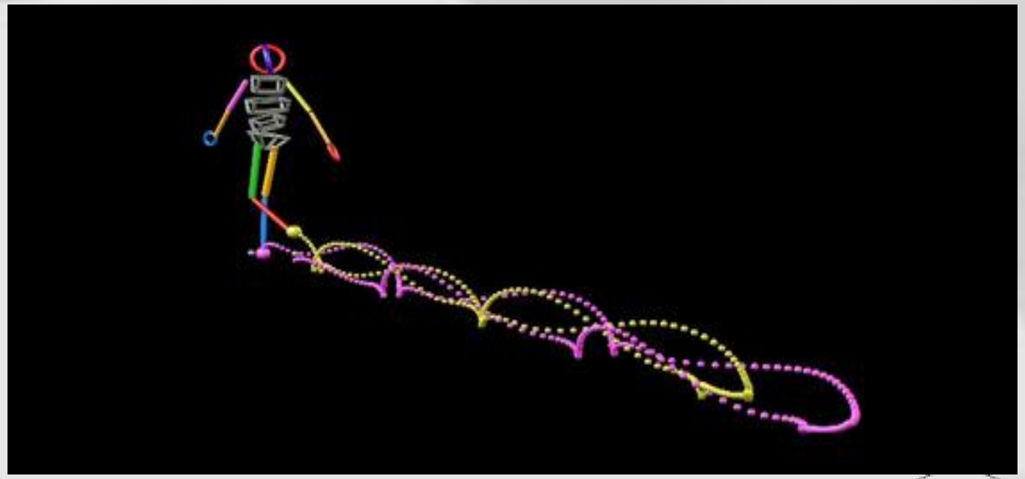
The CAREfall™ Program

Using Science as a Falls Predictor



CAREtech solutions

Enhancing Quality of Life through Intervention in Reducing Falls and Cognitive Decline

CAREfall™

The Problem

- The costs of falls to our healthcare system is estimated to be > $5.6B (2018) and represents over 20% of all injuries (CIHI)
- Falls represent > 6500 deaths (2021) in older adults
- Falls change the trajectory of a person's health
- Caring for falls and rehospitalization is strained due to lack of beds, and beds deemed to be alternative levels of care (ALC)
- Predicting and reducing falls is difficult because of reduced healthcare human resources (HHR)
- Without solid facilitators, new technologies are slow and difficult to implement

CAREfall™ is Intervention

- *By using established, standardized and objective assessments for identifying falls risks, individualized interventions to care routines can be implemented.*

- *The identification and understanding of physical limitations, assists in the ability to modify the living environment, before the falls happen.*

- *This approach will reduce falls risk and create living environments for residents to live a safer and healthier life.*

What is CAREfall™?

- Care*Fall* is an objective Falls Risk assessment using established HealthTech*
- Care*Fall* assessments are completed by the Care*Tech* team and are completed in 30 minutes
- The aim of Care*Fall* is to be the benchmarking standard by which all residents of LTC's and other care settings will be screened.

** Powered by Neuro-Catch & One-Step*

Our CAREfall™ Screening Process

CareFall: Using Science as a Falls Predictor

Initial Visit

CareFall assessors will conduct assessments at scheduled times through on-site clinical teams

Data Interpretation

Our modalities will allow us to collect bio-metric data that would otherwise be impossible to capture without significant cost, time delays or off-site clinical visits .

Care Planning

Our reports will allow a concise means for HHR to create care plans for individuals and intervene with fall intervention strategies to lower falls risk.

Care Implementation

The data will be collected by our team and will create individualized approaches to care to support LTC staff to adopt a proactive approach, ensuring the resident receives the right care, at the right time and in the right place.

Follow-Ups

Follow-ups will ensure that KPI's are being tracked and level of risk identified to determine if changes in the plan of care are warranted. This will also ensure the case mix index scores are reflective of care. requirements.

Cognitive Health

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What is It?

A comprehensive, objective Cognitive Health Assessment based on Neurophysiology rather than a subjective review of behavior and self-report. This data will be utilized to assess risk for falls and assess level of care needs. The initial assessment will provide baseline data that can be then compared to quarterly data to assess and track cognitive changes over time. This will allow to continually and objectively assess risk and level of care.

How We Use it?

EEG recordings as well as recordings during auditory and visual evoked and event-related potential responses are digitally analyzed through a computer software program involving neuro-psychological assessments, cognitive assessments and an EEG utilizing brain performance software.

How Does it Help?

These values are then statistically modelled and analyzed against normative data sets to provide numerical scores indicative of a patient's level of cognitive performance across three key functions: Attention & Concentration, Information Processing and Memory (tracking changes in neural functioning.

Multi-Scan Report

Client Information

YOB: -
Sex: -
Language(s): -
Handedness: -
Occupation: -
Education: -
Chronic Neurological Conditions:
-

Scan Information

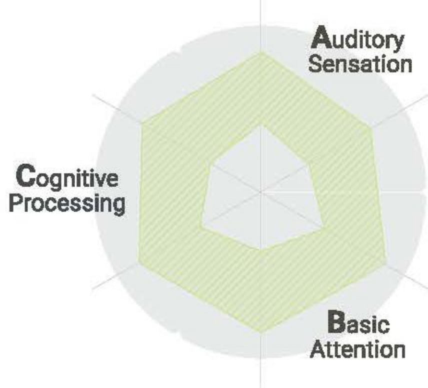
Scan 1: 15/Feb/2024 2:28PM (Baseline)
ID: 0ebc7166-6a6a-4dbe-929a-c7ff630763d2
Scan 2: 21/Mar/2024 2:57PM (Mid Treatment)
ID: 9e52744d-bd18-4990-838a-e33d2bcf5bb5

Scan Results

		Scan 1	Scan 2
Auditory Sensation	N100 Amplitude	1.86 μV (Outside reference range)	4.36 μV (Within reference range)
	N100 Latency	116.00 ms (Within reference range)	104.00 ms (Within reference range)
Basic Attention	P300 Amplitude	2.41 μV (Within reference range)	3.25 μV (Within reference range)
	P300 Latency	276.00 ms (Within reference range)	270.00 ms (Within reference range)
Cognitive Processing	N400 Amplitude	2.02 μV (Within reference range)	1.91 μV (Within reference range)
	N400 Latency	552.00 ms (Within reference range)	446.00 ms (Within reference range)

Within reference range   Outside reference range   Algorithm Selected Peaks
User Selected Peaks

The ABCs of the NeuroCatch® Platform: Understanding Brain Vital Signs



Auditory Sensation (N100) is measured by recording the timing and size of the brain response to the tones heard during the test.

Basic Attention (P300) is measured by recording the timing and size of the brain response to unexpected tones heard during the test.

Cognitive Processing (N400) is measured by recording the timing and size of the brain response to matching and mismatching word pairs.

Hearing Health

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What is It?

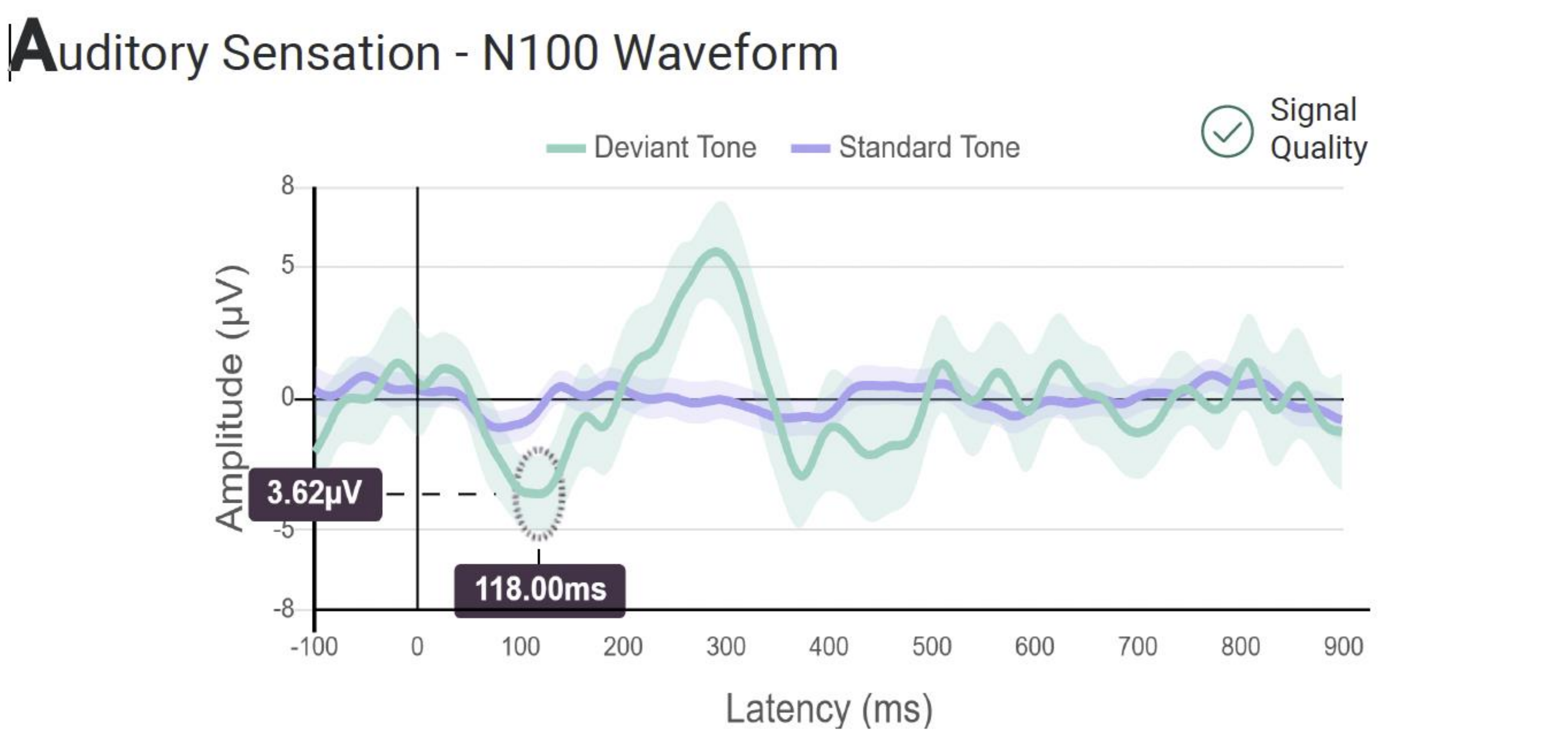
Hearing declines with age. Understanding the base line of this loss is a critical element of balance, social engagement and dementia care. The importance of healthy hearing and its direct relation to cognitive and social health is well established.

How We Use it ?

Determining the level of hearing loss and outlining a care plan including devices and individualized approaches to care planning. Physiological balance mechanisms associated with our hearing is also directly related to reducing falls risks or aversion.

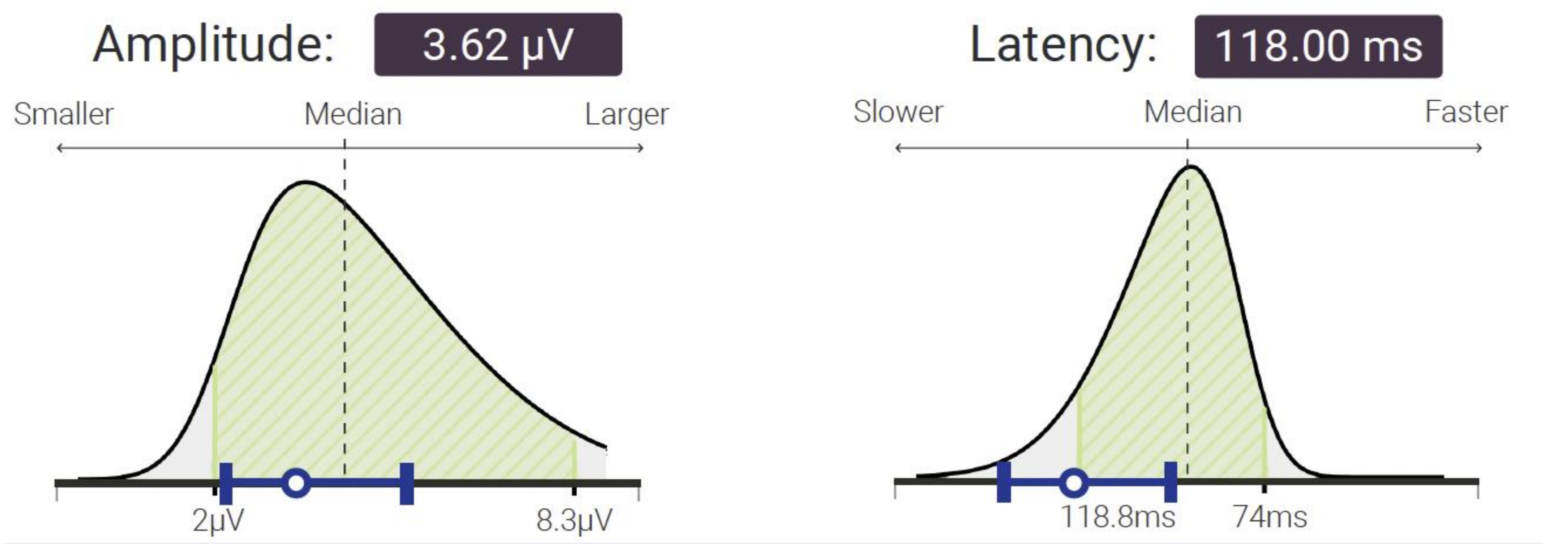
How Does it Help

There is a societal avoidance or reluctance to have regular hearing tests to ensure that proactive interventions can be implemented. Including hearing health as a part of an overall screening process strengthens the entire profile of the resident. Traditionally hearing assessments are not proactively offered in LTCHs.



How to interpret the waveform

The dotted shape identifies the ERP component of interest. The numbers in the boxes represent the exact amplitude and latency result from this scan, and the size of the circle indicates the estimated variability of the result. If no ERP was indicated, this is either due to poor signal quality or no peak could be identified.



How to interpret the bell curves

The bell curves above show the distributions of amplitude and latency values obtained from our reference database. The higher the bell curve, the more people scored within that range. The green shaded area shows where the majority of all respondants results were, with the dotted line indicating the median (typical) response. Results towards the left of the curves respectively represent smaller amplitudes and slower latencies, whereas results towards the right represent larger amplitudes and faster latencies. The blue circle indicates the exact result from this scan, and the “wings” show an estimate of the variability.

Gait Health

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What is It?

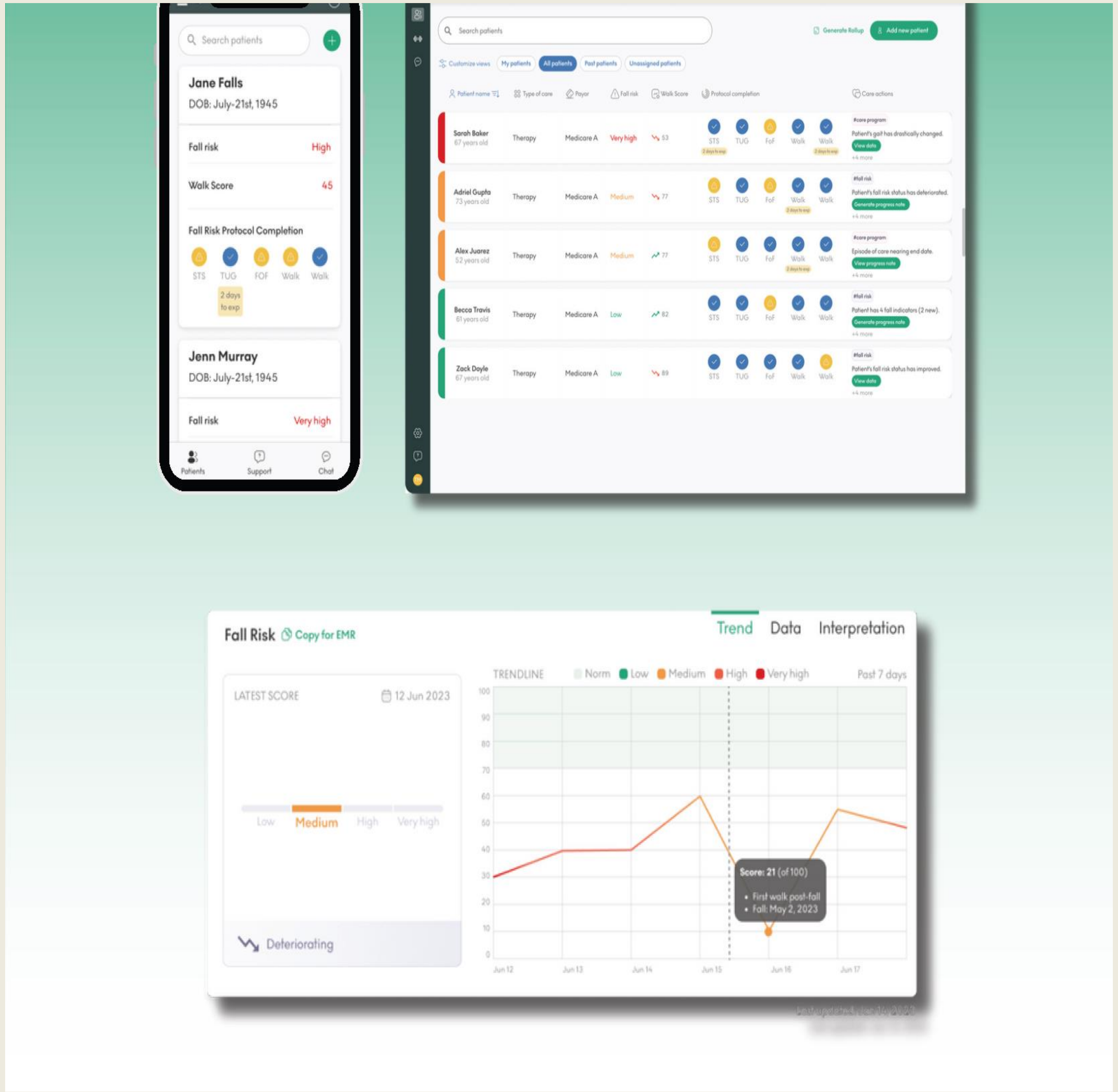
We utilize cutting-edge technology that measures and records gait, stride length and balance with high accuracy. This data is instantly compared to benchmarks to identify fall risk factors. Our tech is easy to implement as we use smartphone technology for an easy to apply assessment. The data is then simplified into our report

How We Use It

It will reduce the assessment time for fall risk, improve quality of fall risk profiling and risk stratification, increase proactive care for those at high risk for falls, decrease incidence of new falls and decrease development of new foot ulcers and diabetic ulcer hospitalizations.

How Does it Help?

We can help reduce operational costs by saving time and staff resources, by proactively identifying gait changes that heighten risk of falls, data collection and analysis and providing evidence-based documentation of care.



Care Planning

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How We Use it ?

Our collaborated data is processed through Vitec RAISoft to produce a risk assessment level and determine the individual care plan.

How Does it Help ?

The ability to see an objective determined risk level and regularly monitor any changes with the resident allows operators to manage their HHR most effectively.

RAISoft algorithms will determine specific changes to the individual at check points and indicate which healthcare practitioner needs to address a particular issue. This allows the operator to better allocate HHR to address the issue while being able to maintain the resident’s changes needs to continue to avoid falls and other potential health risks.

Care Planning

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How We Use it ?

Having base line objective data will better inform care givers information of risk and intervenes with new and existing programs and environmental changes

How Does it Help ?

Ensuring that the right set of healthcare professionals and care givers are engaged instead of the kitchen sink approach will reduce stress on HHR and be more impactful to the resident themselves.

By understanding the person's risk level to this extent will allow for better housing and care to be implemented.

Data/Science

Technology with a Human Touch

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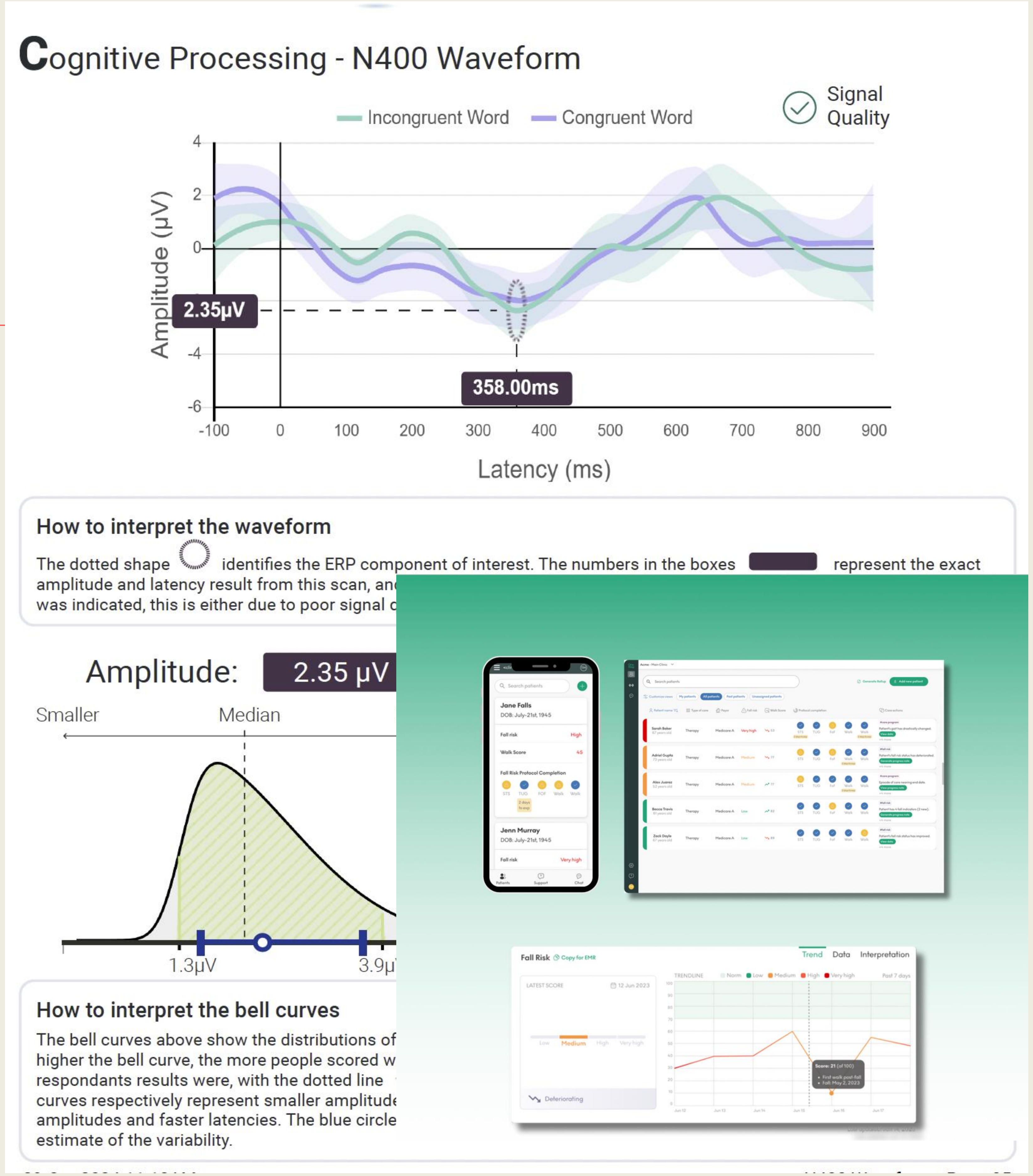
- CareTech has partnered with **HealthTech Connex**, the makers of the **Neuro-Catch** assessment tool out of Vancouver, BC.
  - *Neuro-Catch has been recognized as one of the top 15 Health-Tech companies in the world at the recent International MedTech Conference held in Toronto last in October 2024.*
- CareTech has also partnered with **One Step** for our Gait assessments. **One Step**, an Israeli company has a global footprint, and its technology is simple and powerful to use. Its findings in Europe and the USA have already shown benefit in reduction in falls.



Both agreements has CareTech as their exclusive partner in Canadian Senior's Care

CAREtech solutions

Data/Science

Technology with a Human Touch

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- ❑ CareTech has partnered with **ViTec RAISoft** out of Finland to integrate our data into the interRAI platform.

- ❑ Collaborating our data into the client's care plan is a powerful means of ensuring the *interoperability* of the collected data and better staff engagement, which will lead to better compliance and outcomes.
- ❑ Using the interRAI platform, data collected will be part of CIHI statistics.

Current Pilots

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Where and What?

Pilot 1: Independent Living.

Pilot 2: Behavioral Unit.

Pilot 3: Whole Home.

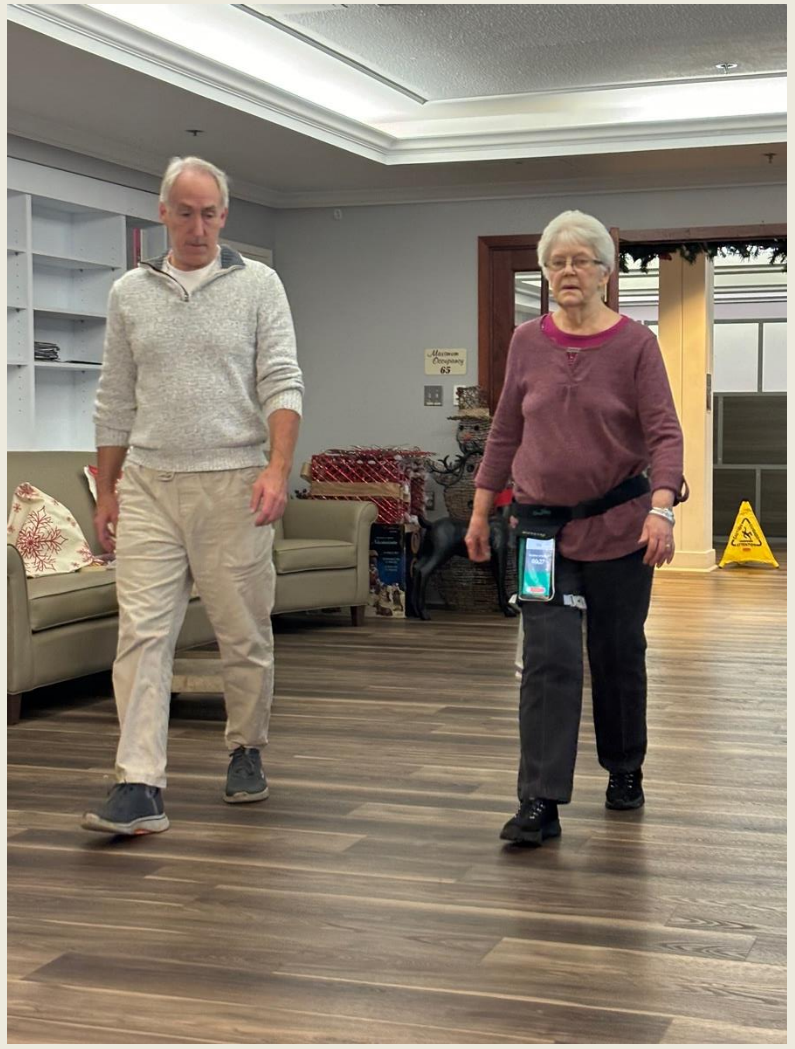
Pilot 4: Restraint Management.

Robust data tracking involves a comprehensive approach to collecting, organizing, and analyzing data to ensure accuracy, reliability, and actionable insights. We combine data from different sources into a unified view. This helps in creating a comprehensive dataset that can provide deeper insights

Current Pilots

CAREfall™

Pilot 1: Independent Living.




Current Pilots

CAREfall™

CAREtech solutions [redacted] **Focus: Fall Risk Prevention**

Demo Recommendations

Medium Fall Risk

Mainly Due To:

1. Cognitive Assessment
2. Sit to Stand

Here are five activities to support cognitive processing, attention, and overall well-being, including physical exercise and meditation.

1. Simple Card Sorting

- **Purpose:** Enhance focus, categorization skills, and processing speed.
- **How to do it:**
  - Provide a deck of playing cards and ask the patient to sort them by color, suit, or number.
    - To increase difficulty, add a time limit or change sorting methods (e.g., sort by suit first, then by color).
    - **Modifications:** Use fewer cards or larger cards if handling or vision is challenging.

2. Word Search or Simple Puzzles

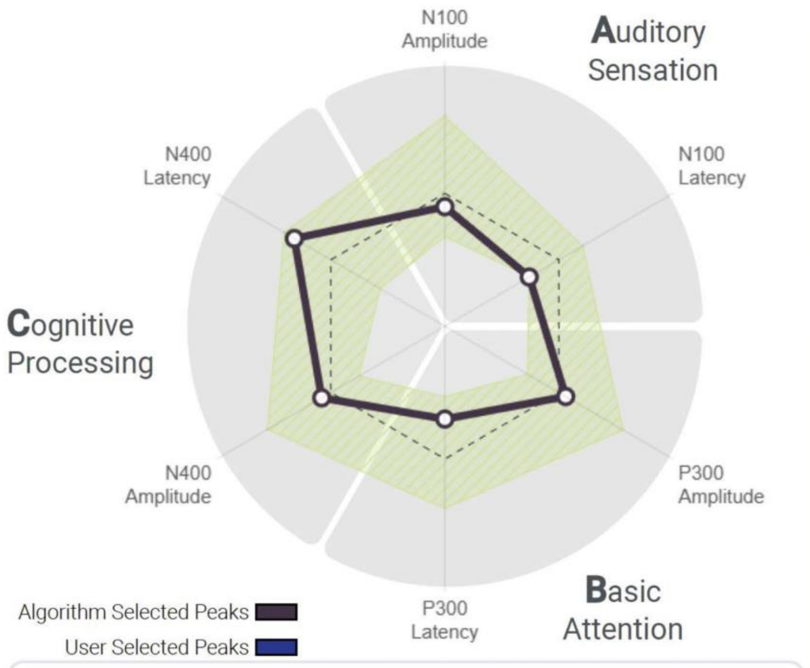
- **Purpose:** Boost sustained attention and visual scanning.
- **How to do it:**
  - Provide a themed word search puzzle that is familiar or interesting to the patient.
  - Ask them to find and circle words within the grid.
    - **Modifications:** Start with smaller, simpler grids and gradually increase difficulty. Large-print options are available if vision is an issue.

3. Chair-Based Exercise

- **Purpose:** Promote blood flow to the brain, which supports cognitive function.
- **How to do it:**
  - Perform seated leg lifts, arm raises, or gentle seated twists.
  - Try 8–10 repetitions of each movement for 5–10 minutes.
    - **Modifications:** For balance or stability, the patient can hold the armrests or be supervised by a caregiver.

CAREtech solutions [redacted] **Focus: Fall Risk Prevention**

Brain Vital Signs



The radar plot
Brain Vital Signs are presented in a radar plot with multiple data points and variation between them plotted on the same scale, respective to a reference database.

Reading the data points
Data points towards the outside of the radar represent larger amplitudes and faster latencies.

Data points towards the inside of the radar represent smaller amplitudes and slower latencies.

Reference Range The Reference Range in the NeuroCatch® Radar Plot represents the distribution of scan results from a sample of the general population of all ages and sexes. The dotted line represents the median result for each ERP.

Factors Affecting Outcomes

Mood | Sleep | Caffeine | Alcohol | Nicotine | Psycho-actives | Medication

Medications:

Answer Indicators: V.Good 4-6 Yes
These icons indicate the answer provided by the client during the pre-scan survey.

Change Indicators:
These icons indicate that the client's answer was more, less, or the same as a typical day.

CAREtech solutions [redacted] **Focus: Fall Risk Prevention**

Standard Tests	Baseline	Previous Week	This Week Oct 29 2024	Current State
Sit to Stand (repetitions)	12 Oct 29 2024	-	12	Abnormal
Timed Up and Go (sec)	8.5 Oct 29 2024	-	8.5	Normal
Functional reach (cm)	-	-	-	-

Questionnaires	Baseline	Previous Week	This Week	Current State
Falls efficacy scale	-	-	-	-
Lower extremity functional scale	-	-	-	-
Fear of falls	-	-	-	-

Assistive Levels	Baseline Oct 29 2024	Previous Week	This Week Oct 29 2024	Current State
Assistive Device	None	-	None	-
Level of Assistance	Independent	-	Independent	-

Rallying Points

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Why Care*Fall* ?

- There is a significant shortage of Healthcare Human Resources (HHR) across all sectors of healthcare
  - *Those in caregiving are burnt out and that makes new technology difficult to adapt*
- Objective testing does not happen because of the ***cost, time*** and ***inconvenience*** to both the resident and the caregivers
  - *we bring the technology to the resident and complete the assessment*
- Providing objective, predictive evidence will decrease the ***risk*** of falls, the ***numbe***r of falls, the ***cost*** of falls, and will increase the quality of life of the individual residents.
- Care*Fall* will provide significant predictors to access those on waiting lists and in the community as to their best ALC

The Pillars of CareFall

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The New Vital Signs of Falls Prediction

- ❑ Intervention
  - ❑ *Utilizing the latest HealthTech to tailor care plans through objective measures*
- ❑ Interoperability
  - ❑ *Ensuring safe data storage and transfer to usable platforms in line with standardized protocols*
- ❑ ALC Identification
  - ❑ *Benchmarking for accurate decision making*
- ❑ Risk Management
  - ❑ *Working with insurers to reduce falls risk and lower premiums*

CAREfall™

Advantage

CareTeam

The assessments are completed by the CareFall team and are schedule on-site, no travel to clinics or other facilities or staffing requirements.

Care Planning Education

CareFall reports can offer an important tool when educating staff on new care plans or adjustments to existing care plans.

Care Planning Approach

Simplified objective data report for enhanced care planning approach for each resident.

Mobility Device Assessments

CareFall Data can ensure the proper mobility device is prescribed.

Progression Status

Comparative data on-hand to monitor and accurately score the progression or decline in status of each resident.

Alternative Levels of Care

CareFall data can be used for alternative levels of care decisions.

HHH Staffing

Concisely manage HHH staff for easier risk population alignment (ie: falls unit for high risk residence).

Funding

Data based information for allocation of targeted funding.

Least Restraint Approach

Data can help ensure we are not resorting to restraints without ensuring optimal capabilities of each resident.

Increased Quality of Life

CareFall as part of overall care plan will reduce falls and the risk of falls and therefore reduce the adverse effects a resident will experience with a fall.

Utilizing Care*Fall* Reports include many advantages

Canada www.carefall.ca jim@carefall.ca

Partner Eco-System

Strategic Alignment

Part of Vitec Software Group

CAREfall

Our Team

Candace Chartier, President & Chief Executive Officer (CEO)

Candace is the President & CEO of CTS, and her role is the accountability for overall CareFall management and ensuring the implementation of a phased approach is maintained and deliverables met with scheduled communication and progress updates. Candace brings a wealth of heath care experience to her many leadership roles.

A Registered Nurse by training, she spent the early days of her career in the acute care sector, rehabilitation, community nursing, and aeromedical nursing fields. Candace was with OMNI Health Care for 17 years prior to the joining the Ontario Long Term Care Association. For the last seven years of her time at OMNI she held the Chief Operations Officer role and was invested in the development of the Local Health Integration Networks and the development of the new Long- Term Care Homes Act in 2007.
Candace spent seven years as CEO of the Ontario Long Term Care Association and is also the CEO of Safe Haven Consulting Inc. Candace has established herself as a caring and compassionate leader with an extensive track record of advocating for change that benefits seniors and leading large provincial projects that improve the life of seniors living in LTCHs. Her leadership will be instrumental in the implementation of the CareFall solution.

CAREfall

Our Team

Jennifer Chladny, Chief Clinical Advisor (CCA)

With over 20 years of experience in managing National Projects aimed at returning individuals to their optimal functioning and in managing complex health and disability issues, Jennifer Chladny oversees the CareFall project's assessment implementation and on-going daily operations.

Jennifer will provide cross-functional, cross-disciplinary project management/project leadership. She develops and documents complex project analysis and reporting requirements and serve as the liaison by understanding and interpreting project requirements, mapping process models, and designing technical and innovative solutions to satisfy on-going CareFall requirements.

Jennifer will define and refine project scope and objectives based on LTC industry unit needs combined with a thorough clinical understanding of enterprise systems and industry requirements. She will provide data for Health Care leadership to make decisions of considerable impact and consequences involving quality operations, improved care and reduced costs

CAREfall

Our Team

Jim Closs, Chief Experience Officer (CXO)

With over 30 years of experience in managing, distributing, educating, and launching innovative products and services within the Aging in Place and Falls Prevention space, (including the initial roll-out of the Ontario Ministry of Health's Safe Patient Handling funding in the early 2000's) Jim oversees the CareFall project's vendor relations, business operations and development. Jim also provides project management/project leadership as well as explore the expanding services available through our vendor partners and any new relationships that will evolve. Jim's relationships with national agencies and healthcare companies with provide opportunity for the CareFall program to expand in an efficient and practical format. He also ensures that the provided software is current and operating to expect levels of data collection and monitoring as well as continue to build the CareFall brand within Canadian Healthcare

Contact Us

CAREtech solutions

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