

Clinical Policy: Insulin Testing in Pediatrics

Reference Number: GA.CP.MP.154

Last Review Date: 11/19

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Description

Insulin is a hormone vital for transportation and storage of glucose. Measuring insulin levels provides information on the cause of hypoglycemia or can determine insulin resistance, which can be an indicator of type 2 diabetes. This policy discusses the medical necessity requirements for insulin testing in pediatrics.

Policy/Criteria

- I. It is the policy of Peach State Health Plan[®] that insulin testing in healthy, including obese but otherwise healthy, children (age ≥ 1 and ≤ 18) is **not medically necessary** because these tests have not been demonstrated to have a clear clinical benefit.

Background

The Endocrine Society Clinical Practice Guideline on pediatric obesity recommends against routine laboratory evaluations for endocrine etiologies of pediatric obesity unless the patient's stature and/or height velocity are attenuated (assessed in relationship to genetic/familial potential and pubertal stage). They also recommend against measuring insulin concentrations when evaluating children or adolescents for obesity. They note that although obesity is associated with insulin resistance/hyperinsulinemia, attempts to diagnose insulin resistance by measuring plasma insulin concentration or any other surrogate in the clinical setting has no merit because it has no diagnostic value. Fasting insulin concentrations show considerable overlap between insulin-resistant and insulin-sensitive youths. Therefore, there is no well-defined cut point differentiating normal from abnormal and no universally accepted, clinically useful, numeric expression that defines insulin resistance, unlike for glucose or lipids. Moreover, measuring insulin is hampered by the lack of standardized insulin assays, and poor reproducibility of even the same assay. Further limitations include race/ethnicity-related differences in insulin concentrations due to differences in the metabolic clearance rate of insulin and the cross reactivity between insulin and proinsulin.

In youths with Type 2 diabetes mellitus, despite severe deficiency in insulin secretion, fasting insulin concentrations are higher than in youths without diabetes. Importantly, fasting insulin concentrations are similar in youths who are obese with normal glucose tolerance vs impaired glucose tolerance, allowing for the possible danger of missing a diagnosis of impaired glucose tolerance if one uses fasting insulin concentrations as a screening tool. Because of these limitations, measuring plasma insulin concentrations remains a research tool with no clinical value for evaluation of obesity.^{1,2}

Coding Implications

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

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2018, 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.

Table 1: CPT codes not medically necessary when billed with a corresponding ICD-10CM in Table 2

CPT Codes	Description
83525	Insulin; total
83527	Insulin; free

Table 2: ICD-10-CM diagnosis codes not medically necessary when billed with a corresponding CPT code in Table 1.

ICD-10-CM Code	Description
E66.01	Morbid (severe) obesity due to excess calories
E66.09	Other obesity due to excess calories
E66.1	Drug-induced obesity
E66.3	Overweight
E66.8	Other obesity
E66.9	Obesity, unspecified
Z00.00	Encounter for general adult medical examination without abnormal findings
Z00.129	Encounter for routine child health examination without abnormal findings
Z00.8	Encounter for other general examination
Z68.52	Body mass index (BMI) pediatric, 5 th percentile to less than 85 th percentile for age
Z68.53	BMI pediatric, 85 th percentile to less than 95 th percentile for age
Z68.54	BMI pediatric, greater than or equal to 95 th percentile for age

Reviews, Revisions, and Approvals	Date	Approval Date
Insulin testing criteria split from CP.MP.154, references and background reviewed and updated.	03/18	12/17
References reviewed and updated	11/18	11/18
References reviewed and updated. Codes reviewed. Reviewed by specialist.	11/19	11/19

References

1. Brown, R., Yanovski JA. Estimation of insulin sensitivity in children: methods, measures, and controversies. *Pediatric Diabetes*, 2014 May; 15(3) 151-161. doi: [10.1111/pedi.12146](https://doi.org/10.1111/pedi.12146).
2. Klish WJ. Clinical evaluation of the obese child and adolescent. In: UpToDate, Motil KJ, Geffner ME (Eds) UpToDate, Waltham, MA, Accessed Oct 29, 2019.

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3. Levy-Marchal, C., Arslanian, S., Cutfield, W., et al. Insulin Resistance in Children: Consensus, Perspective, and Future Directions. *The Journal of Clinical Endocrinology and Metabolism*, 2010 Dec; 95(12): 5189-5198. doi: [10.1210/jc.2010-1047](https://doi.org/10.1210/jc.2010-1047)
4. Reinehr, T., Hinney, A., De Sousa, G., Austrup, F., Hebebrand, J., & Andler, W. (2007). Definable somatic disorders in overweight children and adolescents. *The Journal of pediatrics*, 150(6), 618-622.
5. Styne DM, Arslanian SA, Connor EL, et al. Pediatric Obesity-Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab*, 2017 Mar 1;102(3):709-757. doi: 10.1210/jc.2016-2573. Accessed Nov 2,2018. Available at: <https://academic.oup.com/jcem/article/102/3/709/2965084>
6. United States Preventive Services Task Force. Obesity in Children and Adolescents: Screening. June 2017.

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.

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

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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.

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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.

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