

Celebrating 100 Years

Advances in CSD education, research, technology, and clinical practice

1924–1929: Early Foundations

- Profession of "Speech Correction" gains recognition
- Recognized need for a new discipline and an organization to publish its scholarly work
- Research on speech acoustics and articulation disorders begin to proliferate
- Measurement of hearing sensitivity
- Sound perception and acoustics

- American Speech-Language-Hearing Association is founded marking the beginning of the profession
- International Association of Logopedics and Phoniatrics (IALP) is founded
- Robert West publishes early studies on speech acoustics and articulation disorders
- Development of basic audiometers for clinical use
- Growth in interest in psychoacoustics (study of hearing perception)
- Precursor work leading to audiology as a field

- Focus on treatment for stuttering
- Research advances in speech correction
- The initial scope of "speech pathology" is identified
- Wearable hearing aids become popular with the public
- Psychoacoustics research expands
- Hearing loss detection



- Harvey Fletcher and colleagues at Bell Labs study speech perception
- Development of early hearing tests for industrial and military populations
- Audiogram established to standardize hearing measurement
- The first wearable hearing aid using vacuum tube technology goes on sale
- Early methods for diagnosing and treating stuttering are introduced
- Speech Pathology book outlines the neurophysiological bases and clinical subtypes for stuttering, articulation problems, phonation problems, and aphasia (Travis, 1931)
- Charles Van Riper publishes Speech Correction: Principles and Methods (1939)
- The term "speech pathology" is formally introduced

- Science of speech pathology
- Wendell Johnson's landmark study on stuttering published
- Treatment for aphasia and brain injuries
- Birth of Audiology, hearing testing, and wearable hearing aids
- Hearing sensitivity and sound perception



Milestones:

- Audiology founded as a profession to serve WWII veterans with hearing loss
- Introduction of rehabilitation programs using hearing aids and lip-reading
- First formal graduate training programs for audiologists
- Diagnostic and treatment research expands in speech-language pathology
- Soldiers returning home from WWII with aphasia and brain injuries lead to advancements in aphasia therapy and cognitive-communication rehabilitation
- First formal articulation tests are developed to assess speech disorders in children
- The Speech Correction Research Foundation is established in 1946 (later known as the American Speech-Language-Hearing Foundation)

Outside Influences:

- Leo Kanner (child psychiatrist) diagnoses the first case of autism in 1943
- WHO is founded in 1948
- Concept of neuroplasticity first described in 1948 by Jerzy Konorski

- Audiometry
- Hearing aid technology
- Pediatric hearing testing
- Standardized language assessments
- Behaviorist principles
- Psycholinguistics influences CSD research
- Individualized treatment plans



- Pure-tone audiometry and speech audiometry become standardized
- First transistorized hearing aids are introduced.
- Growth in pediatric audiology, including infant behavioral hearing assessments
- Early standardized language assessment tools are created for diagnosing developmental language disorders
- B.F. Skinner's *Verbal Behavior* introduces behaviorist principles into speech-language therapy
- Noam Chomsky introduces theory of transformational and generative grammar
- A focus on individualized treatment plans and a greater understanding of the underlying causes of communication disorders

- Industrial hearing loss
- Cochlear physiology
- Early auditory processing research
- Child language development
- Linguistic theories
- Augmentative and alternative communication (AAC)
- First successful cochlear implant performed in 1961



Milestones:

- Establishment of hearing conservation programs in workplaces
- Bekesy audiometry used to assess cochlear function
- Growth in animal models for auditory system research
- Roger Brown groundbreaking research on children's language development
- Noam Chomsky's linguistic theories influence understanding of syntax and language acquisition.
- First research studies on augmentative and alternative communication (AAC) begin.

Outside Influences:

• 1964 – The Civil Rights Act is passed in 1964

- Electroacoustic measurements
- Evoked potentials
- Assistive technology
- Early intervention
- Phonological processes
- Multidisciplinary and transdisciplinary teamwork



Milestones:

- Development of impedance audiometry (tympanometry) and acoustic reflex testing
- Auditory Brainstem Response (ABR) introduced for objective hearing assessment
- First wearable FM systems for classrooms
- Introduction of early intervention programs for children with speech and language delays
- Research on phonological processes in children leads to new models for treating articulation disorders
- Emergence of multidisciplinary and transdisciplinary teams included speech-language pathologists (SLPs), occupational therapists (OTs), physical therapists (PTs), and other professionals

Outside Influences:

Rehabilitation Act of 1973 – US federal law that includes Section 504

- Cochlear implants
- Objective infant hearing screening
- Central auditory processing
- Expansion of AAC
- Protocols for dysphagia
- Pragmatic communication



Milestones:

- FDA approves multichannel cochlear implants in 1984
- Research into central auditory processing disorders expands
- Use of ABR and OAE (otoacoustic emissions) for infant hearing screening begins
- Increased use of augmentative and alternative communication (AAC) for individuals with severe communication disorders
- First formal assessment and treatment protocols for dysphagia (swallowing disorders) are developed; dysphagia added to the SLP Scope of Practice
- Pragmatics and social communication become a focus in autism research and therapy
- Formation of the National Institute on Deafness and Other Communication Disorders in 1988

Outside Influences:

- Healthy People initiatives start in 1980
- World's first laptop computer hits shelves in 1981
- Diagnostic criteria for autism introduced with the publication of DSM-III
- Public Law 100-553 authorizes the establishment of the NIDCD in 1988

- Universal newborn hearing screening
- Digital hearing aids
- Auditory neuropathy
- Americans with Disabilities Act (ADA) -1990
- Functional Neuroimaging technology changes assessment and diagnosis of acquired brain injuries
- Benefits of early intervention
- Outside Influences Decade of the Brain 1990-2000



- Launch of Universal Newborn Hearing Screening programs
- Digital signal processing revolutionizes hearing aid customization
- Auditory neuropathy identified as a distinct disorder
- The Americans with Disabilities Act (ADA) is a civil rights law that prohibits discrimination on the basis of a disability and mandates accessibility for individuals with communication disorders (1990)
- Investigations into dynamic assessment and treatment research expands
- Asperger's syndrome introduced in DSM-IV, as a distinct condition within the autism spectrum
- Functional brain imaging techniques (fMRI, PET scans) begins to revolutionize aphasia and speech, language, and hearing research
- Research affirms the effectiveness of early intervention in speech-language therapy

- Genetic hearing loss
- Cochlear implant outcomes
- Hearing loss and cognition
- Research into role of genetics in speech, language and hearing development advances
- Significant gains are realized in understanding the neural bases and brainbehavior relationships for speech, language, hearing, and cognitive functions
- Cochlear implantation is widely adopted and there is a proliferation of outcomes research
- Telepractice emerges as a viable method of service delivery



Milestones:

- Identification of key genes (e.g., GJB2) linked to congenital hearing loss
- Research supports early cochlear implantation for best language outcomes
- Increased exploration of hearing loss-cognition links in aging populations
- The FOXP2 gene is linked to speech and language development and disorders
- Research supports early cochlear implantation for best language outcomes
- First AI-based speech recognition tools are tested for use in SLP therapy
- Telepractice begins expanding, allowing remote speech-language services

Outside Influences:

- WHO releases the International Classification of Functioning, Disability and Health (WHO, 2001)
- IOM's Landmark report on Unequal Treatment in 2003 (Confronting racial and ethnic disparities in healthcare)
- IPEC established in 2009 (IPEC core competencies first adopted in 2011)
- 1st generation iPads introduced

- Over-the-counter (OTC) hearing solutions
- Cochlear synaptopathy
- Dementia linked to untreated hearing loss
- Social (Pragmatic) Communication Disorders
- Al-driven voice analysis
- Genetic research expands
- Cultural and linguistic diversity integrated into ASHA Certification standards
- Interprofessional education and interprofessional practice (IPE/IPP)
- Simulation training allowed up to 20% of required clinical hours in 2014



- FDA begins considering OTC hearing aids for mild-to-moderate loss
- Functional imaging studies (fMRI, EEG) explore how hearing and cognition interact
- Cochlear synaptopathy demonstrated as a neural basis of acquired sensorineural hearing loss
- Growth in auditory training programs for older adults
- The DSM-5 introduces Social (Pragmatic) Communication Disorder as a separate diagnosis from autism
- Al-driven voice analysis tools emerge for diagnosing speech and voice disorders
- Genetic research explores possible therapies for developmental language disorders
- IPE/IPP added to CAA-accreditation standards, ASHA certification standards, audiology and SLP scopes of practice, and ASHA's Code of Ethics in 2016-2020

2020-Present

- Al and hearing tech
- Auditory processing-cognitive integration
- Telepractice in speech-language pathology and audiology
- Generative Artificial Intelligence
- Neuroplasticity research expands therapeutic and lifestyle applications
- Interprofessional collaborative practice
- Brain-computer interfaces (BCIs)



2020-Present

Milestones:

- COVID-19 accelerates telepractice in audiology and speech-language pathology
- FDA approves OTC hearing aids (2022) for mild hearing loss
- Research into neuroplasticity and brain-computer interfaces continues
- Rise of AI-powered hearing aids that adapt in real time to sound environments
- Brain-computer interfaces (BCIs) advances nonverbal individuals' ability to produce synthetic speech
- Neuroplasticity research advances rehabilitation strategies for aphasia and traumatic brain injury
- Adoption of interprofessional education and collaborative practice expands

Outside Influences:

- 2020-WHO declares global outbreak of COVID-19 a public health emergency
- 2022- Global report on health equity for persons with disabilities
- First-documented larynx transplant done at the Mayo clinic in 2024
- 2025- EOs impact DoE, NIH, EHDI, ADA, and DEI