Pediatric/Adolescent Obesity Assessment and Treatment Protocol

Rationale: The patient population served by La Clinica de La Raza is disproportionately affected by obesity. Early onset obesity results in increased morbidity and mortality later in life. Quality health care requires early identification of those affected and early diagnosis of co-morbidities. Early lifestyle intervention with a goal of reducing the incidence of childhood obesity is paramount in promoting good health and wellness. In order to meet this goal, La Clinica de La Raza institutes the following protocol.

Initial Evaluation of Obese/Overweight Child/Adolescent

- Body Mass Index (BMI) to screen for obesity for all children ≥ 2 years old
- Plot BMI on BMI growth chart
- BP using age and size appropriate cuff
- Obesity risk factors based on Hx and exam
- Focused Family Hx /Risk Factors
  - Obesity
  - DM2
  - Cardiovascular Disease (HTN, high cholesterol)
  - Early death from stroke or CVD (age<55)
- Recommended follow up every 3 months with Ht, Wt, BMI recorded at these visits for 1 year or until BMI stabilizes

BMI Diagnostic Categories

Percentile	**Weight category**
<5%	Underweight
5-84%	Healthy weight
85-94%	Overweight
95-98%	Obese
>99%	Extreme Obesity**

**Extreme obesity-- proposed not official category, see cutoff points below

Age (years)	**Boys (BMI)**	**Girls (BMI)**
5	20.1	21.5
6	21.6	23
7	23.6	24.6
8	25.6	26.4
9	27.6	28.2
10	29.3	29.9
11	30.7	31.5
12	31.8	33.1
13	32.6	34.6
14	33.2	36
15	33.6	37.5
16	33.9	39.1
17	34.4	40.8

Co-Morbidities or Health Conditions Associated with Overweight and Obesity

Cardiovascular	Orthopedic	Endocrine	Psychological
• Dyslipidemia • Hypertension • Left Ventricle Hypertrophy • Atheroscerlosis	• Slipped Capital Femoral Epiphysis • Blount's Disease	• Metabolic Syndrome • Diabetes Mellitus Type 2 • Polycystic Ovarian Syndrome	• Quality of Life • Depression • Negative Self-Image

Hepatic	Pulmonary	Nervous	Reproductive
• Nonalcoholic Steatohepatitis • Nonalcoholic Fatty Liver Disease	• Asthma • Obstructive Sleep Apnea	• Pseudotumor Cerebri	• Oligomenorrhea • Amenorrhea

Laboratory Evaluation

LABS	OW child ≥ 2 yrs with BMI 85-94% without risk factors	OW child ≥ 10 yrs with BMI 85-94% with risk factors	Obese child ≥ 10 yrs with BMI>95% regardless of risk factors	**CHDP**** OW child 5 yrs or more with BMI >85% with 2 risk factors	**FPact eligible patients**
Fasting lipids	Repeat q 2 yrs if normal	repeat q 2 yrs if normal	repeat q 2 yrs if normal	Not reimbursed	Refer to Family pact Benefits grid
ALT & AST		repeat q 2 yrs if normal	repeat q 2 yrs if normal	Not reimbursed	Refer to Family pact Benefits grid
Fasting glucose		repeat q 2 yrs if normal	repeat q 2 yrs if normal	Reimbursed	Refer to Family pact Benefits grid
Fasting Cholesterol				Reimbursed	Refer to Family pact Benefits grid

Risk Factors Defined as Family Hx:

Obesity
DM2
CVD (HTN, high cholesterol)
Early death from stroke or CVD (age<55)

****CHDP Risk Factors** **(CHDP Provider Information Notice No: 05-16)**

FHx of diabetes
Race/ethnicity (Black, Hispanic, Am Indian, Asian, Pacific Islander, Native Alaskan)
Signs of insulin resistance (A. Nigricans, PCOS)
HTN
Dyslipidemia
Physical activity<30 minutes/day
Consistently unbalanced diet

Abnormal Labs

Transaminase Levels	**If >1.5 normal**	**If additional labs are normal**
	Check to R/O other cause of liver disease: • Alpha-1-antitrypsin • Ceruloplasm • ANA • Hepatitis antibodies	Repeat transaminase in 2-4 months. If repeated labs remain elevated, refer to GI for further evaluation of fatty liver disease.
Lipid Panel	**If elevated**	**If total chol>200 or LDL>130**
	Dietary counseling and lifestyle modification is #1 intervention. Statins in children controversial (AHA)	Recommend low cholesterol diet and re-check in 6 mo.

Intervention:

Stage 1 Prevention Plus: Visits with PCP to set behavioral goals following 5-2-1-0 model.

- 5 fruits and vegetables daily
- 2 hour or less of TV, video games, computer time
- 1 hour or more of physical activity
- 0 sugar or sweetened beverages.
- Goal is weight maintenance and/or decrease in BMI velocity.
- Move to Stage 2 if no changes after 3-6 months.

Stage 2 Structured Weight Management: PCP visits augmented with referral to in-house nutritionist or trained community health educator and/or referral to in-house pediatric weight management classes if available at your site.

Stage 3 Comprehensive Multidisciplinary Intervention: Referral to Pediatric Weight Management Center such as Healthy Hearts Clinic at Children's Hospital Oakland (see lab requirements prior to referral below) or the WATCH Clinic at UCSF.

Stage 4 Tertiary Care Intervention: Referral to Pediatric Subspecialist based on co-morbidity of system detected or for start of medications, very low calorie diets or weight control surgery. Lucile Packard Children's Hospital at Stanford is the only tertiary care center providing gastric banding or bypass surgery for children.

<u>Other Targeted Lab Tests for Extreme Obesity</u>

- ☐ ECG
- ☐ Liver U/S or bx if abnl LFTs
- ☐ TSH, T3, T4
- ☐ Urine microalbumin/creatinine ratio
- ☐ Polysomnography
- ☐ Skeletal radiographs (knee, hip, spine)
- ☐ Plasma 17-OH progesterone, plasma DHEAS, adrostenedione, testosterone
- ☐ LH and FSH (free and total)
- ☐ Genetic tests (FISH, fragile X)

Laboratory Testing Required by Healthy Hearts at Children's Hospital

- ☐ Fasting Lipid Panel
- ☐ AST/ALT
- ☐ Fasting Blood Glucose
- ☐ Fasting Insulin
- ☐ HgA1c
- ☐ TSH

Sources: Expert Committee Recommendations of the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity-2007, National Initiative for Children's Healthcare Quality
Child & Adolescent Obesity Provider Toolkit, CMA Foundation, California Association of Health Plans 2008
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