

# Management of Comorbidities Associated with Childhood Overweight and Obesity

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## Background

- The prevalence of overweight and obesity in children (age > 2yrs) and adolescents has increased significantly in the United States over the past 30 years, with 31.8% of children and adolescents now estimated to be overweight or obese, and 16.9% obese.<sup>1</sup>
- Potential complex co-morbidities have been identified secondary to overweight and obesity in the pediatric population.<sup>2-8</sup>
- Routine screening and treatment for these conditions is vital to the health and well-being of all overweight and obese children; however, gaps and inconsistencies often exist in how primary care practitioners approach the recognition and management of these potential co-morbidities.<sup>5</sup>

## Purpose

- To conduct an integrated review of the literature to identify the best evidence for screening, treatment and referral related to common comorbidities associated with childhood overweight and obesity
- To create a comprehensive point-of-care algorithm for primary care practitioners to better manage these comorbidities

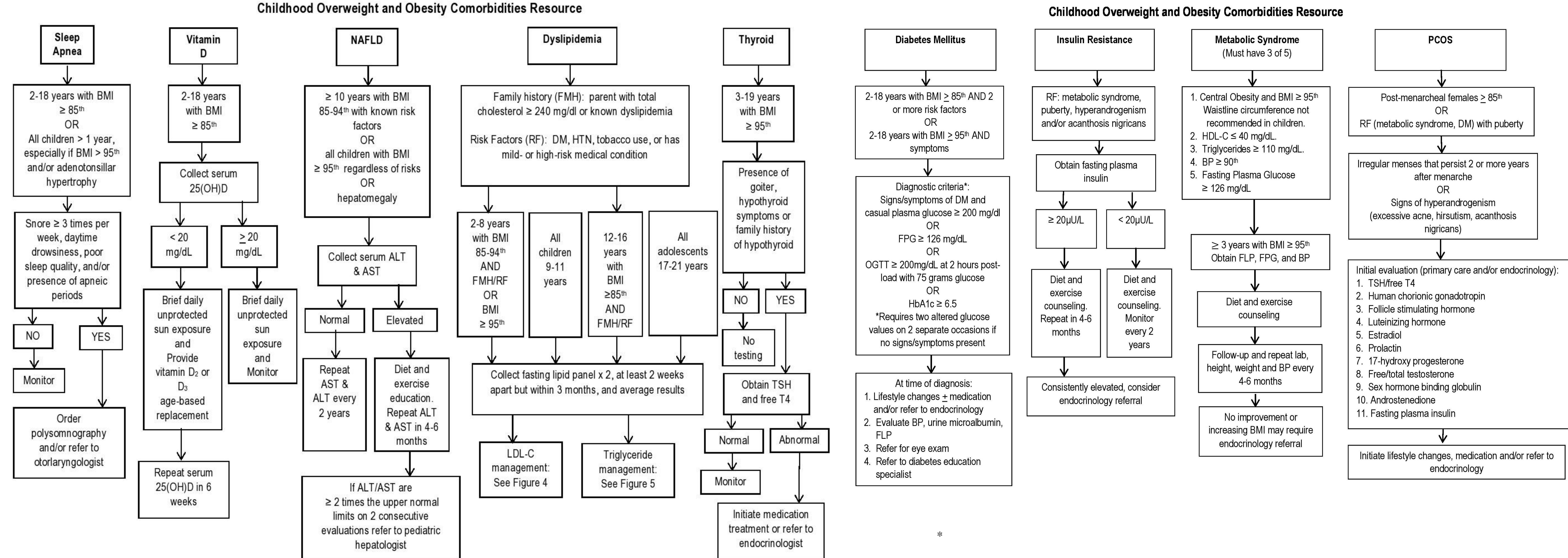
## Methodology

- Sequential searches were done using CINAHL, ProQuest Nursing and Allied Health, and PubMed databases to identify English language articles published from 2010-2015 that contained the keywords “pediatric obesity” and each of the selected comorbidities.
- Abstracts were reviewed to determine if protocols for screening, treatment and/or referral were identified, or if current algorithms existed.
- Article content was abstracted and summarized in a synthesis table
- The literature search was extended to 2002 in selected areas to include seminal work and to address gaps identified by the initial search.
- Nonprofit or government health-related organizational sites were also accessed to identify relevant guidelines and algorithms.
- Articles and guidelines were ranked according to the strength of evidence using Polit & Beck’s Evidence Hierarchy.<sup>9</sup>

Category	Description
Level I	a) Systematic reviews of randomized controlled trials b) Systematic reviews of non-randomized trials
Level II	a) Individual randomized controlled trial b) Individual non-randomized trial
Level III	Systematic review of observational or correlational studies
Level IV	Individual observational or correlational study
Level V	Systematic review of physiologic, qualitative or descriptive studies
Level VI	Individual physiologic, qualitative or descriptive study
Level VII	Expert opinion, committee consensus statements

- Highest level evidence was then used to develop the *Childhood Overweight and Obesity Comorbidities Resource*.

## Results



The algorithm above details management recommendations specific to each comorbidity based upon the highest level of evidence. Additional clinical resources related to hypertension and dyslipidemia were identified during the literature review to supplement the algorithm. These resources were combined to form the *Childhood Overweight and Obesity Co-morbidity Treatment Tool*.

## Results

- Thirty-five articles met the established criteria
- Results included 19 level I, one level II, one level III, four level IV, three level V, two level VI and five level VII evidence sources.
- These resources were used to construct new algorithms for comorbidities not previously developed.
- Existing algorithms related to pediatric hypertension, dyslipidemia, polycystic ovarian syndrome and Type 2 diabetes were used but not modified.
- These new and established algorithms were then consolidated into a comprehensive algorithm: *The Childhood Overweight and Obesity Comorbidities Resource*



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## Discussion

- A new point-of-care resource was developed that expanded access to multiple evidence-based guidelines not consistently available in decision-tree form
- The strength of the evidence was evaluated:
  - 25 articles were from the past 5 years
  - 19 articles were Level I
  - 5 articles were consensus/expert opinion (Level VII)
- Rapid cycle pilot was done and pediatric NPs describe the resource as clear, comprehensive & easy to use
- Next step: develop electronic application for point-of-care use
- Disseminate resource and further evaluate effectiveness

## Implications for Practice

- The *Childhood Overweight and Obesity Comorbidity Resource* offers:
- Consistent guidelines for primary care practitioners to better recognize and manage multiple complex comorbidities associated with childhood overweight and obesity
  - A resource to help bridge the gap when pediatric subspecialists are not readily available
  - Opportunity for practitioners to deliver comprehensive, consistent preventative care to their overweight and obese pediatric patients in the primary care setting

### Available as separate documents:

- Hypertension & Dyslipidemia Algorithms  
*Childhood Overweight and Obesity Comorbidities Resource* links  
Poster Abbreviations and References