



Advancing the diagnosis  
and treatment of dizziness,  
vertigo and balance disorders.

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## Renowned for research, diagnosis, treatment and rehabilitation of dizziness, vertigo and balance disorders

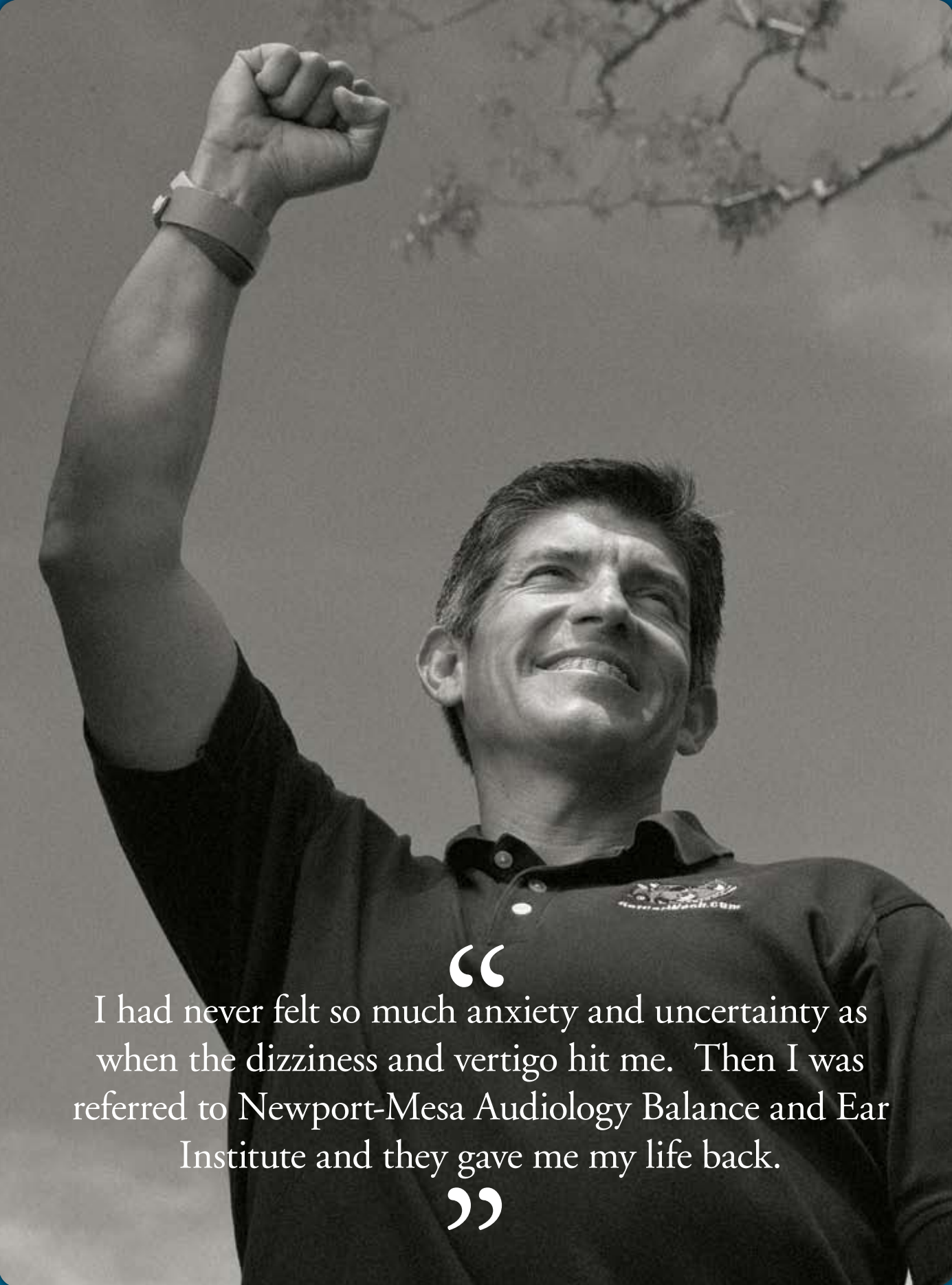
Dizziness, vertigo and loss of balance are among today's most frequently heard medical complaints. And though fairly common, these symptoms often point to an underlying condition that if left untreated can impact patients' quality of life and increase their risk of fatal or crippling falls.

Newport-Mesa Audiology Balance and Ear Institute is among the nation's foremost authorities for the research, diagnosis, treatment and rehabilitation of vertigo, dizziness and balance disorders. Since 1977, founder Dr. Howard Mango and his team of doctors of audiology have seen and treated more than 30,000 patients for dizziness, vertigo, balance disorders and hearing problems – including tinnitus, which many mistakenly believed to be an untreatable condition.

### We exist to support you and your practice

Utilizing the latest technologies and techniques, the Institute's highly skilled experts partner closely with referring physicians to quickly identify and resolve patients' ongoing complaints. The Institute's simple, single-minded goal is to restore the balance patients need to comfortably resume their daily activities.

The Institute seeks to enhance your individualized care, not replace it. After successfully completing treatment, patients are immediately returned to their referring doctor, along with a detailed report and explanation of their evaluation, therapies provided and outcome.



“  
I had never felt so much anxiety and uncertainty as when the dizziness and vertigo hit me. Then I was referred to Newport-Mesa Audiology Balance and Ear Institute and they gave me my life back.  
”

# The vestibular diagnostic and rehabilitation experts

There are three critical systems continuously at play, helping maintain balance and equilibrium. Whether patients live normal, productive lives depends on the proper, simultaneous function of at least two of the systems, which include:

## Vestibular labyrinth

Minute inner-ear structures that detect gravity, vertical and horizontal motion, and monitor rotation of the head. Because of its complexity, the labyrinth can be the source of chronic, frequently debilitating, motion-intolerance and balance disorders.

## Visual

Eyes telegraph the body's movement and position in space to the brain.

## Somatosensory

Nerves in the skin, joints and muscles that inform the brain about body movement and position.

## A multi-million dollar technology investment, now at your disposal



Every year, a large percentage of dizzy patients go undiagnosed, mainly because specialized resources aren't readily available to most doctors. As a leader in the field, Newport-Mesa Audiology Balance and Ear Institute has invested millions to equip our team with the latest, most advanced technologies – including the EPLEY Omniax® System for treating difficult-to-diagnose vertigo cases, including BPPV.

We are the only facility of our kind to offer this unique combination of diagnostic and therapeutic resources. This fact, along with ongoing training and specialized expertise of our doctors of audiology, distinguishes the Institute from virtually all other institutions.



# Which patients benefit most from our specialized treatment and care?

Patients with acute, chronic, undiagnosed or unexplained dizziness and balance complaints make excellent candidates for an Institute referral. Those who have undergone normal electronystagmography (ENG) or videonystagmography (VNG) without conclusive results may also benefit, as well as those with:

- Vertigo or dizziness that is unresponsive to traditional medical management
- Benign Paroxysmal Positional Vertigo (BPPV)
- Vestibular migraine and migraine variants
- Motion disorders
- Gait or balance disorders that surface during neurologic evaluation
- Persistent symptoms following chemotherapy, aminoglycoside therapy or inner ear surgery
- Sudden, gradual or progressive hearing loss
- Asymmetrical hearing loss
- Tinnitus
- Hearing aids
- Children with chronic ear infections and speech delay
- Infants who cannot be tested using conventional audiometry

## National and international referral partner network

Physicians from inside and outside the United States entrust their hard-to-diagnose dizziness and balance patients to the Institute. Our fast-growing referral network consists of a wide-ranging group of highly regarded specialists, including:

- Otolaryngologists
- Neurologists
- Internists and Family Practitioners
- Cardiologists
- Pediatricians
- Neurotologists



# Proven protocols for diagnosis, treatment and rehabilitation

To achieve a true differential diagnosis and recommend the most clinically appropriate treatment, the Institute employs proven methodologies and protocols that combine to provide medicine's most comprehensive evaluation and treatment. To our knowledge we are the only facility capable of isolating and testing all ten organs of the inner ear.



## At the Institute, isolating and evaluating the vestibular system includes the following tests:

### **Comprehensive Diagnostic Audiological Evaluation**

Includes video otoscopy, tympanometry, acoustic reflexes with ipsilateral and contralateral stimulation, otoacoustic emissions (OAEs), pure tone audiometry, speech recognition thresholds, and word recognition thresholds.

### **Vestibular Evoked Myogenic Potential (VEMP)**

When sound stimulates the saccule, a response travels through the inferior vestibular nerve to the vestibular nucleus in the brainstem. Neural impulses are then relayed through the vestibulospinal tract to the neck muscles. This test provides critical information regarding the integrity of the saccule and inferior vestibular nerve.

### **Vestibular Autorotation Testing (VAT)**

Provides information about the high frequency horizontal and vertical vestibulo-ocular reflex (VOR); the primary function of the VOR is to stabilize the eyes to allow clear vision during motion, including normal daily life activities such as walking, bending and turning.

**Computerized Dynamic Visual Acuity Test (CDVAT)** Provides additional data regarding the VOR function in the horizontal and vertical planes.

### **Computerized Dynamic Posturography (CDP)**

A unique assessment technique used to objectively quantify and differentiate the wide variety of possible vestibular, sensory, motor, and central adaptive impairments of balance control. CDP can identify and distinguish functional impairments associated with certain pathological processes.

### **Videonystagmography (VNG)**

The VNG is a three-part evaluation that assesses the inner ear and central functions of the motor system. First is the oculomotor exam which assesses the patient's eye movements as they follow a moving target. The second part tests the patient's response to various head positions. Finally, the caloric test independently evaluates the horizontal semicircular canals and the vestibular nerves.

### **Rotational Chair Examination (RC)**

The advanced Neuro Kinetics rotational chair quantifies bilateral vestibular system weakness and independent utricle function. It allows thorough assessment of vestibular compensation, and is used to identify central vestibular system disorders in the presence of a normal caloric testing. It is also the preferred method of pediatric vestibular testing.

### **Cochlear Hydrops Analysis Masking Procedure (CHAMP)**

A modification of the standard auditory brainstem response (ABR) test, CHAMP is used to identify cochlear hydrops or Meniere's disease. The standard ABR is measured with a click stimulus that activates the entire cochlea. With the CHAMP, the click stimulus is mixed with increasing amounts of high-pass masking noise. Resulting waveforms provide detailed information on basilar membrane response, aiding in accurate differential diagnosis.

# Vestibular Rehabilitation Therapy helps return patients to normal activities

In the United States, falls are a leading cause of fatal and nonfatal injuries in people ages 65 and older. The cost of these injuries to families and to the healthcare system is enormous.

To mitigate this expense, many health plans claim to provide “fall prevention” programs. Sadly, however, most only address environmental factors, suggesting that patients can avoid accidents by simply storing away throw rugs and installing handrails.

One treatment that has been consistently proven effective in treating the underlying medical cause of balance and dizziness-related falls is Vestibular Rehabilitation Therapy or VRT.



## Balance and VRT:

### Teaching the brain to correct itself

VRT is a highly effective, customized therapeutic approach for treating patients with vestibular balance system disorders. Studies show that individualized VRT is significantly more effective in resolving symptoms than commonplace treatments, such as medication or general balance exercises.

The Institute's VRT is designed as a clinic-directed therapy approach, using congruent home-based exercises that are patient motivated. Patients typically visit the clinic once or twice a week for up to six weeks or until their stability returns.

Our VRT exercise protocols take full advantage of the brain's natural plasticity and ability to restore symmetry and increase sensitivity. The goal is to improve patients' overall stability and motor control by enhancing the vestibulo-ocular reflex (VOR) – a reflexive eye movement that stabilizes images on the retina during head movement. Successful VRT returns patients to maximum activity levels as quickly and comfortably as possible.

### EPLEY Omniax® System onsite

As a leader in the diagnosis and rehabilitation of balance and dizziness disorders, Newport-Mesa Audiology Balance and Ear Institute continually adds leading-edge testing and treatment capabilities. Today, we are one of only 15 practices worldwide to feature the EPLEY Omniax System. Developed by neurotology pioneer Dr. John Epley, the EPLEY Omniax System allows Dr. Mango and his team to comprehensively manage all forms of positional vertigo, including particle and non-particle medical disorders, classic BPPV and its many variants. In treating BPPV, the EPLEY Omniax System is the only way to access and treat all six semi-circular canals in 360° of rotation. The widely used Hallpike test looks at only two. The 360° rotation enables us to “go beyond the table” to find and treat the most difficult cases of vertigo and BPPV.

## More personalized, satisfying care

For Institute patients, advanced capabilities through the Epley Omniax System translate into several clinical benefits, including: greater comfort, shorter treatment times and faster, more accurate treatments. Advanced positioning and treatment features provide the framework for a new level of decision making and a new level of care.

## Be our guest on a personal facility tour

For a more in-depth description of Institute treatment protocols and their benefits; contact one of our doctors of audiology at (949) 642-7935. We'll gladly answer all your questions or schedule a personal facility tour. You may also visit our website at [www.dizziland.com](http://www.dizziland.com).



# Comprehensive diagnostic audiological evaluation

In addition to being the nation's leading dizziness and balance treatment facility, Newport-Mesa Audiology Balance and Ear Institute is also a respected provider of audiological evaluation services and hearing loss solutions. In fact, we're among the nation's most well-equipped audiological facilities, serving an ever-growing number of adult, teen and pediatric cases. Patients enjoy private, individualized attention from doctors of audiology, who use the latest resources and technologies to help bring patients relief.

## Hearing loss testing and treatment for adults and teens

The Institute's comprehensive diagnostic audiological evaluation includes:

### Video Otoscopy

For detailed examination and documentation of ear canal and tympanic membrane

### Audiogram

Computerized, pure tone audiometry, performed in a comfortable, soundproof room to precisely measure hearing acuity, speech-recognition thresholds and word-recognition thresholds

### Tympanometry and Acoustic Reflexes

Accurately assess the status of the tympanic membrane, Eustachian tube and middle ear ossicles

### Otoacoustic Emissions (OAE)

Evaluates cochlear outer hair-cell function

### Auditory Brainstem Response (ABR)

Evaluates the integrity of auditory nerve pathway



# Pediatric hearing loss and balance disorders

Recent studies indicate pediatric hearing loss may affect as many as 15% of children. It is estimated that upwards of 50% of children with congenital SNHL (sensorineural hearing loss) also have a vestibular loss or dysfunction. Benign Positional Vertigo (BPV) of childhood, a form of early migraine is the #1 cause of dizziness in infants and young children between 1-4 years of age. The Institute's team of doctors of audiology using the most advanced diagnostic and treatment technology now allows us to address these pediatric cases, providing insight and rehabilitation previously unavailable to referring physicians and patients.



## A renowned pediatric and newborn testing facility

Despite mandatory universal newborn hearing screenings in nearly 40 of the 50 United States, the number of children affected by pediatric hearing loss is astoundingly high. At least one study reports that almost 15% of children are affected. It's true that the onset of some childhood hearing loss occurs later.

## Diagnosing and treating childhood balance disorders

Recent research and literature, as well as our own clinical findings, indicate vestibular disorders often go undetected among children and are prominent in the pediatric population. Advances in diagnostic and treatment technology now allow us to effectively treat childhood balance disorders.

## Speech delays, chronic ear infections and other possible causes of hearing loss are also evaluated. Available pediatric services include:

### ASSR (Auditory Steady State Responses)

The Institute is among only 10% of all treatment facilities to possess the equipment necessary for this test. ASSR predicts auditory thresholds in infants who cannot be evaluated through conventional audiometry.

### Otoacoustic Emissions (OAE)

Assesses the function of cochlear outer hair-cells

### Auditory Brainstem Response (ABR)

Evaluates the integrity of auditory nerve pathway

## Let us be your resource

Newport-Mesa Audiology Balance and Ear Institute offers a full range of pediatric and newborn testing and treatment services. Children receive the attention of two caring and patient doctors of audiology.

Treatments and support available from the Institute include: hearing aids; assistive listening devices, as well as referrals for imaging studies.

### Newborn hospital screenings

The Institute also serves as the follow up facility for newborns who fail routine hospital screenings. Dr. Mango and his senior staff personally handle all infant cases and report findings back directly to referring pediatricians.

### Behavioral Observation Audiometry for infants and young children

Using a combination of visual reinforcement and conditioned play, doctors of audiology engage the child through various activities, monitor and assess hearing and sound localization.



# Hearing loss and tinnitus treatments

The Institute's hearing-loss treatment options include a wide range of traditional and extended wear devices. An ever-growing selection of technologies is available, including programmable and digital models that utilize computerized speech mapping.

Recent studies estimate that 10% to 15% of the entire U.S. population experiences chronic or persistent ringing in the ears or internal head noises (tinnitus). Twelve million have symptoms serious enough to merit specialized medical attention.

Yet despite its prevalence, many patients and healthcare providers are unaware that tinnitus is treatable. This means that a lot of people who could benefit from treatment are not yet aware of the Institute's services or record of clinical success.



## Neuromonics™ Tinnitus Treatment

Newport-Mesa Audiology Balance and Ear Institute uses the Neuromonics™ Tinnitus Treatment, a clinically proven, six-month treatment process that helps alleviate tinnitus. Patented and FDA-cleared, this convenient, non-invasive option offers

significant, sometimes immediate, long-term relief without medication or surgery.

Supported by more than 15 years of tinnitus research and clinical studies, the Neuromonic Tinnitus Treatment is considered by many experts to be a

breakthrough in the field. Because it addresses the condition's underlying causes, the treatment reduces symptoms quickly. In many patients, relief is sustained long after treatment ends.

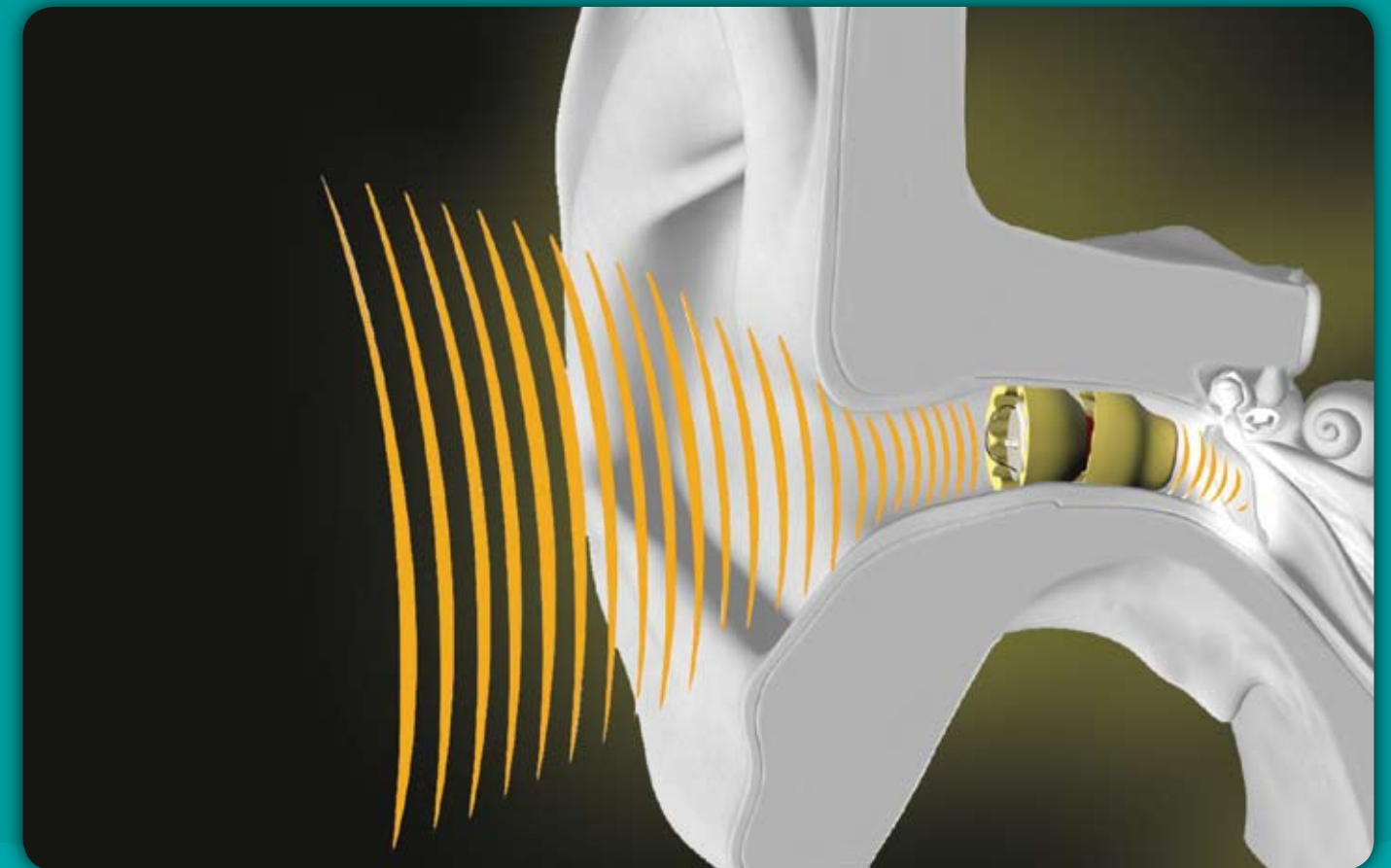
## Lyric® extended wear devices

Dr. Mango is among the nation's first practitioners certified to prescribe and fit Lyric, the first extended-wear hearing device. An invisible alternative to traditional options, these tiny devices slip

gently and comfortably out of sight, deep into the ear canal.

Advanced electronics stimulate natural hearing and significantly reduce background noise, offering sound fidelity that

often exceeds conventional aids. Full medical history, ear canal examination and audiological evaluation determines if the patient is a candidate for the Lyric device.





## Dr. Howard Mango, Au.D., Ph.D. Institute founder

Institute founder and executive director, Dr. Howard Mango, is a vestibular physiologist and pioneer in the emerging field of vestibular rehabilitation. He and his team of doctors of audiology have treated more than 30,000 patients since the Institute's inception in 1977.

### Benefits of referring to the Institute

Our physician referral network consists of highly respected Otolaryngologists, Neurologists, Internal Medicine physicians, Neurotologists, Cardiologists and Pediatricians from the U.S. and other countries. If you're currently seeing patients with undiagnosed vertigo, dizziness or balance-related symptoms, please let us know. We welcome the opportunity to supplement your care through leading-edge diagnostic and therapeutic support.

Some benefits of an affiliation with us include:

- Better care through direct access to advanced medical technology and resources
- More accurate diagnoses and comprehensive care with no cost, risk or investment
- A close association with a nationally renowned diagnostic and rehabilitative facility

### Request a personal facility tour or educational visit from Dr. Mango

Even a brochure twice this long wouldn't fully convey the breadth and depth of the Institute's value in diagnosing and rehabilitating difficult cases. You need to see it for yourself.

Diagnosing dizziness and balance disorders may sometimes be difficult, but returning patients to their normal activities and lifestyle just became easier.

Visit [www.dizziland.com](http://www.dizziland.com) or call (949) 642-7935 today to schedule a personal facility tour or visit from Dr. Mango. Get a hands-on introduction to our multi-million dollar medical-technology investment. And experience firsthand why so many highly respected specialists rely on Newport-Mesa Audiology Balance and Ear Institute.