The Total Solutions Package

• The Total Solutions Package is an evidence based non-pharmacological offering that utilizes medically necessary modalities to mitigate many of the major maladies of aging. The foundation of the Total Solutions Package is the Aging Gracefully Program which has been clinically proven to lower the cost of care by increasing FIM scores and has been established in over 1000 senior care facilities throughout the US, utilizing over 2,000,000 patient treatments with zero injuries.

• The program tackles the most pressing issues within the senior care environment such as:
  • Sarcopenia (muscle loss)
  • **Balance and Fall Reduction**
  • Mobility Issues
  • Pain Modulation
  • Circulatory and Ulceration
  • Osteoporosis and Osteopenia

• Due to the urgency of addressing the high costs and litigious exposure in treatment of the elderly, this comprehensive package has been created to get the greatest number of senior facilities in compliance and increase their bottom line.
The Problem

- Falls are the leading cause of injury-related visits to the emergency room in the US.
- From 2000 to 2040 the CDC predicts that the number of people age 65 and older will increase from 43.8 million to 77.2 million.
- It is estimated that in 2000 direct medical costs totaled $0.2 billion for fatal falls and $19 billion for nonfatal falls-related injuries. According to the NIH, by 2020 the costs are expected to rise to $43.8 billion per year.
- Among the 65+ populace, falls are:
  1. The leading cause of injury death
  2. The most common cause of non-fatal injuries
  3. The leading cause for trauma related hospital admissions
Understanding the problem

- Balance is defined as the ability to maintain your center of gravity within your base of support. Keeping your balance requires integration of inputs from multiple senses including vision, vestibular system (inner ear), and proprioception. For most people, balance is automatic process done without thinking. Imbalance, dizziness, and vertigo can occur when one of these systems breaks down.

- The balanceback™ Therapy Platforms provides a mechanism to simultaneously train these three systems by performing repetitious actions which make balance corrections more automatic, thus resulting in increased cognitive pathways.
Falls are **not** an inevitable consequence of aging, but they do occur more often among older adults because of risk factors such as muscle weakness or poor balance, peripheral neuropathy, chronic health conditions, vision changes, and or medication side effects. 1 in 3 persons over 65 years fall each year.

### Understanding the Risk factors

**Modifiable Risk Factors**

- Taking four or more medications
- Lower Body Weakness (Graafmans, 1996)
- Problems with Walking and Balance (AGS 2001)

**Modify these risk factors by:**

- Improving lower body strength
- Improving balance (Judge 1993, Lord 1993, Campbell 1999)
- Reviewing medications, reducing wherever/ however possible
- Improving gait and posture
Who Does It Benefit?

- **Orthopedic Rehabilitation**
  - ACL repairs
  - Lower extremity joint replacement

- **Balance Disorders**
  - Meniere’s Disease
  - Ataxia (lack of motor control)

- **Brain Injuries**
  - Traumatic Brain Injury (TBI)
  - Stroke
  - Concussions

- **Others**
  - Senior Falls
  - Peripheral Neuropathy
The Solution

• Creating a multidimensional approach to the assessment and treatment of individuals who suffer from poor balance and mobility deficits.

• Leveraging the latest technology and principles to create a comprehensive treatment protocol that addresses as many underlying comorbidities such as disuse atrophy, sensory impairments, vestibular deficits, etc.

• The Korebalance Therapy Platforms are an essential treatment tool that established the foundation for a true multidisciplinary wellness plan.

• Due to the urgency of addressing the high costs and litigious exposure in treatment of the elderly, this comprehensive package has been created to get the greatest number of senior facilities in compliance and increase their bottom line.
Fall Risk Assessment

• Standardized balance tests
  – BERG test
  – Timed get up and go (TUG)
  – Dynamic gait analysis
  – ROM/Strength measurements- hip and knee

• Korebalance Test  (Computerized Posturography)
  – Static Testing
  – Dynamic Testing
What is Korebalance?

- The korebalance system is both a balance assessment device as well as a balance training device.

- A “tool” to help you treat patients suffering from Balance Disorders, Orthopedic Rehabilitation, or Traumatic Brain Injuries.

- Korebalace is the only system with Variable Speed Reaction Training (VSR). VSR Training challenges a patient’s balance through various velocities, angles, and directions while exercising their vision, vestibular and proprioceptive.

- Korebalance also challenges a patients Cognition to help develop improvements in balance while making cognitive decisions in relation to tasks.
Korebalance Features

1. Graphical User Interface
2. Keyboard Tray
3. Safety Handlebars
4. Vertical Assembly
5. Base Assembly
Fall Risk Training

• Standardized balance & fall prevention training
  – Strength Training
  – Flexibility Training
  – Mobility Training
  – Coordination Training
  – Patient Education

• KoreBalance Trainer
  – Neverball 3D
    • Cognitive Interaction
    • Variable Speed Reaction Training
Korebalance Product Line

"Your Balance Solution Provider"

- Fun, Interactive Testing and Training
- Two Large, Enhanced Touch Screen/Computer Options, (22" or 19"), Top of the Line 22", Model is Medical Grade
- Easy Access Base with Fully Adjustable Safety Rails
- Exercise Band Attachment Points
- Computer Controlled Adjustable Stability
- Data System 110 Hz

- Fun, Interactive Testing and Training
- Large 17" Touch Screen/Computer Combination
- Easy Access Base with Safety Rails
- Exercise Band Attachment Points
- Computer Controlled Adjustable Stability
- Data System 110 Hz

- Portable System and Stand With 17” Touchscreen/Computer
- Compatible With the Nautilus Concussion Management Program
- Manually Adjusted Stability With Hand Pump
- Data System 18 Hz

- Portable System and Stand With Laptop
- Compatible With the Nautilus Concussion Management Program
- Manually Adjusted Stability With Hand Pump
- Data System 18 Hz

- Proprioception Training
- Manually Adjusted Stability With Hand Pump
- Portable
Safety Features

Patient Safety Belt
• KB 17”
• KB Premier

Adjustable Safety Rails
• KB Premier
Spatial Orientation & Disequilibrium Disorders are a major problem for our pilots in the Military. However, a protocol has been developed that has been 97% effective in addressing many of the symptoms of these disorders.

A study of 140 patients over 14 months using the Korebalance System found that there was an improvement of 97% for a variety of balance disorders.

Not only was the therapy effective, but the patients enjoyed the therapy and found it challenging and fun, which made patient compliance excellent. The software is similar to a video game and gives the patient a score at the end of each sessions.
Balance and TBI
A function of falls in the elderly

Post concussion injuries in the athlete/client often cause vestibular disorders – some say up to 90%. Vestibular disorders in the assessment and treatment of post concussed patient/athlete is often missed with the general screens for balance and more sensitive testing is needed. At Werner Institute, the use of Medfit and the KOREBALANCE systems are used daily to initially assess the vestibular and balance system and allow us to progressively challenge the patient/athlete. We are believers in this technology and we endorse its use.

Brian Werner, PT, MPT
President
Werner Institute for Balance and Dizziness
Home Screen User Interface

- **HOME BACK**
- **TESTS**
- **RESULTS**
- **LOGOUT**

![Diagram of the Home Screen User Interface with options like Home, Tests, Results, Logout, Home Back, Games, and Administration.]
Static Testing is intended to evaluate a person’s overall stability while attempting to stand still (static) on an unstable platform.

An inability to maintain a static position (score < 700) indicates a higher risk for falling. Scores range from 0 (Best) to 5000 (Worst) during 30 sec.

Quadrant scores can also give you an indication as to the directions favored by the person.

Customizable Variables

<table>
<thead>
<tr>
<th>Platform Stability</th>
<th>Eyes – Open, Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feet – Both, R, L</td>
<td>Weights – 0, 10, 20, 30, 40</td>
</tr>
<tr>
<td>Hands – On, Off</td>
<td>Time – 30, 60, 90, 8min, 15min</td>
</tr>
</tbody>
</table>
Dynamic Test Screen

Dynamic Testing is intended to evaluate a person’s overall stability while attempting to move their Center of Gravity to match a pattern shown on the screen on an unstable platform.

An inability to maintain a dynamic position (score < 2000) indicates a higher risk for falling during typical activities such as walking.

**Customizable Variables**

- **Platform Stability**
- **Feet** – Both, R, L
- **Shape** – 6 to choose
- **Direction** – CW, CCW
- **Time** – 30/60/90 sec & 8/15 min
- **Speed** – Slow, Med, Fast
- **Shape** – Small, Med, Large
- **Size** – Small, Med, Large
- **Direction** – CW, CCW
- **Hands** – On, Off
Create Customized Treatment Plans

- Difficulty Level: Less → More
- Pressure: 8 → 0
- Hands: ON → OFF
- Shape: Ellipse → Circle → Flower
- Size: Small → Med → Large
- Speed: Slow → Med → Fast
- Direction: Toward Dominant → Away from
Result Pages

Summary of Results
This screen shot shows the sum of all test results for a particular patient.

Individual Test Result
This screen shot shows the individual test result for a particular test of an individual.
Empirical Guidelines for Fall Reduction

Balance Index (BI) Scores

<table>
<thead>
<tr>
<th>Normal</th>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-700</td>
<td>701-750</td>
<td>751-800</td>
<td>801-1500</td>
</tr>
<tr>
<td>0-2000</td>
<td>2001-2500</td>
<td>2501-3000</td>
<td>3001-4000</td>
</tr>
</tbody>
</table>

- 30 second - Static Test Score – 6.0 PSI
- 30 second - Dynamic Test Score – 6.0 PSI – Circle

Static Test score of ≤ 700 could be considered normal.
Dynamic Test of ≤ 2000 could be considered normal.

Case Study: The graph to the right is a case study of a 76 year old patient who trained on the korebalance system for two months. There was a significant improvement in their Balance Index.
**Fun, Interactive Training**

**Neverball** – A 3 dimensional balance training program that incorporates cognitive interactions for improved neuro pathways and enhanced cognition.

**Variable Speed Reaction (VSR)**
- You control the platform which controls the ball

**Cognitive Interactions**
- Interact in a 3 dimensional environment
- Advance through various levels as you beat mazes and various challenges
- Gather different colored coins for more points
- Enhance recall memory and neuropathways by repetition
Re-establish Autonomic Responses

**Cognitive Interaction** – Neverball’s 3D interactive balance training helps to incorporate cognitive thought processes for improvements in neuro synaptic pathways, helping to train a patient’s balance while making strategic decisions to increase scores and progress through rehab training.

**Variable Speed Reactive Training** – Variable movements on the dynamic surface occur in 360° with various angular displacements, speed, tilt sensitivity, and corrective reactive movements. Maintaining and controlling the lower body movements while training in the 3D environment helps to develop coordination and balance skills.

**Autonomic Response** – Together the Cognitive Interactions along with Variable Speed Reactive Training creates movements and reactions that are subconscious and autonomic allowing for better responses to external and internal factors that may compromise balance in a given moment.
The advantage of “automatic” balance

• Learning new skills or retraining old skills requires the brain to work efficiently.
• Trying and retrying a new skill, involves a lot of brain communication between the skill center and thinking center in our brain.
• The skill center (cerebellum) is in charge of making all these learning's automatic.
• When we can do things automatically (bypassing the thinking brain), we can do complex motor skills in a smooth coordinated manner.
• Making skills automatic is a matter of repetition; it is well understood that exercises can retrain Neuropathways and in some instances generate new ones, resulting in increased brain power.
• The Korebalance uses the latest technology to makes these repetitive exercises fun and engaging.
# Matrix of Challenge

<table>
<thead>
<tr>
<th>KB Training</th>
<th>Static</th>
<th>Dynamic</th>
<th>3D Neverball</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprioception</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Vestibular</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Vision</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Real Time Biofeedback</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Core Muscle Training</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Dual Tasking</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>VSR</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Visual Sensitivity</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>
# Progression of Training Difficulty

<table>
<thead>
<tr>
<th></th>
<th>Easy</th>
<th>Medium</th>
<th>Hard</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PSI</strong></td>
<td>8 PSI</td>
<td>6 PSI</td>
<td>4 PSI</td>
<td>2 PSI</td>
</tr>
<tr>
<td><strong>Static</strong></td>
<td>Eyes Open</td>
<td>Eyes Open</td>
<td>Eyes Closed</td>
<td>Eyes Closed</td>
</tr>
<tr>
<td></td>
<td>Arms by side</td>
<td>Arms cross chest</td>
<td>Arms by side</td>
<td>Arms crossed</td>
</tr>
<tr>
<td><strong>Dynamic</strong></td>
<td>Medium Shape</td>
<td>Medium Shape</td>
<td>Small or Large</td>
<td>Small or Large</td>
</tr>
<tr>
<td></td>
<td>X &amp; Y Axis</td>
<td>Oval / Circle</td>
<td>Shape Square /</td>
<td>Shape Medium-Fast</td>
</tr>
<tr>
<td></td>
<td>Medium Speed</td>
<td>Medium Speed</td>
<td>Diamond</td>
<td>Speed</td>
</tr>
<tr>
<td>3D game</td>
<td>Level 1</td>
<td>Level 2</td>
<td>Level 3</td>
<td>Level 4</td>
</tr>
<tr>
<td></td>
<td>(Collect Coins)</td>
<td>(Coins &amp; Maze)</td>
<td>(Coin &amp; Cognitive</td>
<td>(Coin, Maze, Cognitive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interaction)</td>
<td>Interaction)</td>
</tr>
<tr>
<td><strong>Body Position</strong></td>
<td>Arms by side</td>
<td>Arms cross chest</td>
<td>Arms out to side</td>
<td>Arms moving in patterns</td>
</tr>
</tbody>
</table>

- **Progression:**
  - **Easy**:
    - PSI: 8 PSI
    - Static: Eyes Open, Arms by side
    - Dynamic: Medium Shape in X & Y Axis, Medium Speed
    - 3D game: Level 1 (Collect Coins)
    - Body Position: Arms by side
  - **Medium**:
    - PSI: 6 PSI
    - Static: Eyes Open, Arms by side
    - Dynamic: Medium Shape in Oval / Circle, Medium Speed
    - 3D game: Level 2 (Coins & Maze)
    - Body Position: Arms cross chest
  - **Hard**:
    - PSI: 4 PSI
    - Static: Eyes Closed, Arms by side
    - Dynamic: Small or Large Shape in Square / Diamond, Medium-Fast Speed
    - 3D game: Level 3 (Coin & Cognitive Interaction)
    - Body Position: Arms out to side
  - **Advanced**:
    - PSI: 2 PSI
    - Static: Eyes Closed, Arms crossed
    - Dynamic: Small or Large Shape in Medium-Fast Speed
    - 3D game: Level 4 (Coin, Maze, Cognitive Interaction)
    - Body Position: Arms moving in patterns
Competitive Comparison

Korebalance vs. Biodex SD

- Bigger touch screen 17, 19 or 22"
- Bigger platform surface
- Patient Safety Belt for safe testing / training
- Lower step up height
- Larger footprint for more stability
- Interactive cognitive training
- Three dimensional games
- Exercise attachment points
- Patent Pending bladder system
- 500 pound capacity vs. 400 for BD
- Infinite adjustability vs. spring loaded with 12 settings
- 365 pound product weight vs. 195 for Biodex- much more stable!
- Dozens of training and testing modes vs. only 6 training modes for BD

Adjustable arms on KB 19” and 22”
Biodex Norms – are they applicable?

The Biodex Normative Data consists of only 100 people with a mean age of 45 and standard deviation of 10 yrs. (i.e. very small sample population and the majority of them were from age 35-55). The oldest person in the data was 72 years of age.

This is a very small sample population to make comparisons to and the age range is very condensed so you may only have 3 or 4 people you are making comparisons to if you are testing a 50 year old male, and zero comparisons if you are testing someone over the age of 72.
Billing Code Information - Summary

- 97112  Neuromuscular re-education  $32.58
- 97530  Therapeutic activities  $32.59
- 97750  Physical performance test (with report)  $33.35
- 97110  Therapeutic exercises  $31.00

- Typical treatment duration:  15 min.
- Amount of visits per patient:  10-12
- Typical reimbursement/treatment:  $30

ROI Assumptions

Lease payment estimate based on a $18,995 lease, 5 years, $1 buyout:  $375/mo.
(Other leases available)

Eight patients a day average nets $3365 per month after labor and lease payment.

Disclaimer: Reimbursement is based on “medically necessary” services, which are determined by your insurance carriers, federal entitlement programs, and provider contracts. Each provider is personally responsible for researching their own local medical review policies, documentation of medical necessity, and accurately reporting the services delivered. Actual revenue will vary based upon the providers’ own geographical location. For specific questions on billing and a free initial 20 minute consultation please contact our health care compliance professional:

Bryant (Pete) Goldman, CEO, CHC, CCEP
Total Healthcare Compliance, Inc.
520-742-0932  goldmon@comcast.net
Conclusion

The Korebalance system offers a practical, effective and economical tool for assessing and treating balance disorders in a variety of settings such as Senior Care Facilities, Hospitals, Chiropractic offices and PT clinics. The adaptability of the system also makes its use suitable for all skill levels and all age ranges.

Not only will facilities be able to better rehabilitate and train individuals with balance issues, but they will also bring in new revenue streams by utilizing the available billing codes. In addition, senior care facilities who have live in residents will potentially reduce the likelihood of lawsuits and improve their overall profitability by maintaining a high census and reducing the number of injury related falls.