

Clinical Policy: Insulin Testing in Pediatrics

Reference Number: GA.CP.MP.154

Date of Last Revision: 11/21

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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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2020, 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 | Body mass index [BMI] pediatric, 85 th percentile to less than 95 th percentile for age |
| Z68.54 | Body mass index [BMI] pediatric, greater than or equal to 95 th percentile for age |

| Reviews, Revisions, and Approvals | Revision 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 reviewed and updated. 10/1/20 ICD-10 code updates: Revised ICD-10 codes Z68.52, Z68.53, and Z68.54: code set revised changing parenthesis around BMI to brackets with no | 11/20 | 11/20 |

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| Reviews, Revisions, and Approvals | Revision Date | Approval Date |
|---|---------------|---------------|
| change in code descriptor. Replaced “member” with “member/enrollees” in all instances in the disclaimer. | | |
| Annual review. References reviewed and updated. Specialist review. Changed "Last Review Date" in the header to "Date of Last Review" and "Date" in revision log to "Revision Date." | 11/21 | 12/21 |

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 Sept 23, 2020.
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](https://doi.org/10.1210/jc.2016-2573). Accessed October 23, 2020. Available at: <https://academic.oup.com/jcem/article/102/3/709/2965084>
6. United States Preventive Services Task Force Recommendation Statement. Screening for Obesity in Children and Adolescents. June 20, 2017. <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/obesity-in-children-and-adolescents-screening>
7. Skelton, JA, Klish, W. Clinical evaluation of the obese child and adolescent. UpToDate. www.uptodate.com. Published September 28, 2020. Accessed September 16.

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

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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.

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Note: For Medicaid members/enrollees, 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/enrollees, 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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