

Clinical Policy: Central Auditory Processing Disorder

Reference Number: CA.CP.MP.375

Effective Date: 10/07

Last Review Date: 3/23

[Coding Implications](#)

[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

Description

Central auditory processing disorder (CAPD), also known as auditory processing disorder (APD), refers to the efficiency and effectiveness by which the central nervous system (CNS) utilizes auditory information in the perceptual processing of auditory information. The diagnosis, management, and even the existence of an auditory-specific perceptual deficit are controversial.

Policy/Criteria

- I. It is the policy of California Health & Wellness that diagnostic testing and therapy for the management of central auditory processing disorder are considered investigational due to lack of scientific evidence to support the validity of any diagnostic tests and treatment.

Background

According to the American Speech-Language Hearing Association (ASHA), central auditory processing disorder (CAPD), also known as auditory processing disorder (APD), refers to difficulties in the perceptual processing of auditory information in the CNS as demonstrated by poor performance in one or more of the skills noted above. CAPD It is a complex and heterogeneous group of auditory-specific disorders usually associated with a range of listening and learning deficits. Children or adults suspected of CAPD may exhibit a variety of listening and related complaints such as difficulty understanding speech in noisy environments, following directions, and discriminating (or telling the difference between) similar-sounding speech sounds. The child may have difficulty with spelling, reading, and understanding information presented verbally in a classroom. Some individuals may also have behavioral, emotional or social difficulties.

The diagnosis, management, and even the existence of a modality-specific dysfunction remain controversial. At this time, there is no universally accepted method of screening for CAPD. The Screening Test for Auditory Processing Disorders (SCAN) tests both monotic and dichotic listening abilities and has been proposed as a standardized method for determining the potential of central auditory processing disorder (CAPD) in children between the ages of 3 and 11 years. There also is no accepted “gold standard” test battery for establishing CAPD. Behavioral and electrophysiologic tests have been proposed to assess central auditory function. The behavioral tests are often broken down into four subcategories, including monaural low-redundancy speech tests (e.g., compressed speech test, filtered speech test), dichotic speech tests (e.g., staggered spondaic word test, dichotic digits test), tests of temporal processing, and binaural interaction tests. Central auditory processing assessments may not be appropriate for children with significant developmental delays (i.e., cognitive deficits) or children under the age of 7 years.

No pharmacologic agent has been demonstrated as effective specifically for CAPD. Interventions for CAPD focuses on improving the quality of the acoustic signal and the listening

CLINICAL POLICY

Central Auditory Processing Disorder

environment, improving auditory skills, and enhancing utilization of metacognitive and language resources.

In an interventional study, Lofti and colleagues (2016) examined the effects of an auditory lateralization training on speech perception in presence of noise/competing signals in children with suspected CAPD. A total of 60 children were selected based on multiple auditory processing assessment sub-tests. They were randomly divided into 2 groups of 9 year old children (control group and training group). The training program consisted of detection and pointing to sound sources delivered with inter-aural time differences under head-phones for 12 formal sessions (6 weeks). This study showed that in the training group, monaural selective auditory attention test and spatial word recognition) improved significantly after the auditory lateralization training. The authors concluded that auditory lateralization training for 6 weeks improved speech understanding in noise significantly. However, they stated that generalization of these findings needs further investigation and noted the need for further studies with higher sample size, auditory lateralization training for more extended time period and long-term follow-up are needed.

Uptodate (2022) notes that “Evaluation for a central auditory processing disorder in school-age children is based upon the assumption that an auditory-specific perceptual deficit is the foundation of learning problems such as reading and language disabilities. However, the diagnosis, management, and even the existence of a modality-specific dysfunction are controversial. Some authorities suggest that it may exist as a primary deficit, whereas others believe that it may be secondary to cognitive deficits. The absence of a coherent theory renders diagnosis and management exceedingly difficult.”

The American Speech Language Hearing Association (ASHA) published a technical report addressing APD stating additional research is needed in auditory processing and its disorders to develop testable models based on valid psychophysical principles, to develop more efficient screening tools as well as screening and diagnostic measures appropriate for multicultural/multilingual populations and examine, in a systematic scientific manner, the relationships among performance on various categories of central auditory diagnostic tests and higher order language, learning, or communication sequelae.

The American Academy of Audiology published clinical practice guidelines in 2010 regarding central auditory processing disorders and also noted that the testing for this disorder lacks “rigorous psychometric design, construction, and validation” and notes that “there continues to be a need to develop new and more precise measures of central auditory function with documented validity, reliability, and efficiency, and with appropriate normative data.”

The National Institute on Deafness and Communication Disorders notes that much research is still needed to understand CAPD problems, related disorders, and the best intervention for each child or adult. Researchers are currently studying a variety of approaches to treatment. Controlled case studies and randomized clinical trials are needed to ascertain systematically the relative efficacy of various treatment and management approaches.

Coding Implications

CLINICAL POLICY

Central Auditory Processing Disorder

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2015, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

CPT® Codes	Description
92507	Treatment of speech, language, voice, communication, and/or auditory processing disorder; individual
92508	group, two or more individuals
92521	Evaluation of speech fluency (eg, stuttering, cluttering)
92522	Evaluation of speech sound production (eg, articulation, phonological process, apraxia, dysarthria)
92523	Evaluation of speech sound production (eg, articulation, phonological process, apraxia, dysarthria); with evaluation of language comprehension and expression (eg, receptive and expressive language)
92524	Behavioral and qualitative analysis of voice and resonance
92551 - 92588	Audiological function tests with medical diagnostic evaluation
92620	Evaluation of central auditory function, with report; initial 60 minutes
92621	each additional 15 minutes
92507	Treatment of speech, language, voice, communication, and/or auditory processing disorder; individual
92508	Treatment of speech, language, voice, communication, and/or auditory processing disorder; group, 2 or more individuals
92522	Evaluation of speech sound production (eg, articulation, phonological process, apraxia, dysarthria)
92523	Evaluation of speech sound production with evaluation of language comprehension and expression (eg, receptive and expressive language)
92524	Behavioral and qualitative analysis of voice and resonance
92553	Pure tone audiometry (threshold); air and bone
92556	Speech audiometry threshold with speech recognition
92557	Comprehensive audiometry threshold and speech recognition (92553 and 92556 combined)
92620	Evaluation of central auditory function, with report; initial 60 minutes
92621	Evaluation of speech fluency (eg, stuttering, cluttering)

HCPCS Codes	Description

CLINICAL POLICY

Central Auditory Processing Disorder

ICD-10-CM Diagnosis Codes

ICD-10-CM Code	Description
H93.25	Central auditory processing disorder
H93.291-H93.299	Other abnormal auditory perceptions

Reviews, Revisions, and Approvals	Date	Approval Date
Initial approval	10/07	10/07
Update no revisions	03/11	03/11
Update no revision	03/12	03/12
Coding updates	03/13	03/13
Coding updates	03/14	03/14
Update no revision	03/15	03/15
Update no revision	03/16	03/16
Update no revision	03/17	03/17
Updated references	03/18	03/18
Updated references	03/19	03/19
Update no revisions, added references	03/20	03/20
Update no revision	03/21	03/21
Update; added reference	03/22	03/22
Update and added references	03/23	03/23

References

1. Ahmmed AU, Ahmmed AA, Bath JR, et al. Assessment of children with suspected auditory processing disorder: A factor analysis study. *Ear Hear.* 2014;35(3):295-305.
2. American Academy of Audiology. Clinical practice guidelines. Diagnosis, treatment and management of children and adults with central auditory processing disorder. 2010 Aug 24 sha.org/practice-portal/clinical-topics/central-auditory-processing-disorder/
3. American Speech-Language-Hearing Association. Working Group on Auditory Processing Disorders. (Central) auditory processing disorders. Technical report. 2005 <http://www.asha.org/policy/> accessed 3/17
4. Azouz HG, Kozou H, Khalil M et al. The correlation between central auditory processing in autistic children and their language processing abilities. *Int J Pediatr Otorhinolaryngol.* 2014 Dec;78(12):2297-300.
5. Back NCF, Crippa ACS, Riechi TIJS, Pereira LD. Central Auditory Processing and Cognitive Functions in Children. *Int Arch Otorhinolaryngol* 2022; 26:e020.
6. Barrozo TF, Pagan-Neves Lde O, Vilela N, et al. The influence of (central) auditory processing disorder in speech sound disorders. *Braz J Otorhinolaryngol.* 2016 Jan-Feb;82(1):56-64.
7. Beck DL, Clarke JL, Moore DR. Contemporary issues in auditory processing disorders: 2016. *Hearing Review.* 2016;23(4):22.

CLINICAL POLICY

Central Auditory Processing Disorder

8. Bellis TJ, Chermak GD, Weihing J, Musiek FE. Efficacy of auditory interventions for central auditory processing disorder: A response to Fey et al. (2011). *Lang Speech Hear Serv Sch*. 2012;43(3):381-386.
9. Brosch S, Reiter R, Imgrunt J, et al. How do results in BAKO 1-4 and H-LAD-test correlate with auditory processing? *Laryngorhinootologie*. 2010 Jul; 89(7): 410-7
10. Cacace AT, Enayati Z. Lack of a coherent theory limits the diagnostic and prognostic value of the (central) auditory processing disorder: a theoretical and clinical perspective. *Curr Opin Otolaryngol Head Neck Surg* 2022; 30:326.
11. Cacace AT, McFarland DJ. Central auditory processing disorder in school-aged children: a critical review. *J Speech Lang Hear Res* 1998; 41:355.
12. Carter J, Musher K. Etiology of speech and language disorders in children. UpToDate [online serial]. Waltham, MA: UpToDate; revised May 22
13. Chowsilpa S, Bamiou D-E , Koochi N. Effectiveness of the auditory temporal ordering and resolution tests to detect central auditory processing disorder in adults with evidence of brain pathology: A systematic review and meta-analysis. *Front Neurol*. 2021;12:656117.
14. Dawes, P, Bishop, DV. Psychometric profile of children with auditory processing disorder and children with dyslexia. *Arch Dis Child* 2010; 95:432.
15. Delphi M, Zamiri Abdollahi F. Dichotic training in children with auditory processing disorder. *Int J Pediatr Otorhinolaryngol*. 2018;110:114-117.
16. Ferguson MA, Hall RL, Riley A, Moore DR. Communication, listening, cognitive and speech perception skills in children with auditory processing disorder (APD) or specific language impairment (SLI). *J Speech Lang Hear Res*. 2011;54(1):211-227.
17. Fey ME, Kamhi AG, Richard GJ. Auditory training for children with auditory processing disorder and language impairment: A response to Bellis, Chermak, Weihing, and Musiek. *Lang Speech Hear Serv Sch*. 2012;43(3):387-392.
18. Fey ME, Richard GJ, Geffner D, et al. Auditory processing disorder and auditory/language interventions: An evidence-based systematic review. *Lang Speech Hear Serv Sch*. 2011;42(3):246-264.
19. Friel-Patti S. Clinical Decision-Making in the Assessment and Intervention of Central Auditory Processing Disorders. *Lang Speech Hear Serv Sch* 1999; 30:345.
20. Hayes. Health Technology Brief. Electrophysiological Testing for Diagnosing Central Auditory Processing Disorder (CAPD). December 10, 2009. Updated December 5, 2011. Archived January 10, 2013.
21. Heine C, O'Halloran R. Central Auditory Processing Disorder: a systematic search and evaluation of clinical practice guidelines. *J Eval Clin Pract*. 2015 Dec 21.
22. Idiazábal-Aletxa MA, Saperas-Rodríguez M. Auditory processing in specific language disorder. *Rev Neurol*. 2008;46 Suppl 1:S91-S95.
23. Iliadou V, Kiese-Himmel C. Common misconceptions regarding pediatric auditory processing disorder. *Front Neurol*. 2018;8:732.
24. Jerger J. The concept of auditory processing disorder: A brief history .In: Controversies in auditory processing disorder. AT Cacase, DJ McFarland, eds. San Diego, CA: Plural Publishing, Inc; 2009 (cited in BSA, 2011).
25. Kamhi AG. What speech-language pathologists need to know about auditory processing disorder. *Lang Speech Hear Serv Sch*. 2011;42(3):265-272.

CLINICAL POLICY

Central Auditory Processing Disorder

26. Keith RW. Controversies in the standardization of auditory processing tests. In: Controversies in auditory processing disorder. AT Cacase, DJ McFarland, eds. San Diego, CA: Plural Publishing, Inc; 2009 (cited in BSA, 2011).
27. Koravand A, Jutras B, Lassonde M. Abnormalities in cortical auditory responses in children with central auditory processing disorder. *Neuroscience*. 2017;346:135-148.
28. Lagace J, Jutras B, Gagne JP. Auditory processing disorder and speech perception problems in noise: Finding the underlying origin. *Am J Audiol*. 2010;19(1):17-25.
29. Lang-Roth R. Hearing impairment and language delay in infants: Diagnostics and genetics. *GMS Curr Top Otorhinolaryngol Head Neck Surg*. 2014 Dec 1;13:Doc05.
30. Liu P, Zhu H, Chen M, et al. Electrophysiological screening for children with suspected auditory processing disorder: A systematic review. *Front Neurol*. 2021 Aug 23;12:692840.
31. Lotfi Y, Moosavi A, Abdollahi FZ, et al. Effects of an auditory lateralization training in children suspected to central auditory processing disorder. *J Audiol Otol*. 2016;20(2):102-108.
32. McFarland DJ, Cacace AT. Potential problems in the differential diagnosis of (central) auditory processing disorder (CAPD or APD) and attention-deficit hyperactivity disorder (ADHD). *J Am Acad Audiol*. 2003;14(5):278-280.
33. Micallef LA. Auditory processing disorder (APD): Progress in diagnostics so far. A mini-review on imaging techniques. *J Int Adv Otol*. 2015;11(3):257-261.
34. Miller CA, Wagstaff DA. Behavioral profiles associated with auditory processing disorder and specific language impairment. *J Comm Disord*. 2011;44(6):745-763.
35. Mishra SK. Medial efferent mechanisms in children with auditory processing disorders. *Front Hum Neurosci*. 2014;8:860.
36. Moore DR, Ferguson MA, Edmondson-Jones AM, et al. Nature of auditory processing disorder in children. *Pediatrics* 2010; 126:e382.
37. Moore DR, Rosen S, Bamiou DE, et al. Evolving concepts of developmental auditory processing disorder (APD): A British Society of Audiology APD special interest group 'white paper'. *Int J Audiol*. 2013;52(1):3-13.
38. Moore DR, Sieswerda SL, Grainger MM, et al. Referral and diagnosis of developmental auditory processing disorder in a large, United States hospital-based audiology service. *J Am Acad Audiol*. 2018;29(5):364-377.
39. Moore DR. The diagnosis and management of auditory processing disorder. *Lang Speech Hear Serv Sch*. 2011;42(3):303-308.
40. Moore DR. Editorial: Auditory Processing Disorder. *Ear Hear*. 2018 Jul/Aug;39(4):617-620. doi: 10.1097/AUD.0000000000000582. PMID: 29664753; PMCID: PMC6124895
41. National Institutes of Health (NIH), National Institute on Deafness and Other Communication Disorders (NIDCD). Auditory Processing Disorder in Children. NIH Pub. No. 01-4949. Bethesda, MD: NIH; updated February 2004.
42. National Institutes of Health. National Institute of Deafness and Communication Disorders. Auditory Processing Disorder in Children. Available at:<http://www.nidcd.nih.gov/health/voice/auditory.html>
43. Rabelo CM, Schochat E. Sensitivity and specificity of auditory steady-state response testing. *Clinics (Sao Paulo)*. 2011;66(1):87-93.

CLINICAL POLICY

Central Auditory Processing Disorder

44. Rosen S, Cohen M, Vanniasegaram I. Auditory and cognitive abilities of children suspected of auditory processing disorder (APD). *Int J Pediatr Otorhinolaryngol.* 2010 Jun; 74(6): 594-600.
45. Schochat E, Musiek FE, Alonso R, Ogata J. Effect of auditory training on the middle latency response in children with (central) auditory processing disorder. *Braz J Med Biol Res.* 2010 Aug; 43(8): 777-85.
46. Simões MB, Schochat E. Central) auditory processing disorders in individuals with and without dyslexia. *Pro Fono.* 2010 Oct-Dec; 22(4): 521-4
47. Smith R JH, Gooi A. Etiology of hearing impairment in children. UpToDate. May 23, 2012.
48. Terband H, Maassen B, Guenther FH, et al. Auditory-motor interactions in pediatric motor speech disorders: Neurocomputational modeling of disordered development. *J Commun Disord.* 2014 Jan 21. pii: S0021-9924(14)00002-1. doi: 0.1016/j.jcomdis.2014.01.001. [Epub ahead of print]
49. Wilson WJ, Arnott W. Using different criteria to diagnose (central) auditory processing disorder: How big a difference does it make? *J Speech Lang Hear Res.* 2013;56(1):63-70.
50. Witton C. Childhood auditory processing disorder as a developmental disorder: The case for a multi-professional approach to diagnosis and management. *Int J Audiol.* 2010;49(2):83-87.

Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

CLINICAL POLICY

Central Auditory Processing Disorder

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members. This clinical policy is not intended to recommend treatment for members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

Providers referred to in this clinical policy are independent contractors who exercise independent judgment and over whom the Health Plan has no control or right of control. Providers are not agents or employees of the Health Plan.

This clinical policy is the property of the Health Plan. Unauthorized copying, use, and distribution of this clinical policy or any information contained herein are strictly prohibited. Providers, members and their representatives are bound to the terms and conditions expressed herein through the terms of their contracts. Where no such contract exists, providers, members and their representatives agree to be bound by such terms and conditions by providing services to members and/or submitting claims for payment for such services.

Note: For Medicaid members, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

Note: For Medicare members, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs, LCDs, and Medicare Coverage Articles should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at <http://www.cms.gov> for additional information.

©2016 Centene Corporation. All rights reserved. All materials are exclusively owned by Centene Corporation and are protected by United States copyright law and international copyright law. No part of this publication may be reproduced, copied, modified, distributed, displayed, stored in a retrieval system, transmitted in any form or by any means, or otherwise published without the prior written permission of Centene Corporation. You may not alter or remove any trademark, copyright or other notice contained herein. Centene® and Centene Corporation® are registered trademarks exclusively owned by Centene Corporation.