Health Leaders Network
Partnership for Population Health

HLN in 10: Childhood Obesity

Dr. Katie Queen
& Dr. Amanda Staiano

September
2021

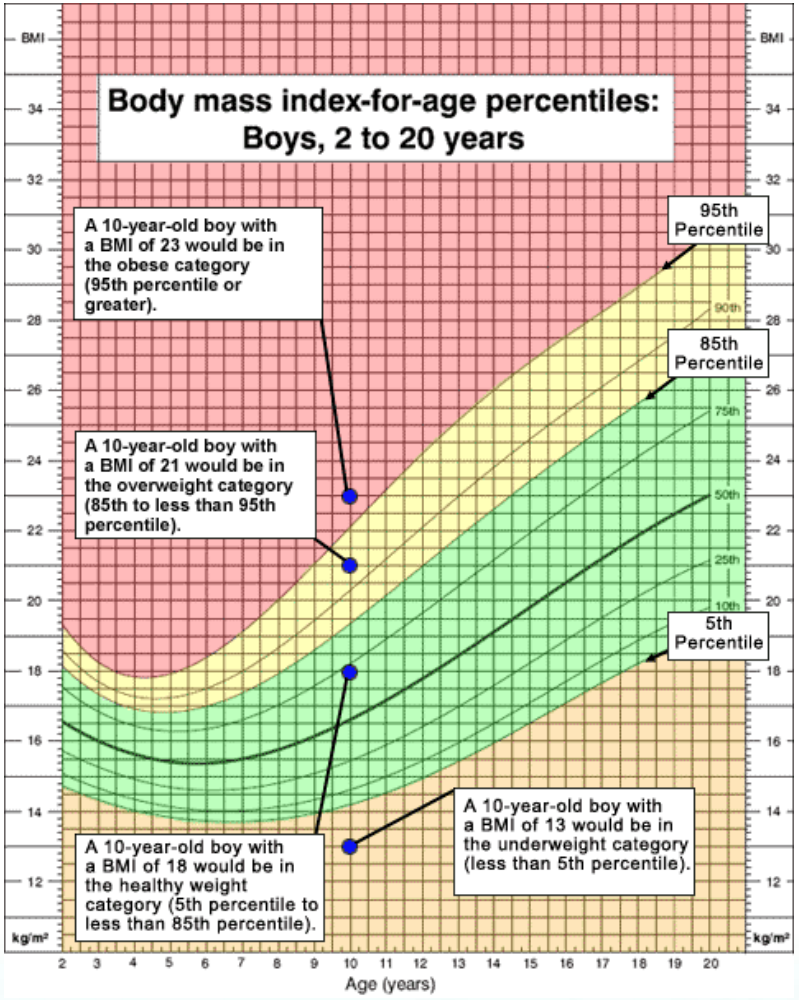
Defining Childhood Obesity

- What defines obesity for our pediatric population?

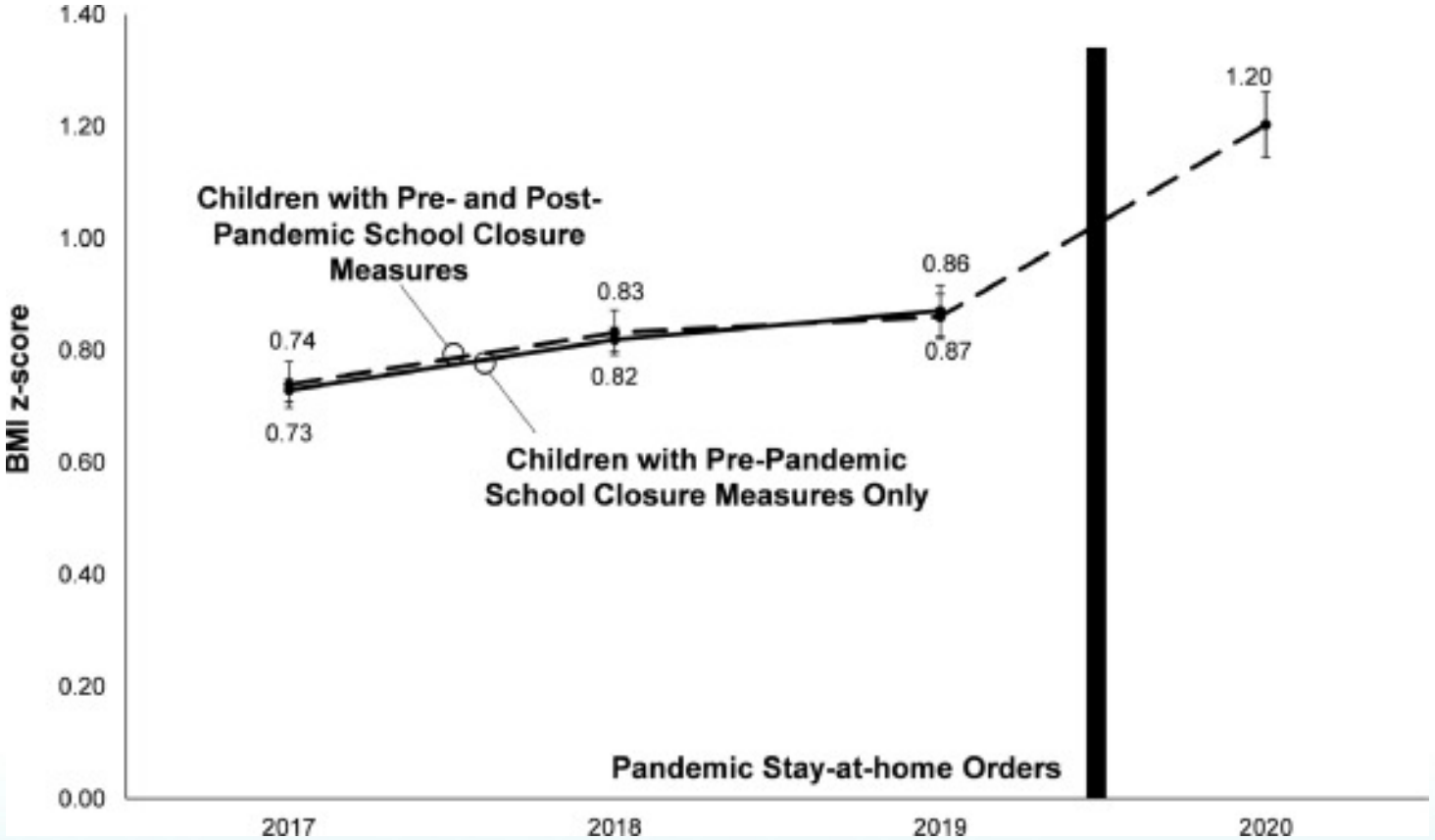
Childhood Obesity Classification (Age 2-19 years)	
Classification	**Percentile Range (% BMI)**
Underweight	Less than 5%
Healthy weight	5 to < 85%
Overweight	85 to < 95%
Obesity (Class 1)	95 to < 99%
Severe Obesity (Class 2)	120% of the 95th, or ≥ 35 kg/m^2
Morbid obesity (Class 3)	140% of the 95th, or ≥ 40 kg/m^2

Defining Childhood Obesity

Healthy Weight	Overweight	Obesity
BMI	BMI	BMI
5-84%	85-94%	≥95%



Accelerated Weight Gain during Pandemic



Weaver et al., AJPM 2021

Treatment Options for Providers

- Evidenced based treatment within the Pediatrician's office, AAP 2007 Policy

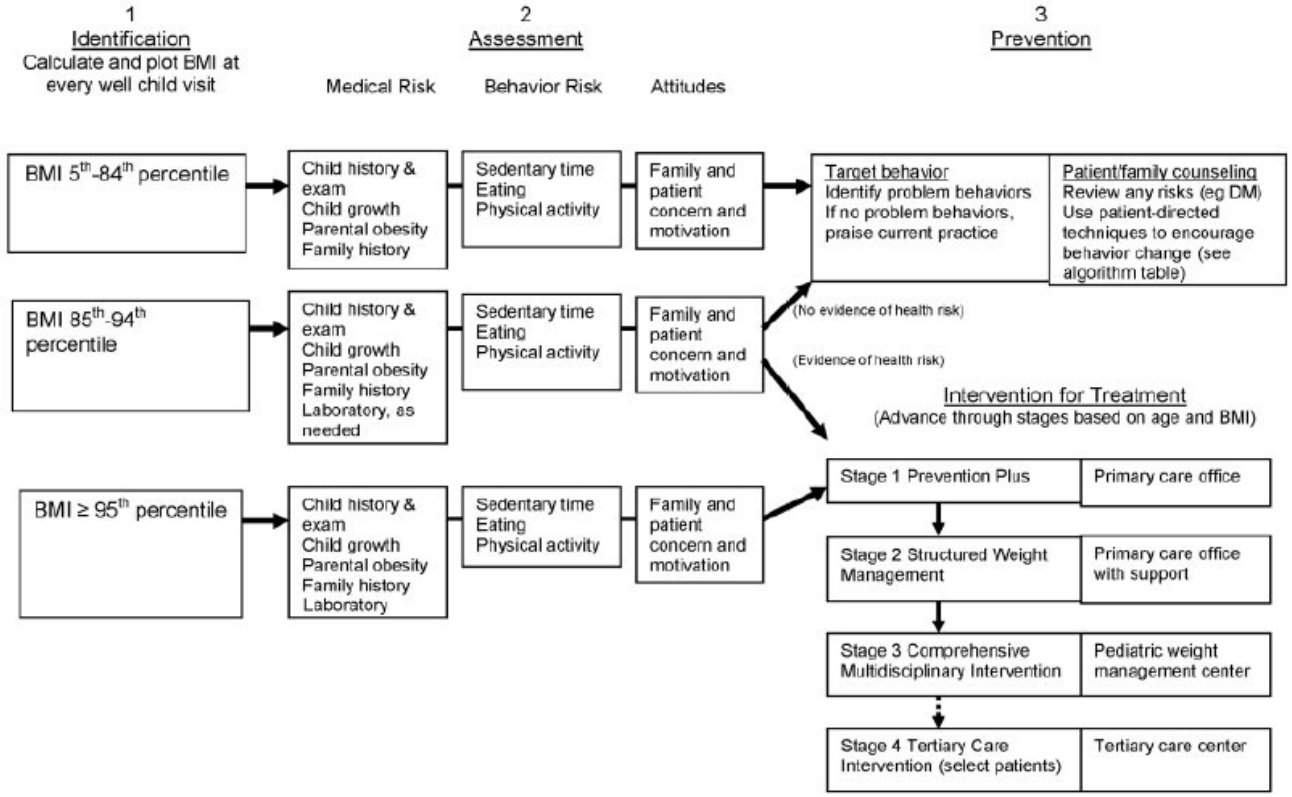
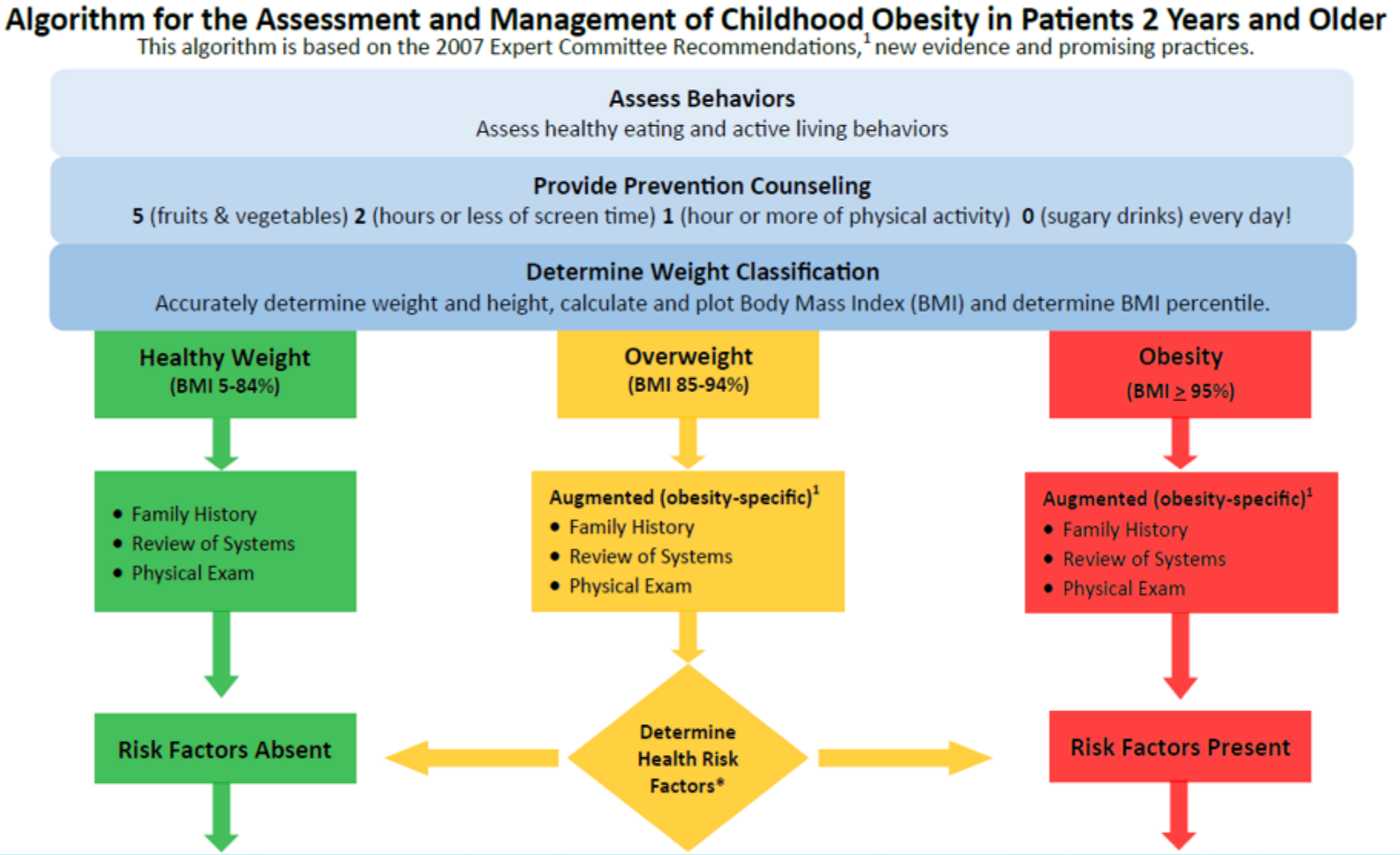


FIGURE 1
Universal assessment of obesity risk and steps to prevention and treatment. DM indicates diabetes mellitus.

Treatment Options for Providers



Assess Behaviors

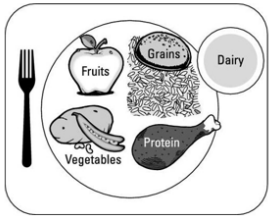
CHILD'S NAME: _____ CHILD'S AGE: _____

BELOW ARE SOME HEALTHY HABITS THAT WE RECOMMEND!

✓ CHECK the healthy habits that your family is already doing.

CIRCLE any healthy habits that you would like to work on or discuss today.

☐ MAKE HALF YOUR PLATE FRUITS & VEGETABLES!



INCLUDE PROTEIN TO HELP YOUR CHILD'S IRON!

CHOOSE 100% WHOLE GRAINS!

☐ DRINK MORE WATER.

GIVE WATER STARTING AT 6 MONTHS.

LIMIT SUGAR-SWEETENED DRINKS, SODAS, SWEET TEAS, FRUIT & ENERGY DRINKS TO ALMOST NONE.

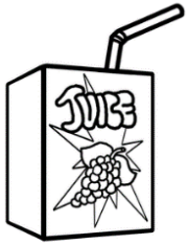
☐ DRINK PLAIN, UNFLAVORED MILK FOR CALCIUM.

UNDER 1 YEAR	Avoid cow's milk
1-2 YEARS OLD	Whole milk, 16-24 oz a day
2-8 YEARS OLD	Low fat, 16-24 oz a day
9-18 YEARS OLD	Low fat, 24-32 oz a day

Alternatives: Unsweetened Soy Milk, Low Sugar yogurt, Low Fat Cheese

☐ LIMIT JUICE.

EAT THE WHOLE FRUIT INSTEAD.



Under Age 1 yr	Avoid unless constipated.
1-3 YEARS	0 to 4 OZ A DAY
4-6 YEARS	0 to 6 OZ A DAY
7+ YEARS	0 to 8 OZ A DAY

Look for 100% FRUIT JUICE

We are interested in the health and well-being of all our patients. Please take a moment to answer these questions.

5210 LET'SGO!
www.letsgo.org

5210 Healthy Habits Questionnaire ages 2-9

Child's Name: _____

Age: _____ Today's Date: _____

1. How many servings of fruits or vegetables does your child eat a day? _____
   One serving is most easily identified by the size of the palm of your hand.
2. How many times a week does your child eat dinner at the table together with the family? _____
3. How many times a week does your child eat breakfast? _____
4. How many times a week does your child eat takeout or fast food? _____
5. How much recreational (*outside of school work*) screen time does your child consume daily? _____
6. Is there a television set or Internet-connected device in your child's bedroom? _____
7. How many hours does your child sleep each night? _____
8. How much time a day does your child spend in active play? _____
   (faster breathing/heart rate or sweating)?
9. How many 8-ounce servings of the following does your child drink a day?

   100% juice _____ Whole milk _____

   Water _____ Soda or punch _____

   Fruit or sports drinks _____ Nonfat (skim), low-fat (1%), or reduced-fat (2%) milk _____

10. Based on your answers, is there ONE thing you would like to help your child change now? Please check one box.
    - ☐ Eat more fruits and vegetables.
    - ☐ Eat less fast food/takeout.
    - ☐ Drink less soda, juice, or punch.
    - ☐ Drink more water.
    - ☐ Spend less time watching TV/movies and playing video/computer games.
    - ☐ Take the TV out of the bedroom.
    - ☐ Be more active – get more exercise.
    - ☐ Get more sleep.

Please give the completed form to your clinician. **thank you!**

Provide Prevention Counseling

5 (fruits & vegetables) **2** (hours or less of screen time) **1** (hour or more of physical activity) **0** (sugary drinks) every day!

5-2-1-0 Every Day!

For more information about 5-2-1-0 visit www.letsgo.org

Healthy Tips Sheet (Ages 2 to 4)

Blue Cross Blue Shield of Michigan

A nonprofit corporation and independent licensee of the Blue Cross and Blue Shield Association

Good Health Club

Assessment

Name: _____ Date of Birth: _____

Height: _____ Weight: _____

BMI: _____ BMI %: _____

Risk Level: _____ Date of Assessment: _____

Get on a healthy track by adding these tips to your daily routine.

5

Eat 5 servings of fruits and veggies every single day.

Examples:

Fruits

- Apples, bananas, oranges
- Berries
- Pears, plums, melon
- Canned fruit (packed in 100% juice or water)

Vegetables

- Asparagus, broccoli
- Beans, lentils, peas
- Carrots, celery
- Spinach, collard greens
- Tomatoes, peppers
- Canned veggies

Every meal should be balanced.

Portion sizes:

- You should give one tablespoon of food for each year of your child's age
- Give 1/4 to 1/3 the size of adult portions for children under the age of 4
- Do not give children younger than four years of age round, firm food unless you chop it up so they do not choke

Size of 1 egg = 1 serving of fruits and vegetables

1 tablespoon = 1 serving of each

- Lean meat
- Grains, rice, bread

Know your serving sizes.

2

Limit screen time to 2 hours or less.

Screen time includes:

- Watching TV, videos or DVDs
- Playing on the computer
- Playing regular and hand-held video games
- Going to the movies

1

Get at least 1 hour of physical activity.

Make sure an adult is there.

- Walk with your child 10 minutes each day
- Play catch
- Jump, skip or hop to music

Limit sweetened drinks to 0.

Examples of sweetened drinks to stay away from:

- Soft drinks, soda, pop
- Juice drinks
- Chocolate milk
- Sports drinks

Instead, drink:

- Water with lemon, lime or orange to add flavor
- 1% or skim milk
- Ask your physician about other healthy drink options

0

Review provided by leading experts:
American Academy of Pediatrics
American Diabetes Association

Document BMI%

Body Mass Index Percentile Ages 2 to 20 Years

Underweight	Healthy Weight	Overweight	Obesity	Severe Obesity
< 5th percentile	5-84th percentile	85-94th percentile	95-99th percentile or BMI > 30	BMI ≥ 120% of the 95th percentile or BMI ≥ 35 kg/m²

Caveat: Not all patients with BMI 85% or above have excess adiposity, and many children and adolescents with BMI < 5% are healthy and do not need treatment.

The CDC recommends using the WHO growth charts to monitor growth for infants and children ages 0 to 2 years of age in the U.S. and using the CDC growth charts for children age 2 years and older.

Take an Obesity Specific Family History

- Obesity
- Diabetes
- Heart Disease
- High Cholesterol
- High Blood Pressure

Perform an Obesity Specific ROS

SYMPTOMS	RELATED CO-MORBIDITY
Nervousness, school avoidance, social inhibitions	Depression, anxiety, bullying
Fatigue, Muscle aches	Vitamin D deficiency
Polyuria, polydipsia, fatigue, nocturia	Type 2 Diabetes (T2DM)
Headaches, facial numbness	Idiopathic Intracranial Hypertension (Pseudotumor cerebri)
Skin pigmenting, skin tags	Insulin resistance (IR)
Daytime somnolence, loud snoring, witnessed apnea, attention deficit	Obstructive sleep apnea (OSA)
Abdominal pain, indigestion	Gastroesophageal reflux disease (GERD), gall bladder disease, constipation
Hip or knee pain	Slipped capital femoral epiphysis (SCFE), early osteoarthritis
In-toeing, leg bowing, mild knee pain	Blount's disease
Hirsutism, acne, irregular menses	Polycystic Ovarian Syndrome (PCOS)

Perform an Obesity specific Exam

TABLE 6 Physical Examination Findings in Obesity Assessment and Possible Causes

System	Findings	Possible Explanations
Anthropometric features	High BMI percentile	Overweight or obesity
	Short stature	Underlying endocrine or genetic condition
Vital signs	Elevated blood pressure	Hypertension if systolic or diastolic blood pressure >95th percentile for age, gender, and height on ≥3 occasions
Skin	Acanthosis nigricans	Common in obese children, especially when skin is dark; increased risk of insulin resistance
	Excessive acne, hirsutism	Polycystic ovary syndrome
	Irritation, inflammation	Consequence of severe obesity
	Violaceous striae	Cushing syndrome
Eyes	Papilledema, cranial nerve VI paralysis	Pseudotumor cerebri
Throat	Tonsillar hypertrophy	Obstructive sleep apnea
Neck	Goiter	Hypothyroidism
Chest	Wheezing	Asthma (may explain or contribute to exercise intolerance)
Abdomen	Tenderness	Gastroesophageal reflux disorder, gallbladder disease, NAFLD[a]
	Hepatomegaly	NAFLD[a]
Reproductive system	Tanner stage	Premature puberty in <7-y-old white girls, <6-y-old black girls, and <9-y-old boys
	Apparent micropenis	May be normal penis that is buried in fat
	Undescended testes	Prader-Willi syndrome
Extremities	Abnormal gait, limited hip range of motion	Slipped capital femoral epiphysis
	Bowing of tibia	Blount disease
	Small hands and feet, polydactyly	Some genetic syndromes

[a] These conditions are usually without signs.

Assess medications that may cause weight gain

Categorization of certain medications by their effects on body weight [1]

Produce weight loss
Anticonvulsants: topiramate, zonisamide, lamotrigine
Antidepressants: bupropion, venlafaxine, desvenlafaxine
Antipsychotics: ziprasidone
Attention deficit hyperactivity disorder medications: eg, methylphenidate, amphetamine, dextroamphetamine [2,3]
Are weight neutral
Antipsychotics: haloperidol, aripiprazole
Produce weight gain
Antidepressants: monoamine oxidase inhibitors, tricyclic antidepressants (nortriptyline, amitriptyline, doxepin), paroxetine, citalopram, escitalopram, imipramine, mirtazapine
Antipsychotics: thioridazine, olanzapine, risperidone, clozapine, quetiapine
Diabetes medications: eg, insulin, sulfonylureas, thiazolidinediones, meglitinides
Glucocorticoids: eg, prednisone
Hormonal agents: especially progestins, eg, medroxyprogesterone
Anticonvulsants: eg, divalproex
Neurologic and mood-stabilizing agents: eg, lithium, carbamazepine, gabapentin, valproate
Antihistamines: cyproheptadine
Alpha blockers: especially terazosin
Beta blockers: especially propranolol

Reference:

1. *Tsai AG, Wadden TA. In the Clinic: Obesity. Ann Intern Med 2013; 159:ITC3-1.*
2. *Catalá-López F, Hutton B, Núñez-Beltrán A, et al. The pharmacological and non-pharmacological treatment of attention deficit hyperactivity disorder in children and adolescents: A systematic review with network meta-analyses of randomised trials. PLoS One 2017; 12:e0180355.*
3. *Goldfield GS, Lorello C, Doucet E. Methylphenidate reduces energy intake and dietary fat intake in adults: a mechanism of reduced reinforcing value of food? Am J Clin Nutr 2007; 86:308.*

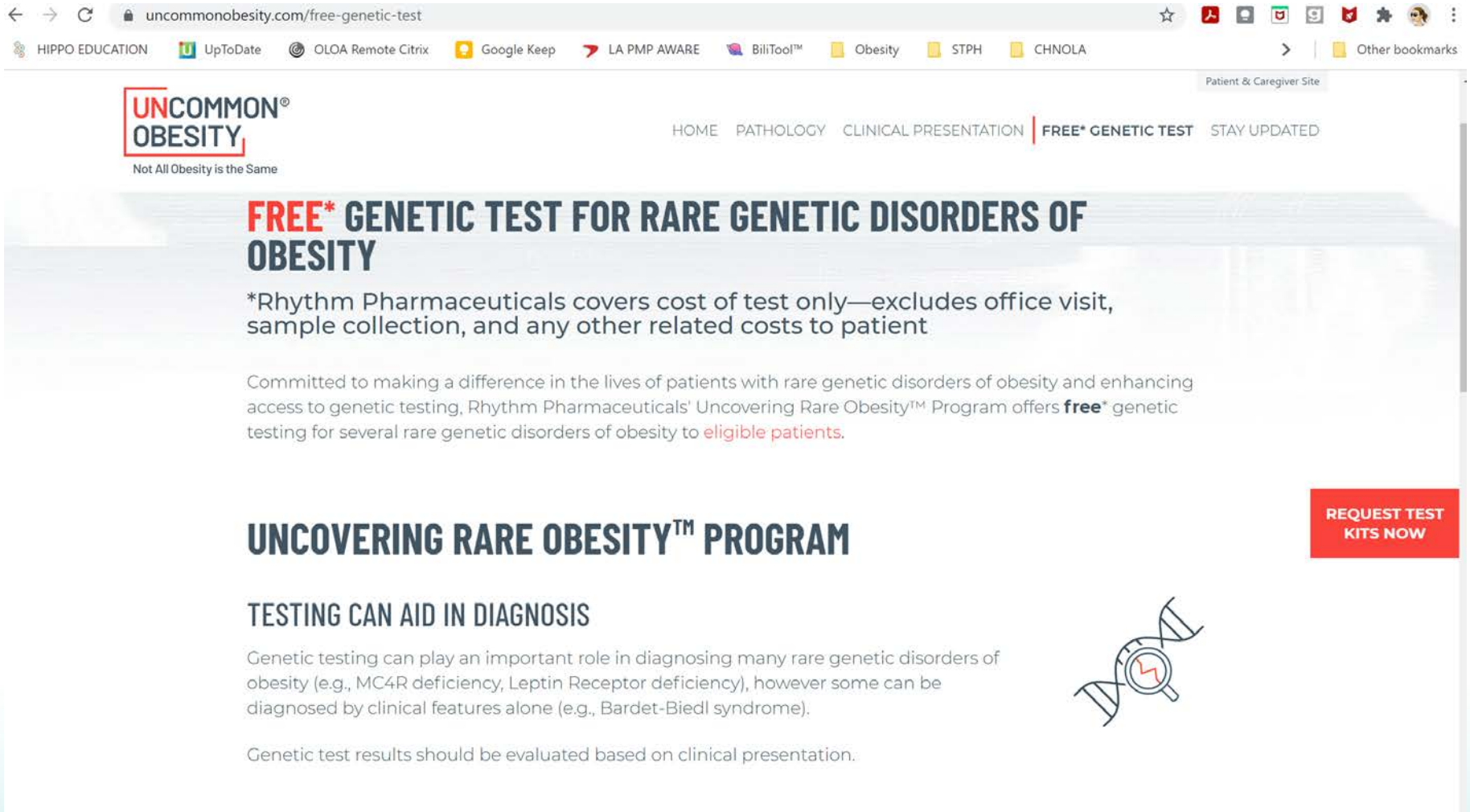
Adapted from: Bray GA, Ryan DH. Medical therapy for the patient with obesity. Circulation 2012; 125:1695.

Order appropriate Labs & Studies

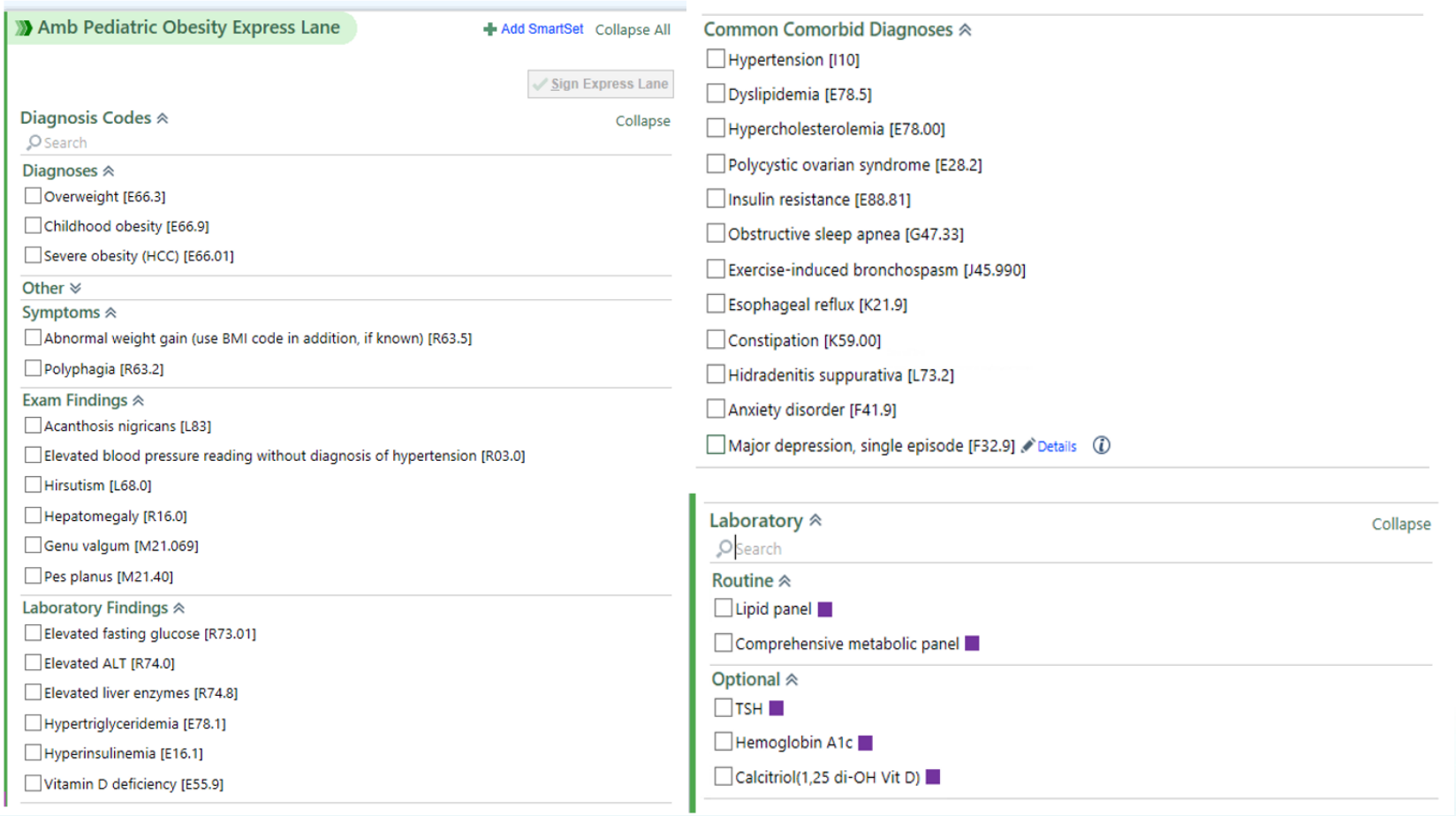
Diagnostic Work-Up: Labs and Studies

INFANCY (0-24 MONTHS)	TODDLER (AGE 2-4) YEARS	EARLY CHILDHOOD (AGE 5-9 YEARS)	PUBERTY (AGE 10-14 YEARS)	ADOLESCENT (AGE 15-18 YEARS)
Weight> Length	BMI ≥ 95th percentile Or ≥ 85th percentile with 2 or more risk factors (24-48 months)	BMI ≥ 95th percentile Or ≥ 85th percentile with 2 or more risk factors	BMI ≥ 95th percentile Or ≥ 85th percentile with 2 or more risk factors	BMI ≥ 95th percentile Or ≥ 85th percentile with 2 or more risk factors
	– Fasting Blood Glucose and/or HbA1c – Fasting Lipid Panel/Non fasting if fasting not feasible – ALT, AST, consider GGT – Consider 25 OH Vitamin D – BP annually if > 3 years			
		– Consider Sleep Study – If liver disease suspected, consider imaging – Consider Uric Acid – Consider fasting serum insulin		
			– Consider Urine Microalbumin/Creatinine ratio – Consider C-peptide, hs-CRP	

Consider genetic testing if obesity before age 5 yrs.



Use OLOL Epic Express Lane “BMI Counseling”



Schedule the next visit before they leave your office

4 Tiered Approach for Management of Pediatric Obesity			
Stage	**Name**	**Location of Intervention**	**Follow-up**
Stage 1	Prevention plus	Primary care office	Monthly
Stage 2	Structured weight management	Primary care office with support	Biweekly
Stage 3	Comprehensive multidisciplinary intervention	Pediatric weight management center	Weekly
Stage 4	Tertiary care intervention	Tertiary care center	Weekly

Monthly Visits In Your Office

Stage 1: Prevention Plus

CE=CONSISTENT EVIDENCE **ME**=MIXED EVIDENCE **S**=SUGGESTION FROM EXPERTS

NUTRITION

- ✓ Minimize or eliminate SSBs (ME)
- ✓ Consume >= 5 servings of Fruits & Vegetables per day. (ME)
- ✓ Limit eating out (ME)
- ✓ Increase family meals together at home at least 5 times/wk. (ME)
- ✓ Eat breakfast daily (ME)
- ✓ Allow child to self regulate meals and avoid overly restrictive behaviors (CE<12 y, S>12 y.)
- ✓ Provider to acknowledge cultural differences and adapt recommendations as such (S)

ACTIVITY

- ✓ Encourage physical activity (>= 60 minutes / day) (ME)
- ✓ Limit daily hours of screen time (<= 2 hours/day) with no T.V. in child's room (CE)

GOAL: Weight maintenance with growth (↓ BMI)

FOLLOW UP: *MONTHLY*

IF NO SUCCESS IN 3-6 MONTHS → STAGE 2: Structured Wt Mgmt Pgm

Monthly Visits In Your Office

- Use AAP Next Step Themes
  - Develop **Relationships**
  - Encourage **Small Steps**
  - Use **Motivational Interviewing**
  - Focus on **Countable Goals**
  - Use **Community Resources**

Set Reasonable Expectations

Weight-loss Targets

Age	BMI Percentile	Target	Rate
2-5 years	85-94th >94th	Weight maintenance until BMI < 85th	If loss, should not exceed 1 lb/month
6-11 years	85-94th 94-99th >99th	Weight maintenance Weight main or loss Weight loss	If loss, 1 lb/month If loss, 1 lb/month No more than 2 lb/week
>12 years	85-94th 95-98th >99th	Weight maintenance Weight loss until <85th Weight loss	 No more than 2 lb/week

Barlow S. Pediatric 2007

Management and Treatment Stages for Patients with Overweight or Obesity

- Patients should start at the least intensive stage and advance through the stages based upon the response to treatment, age, BMI, health risks and motivation.
- An empathetic and empowering counseling style, such as motivational interviewing, should be employed to support patient and family behavior change.[8,9]
- Children age 2 – 5 who have obesity should not lose more than 1 pound/month; older children and adolescents with obesity should not lose more than an average of 2 pounds/week.

Stage 1 Prevention Plus

Where/By Whom: Primary Care Office/Primary Care Provider
What: Planned follow-up themed visits (15-20 min) focusing on behaviors that resonate with the patient, family and provider. Consider partnering with dietician, social worker, athletic trainer or physical therapist for added support and counseling.
Goals: Positive behavior change regardless of change in BMI. Weight maintenance or a decrease in BMI velocity.[4]
Follow-up: Tailor to the patient and family motivation. Many experts recommend at least monthly follow-up visits. After 3 – 6 months, if the BMI/weight status has not improved consider advancing to Stage 2.

Stage 2 Structured Weight Management

Where/By Whom: Primary Care Office/Primary Care Provider with appropriate training
What: Same intervention as Stage 1 while including more intense support and structure to achieve healthy behavior change.
Goals: Positive behavior change. Weight maintenance or a decrease in BMI velocity.
Follow-up: Every 2 - 4 weeks as determined by the patient, family and physician. After 3 – 6 months, if the BMI/weight status has not improved consider advancing to Stage 3.

Stage 3 Comprehensive Multi-disciplinary Intervention

Where/By Whom: Pediatric Weight Management Clinic/Multi-disciplinary Team
What: Increased intensity of behavior changes, frequency of visits, and specialists involved. Structured behavioral modification program, including food and activity monitoring, and development of short-term diet and physical activity goals.
Goals: Positive behavior change. Weight maintenance or a decrease in BMI velocity.
Follow-up: Weekly or at least every 2 – 4 weeks as determined by the patient, family, and physician. After 3 – 6 months, if the BMI/weight status has not improved consider advancing to Stage 4.

Stage 4 Tertiary Care Intervention

Where/By Whom: Pediatric Weight Management Center/Providers with expertise in treating childhood obesity
What: Recommended for children with BMI ≥ 95% and significant comorbidities if unsuccessful with Stages 1 - 3. Also recommended for children > 99% who have shown no improvement under Stage 3. Intensive diet and activity counseling with consideration of the use of medications and surgery.
Goals: Positive behavior change. Decrease in BMI.
Follow-up: Determine based upon patient's motivation and medical status.

References

1. Barlow S, Expert Committee. Expert committee recommendations regarding prevention, assessment, and treatment of child and adolescent overweight and obesity: Summary report. *Pediatrics*. 2007;120(4):S164-S192.
2. US Department of Health and Human Services. Expert panel on integrated guidelines for cardiovascular health and risk reduction in children and adolescents: Full report. 2012.
3. American Diabetes Association. Classification and diagnosis of diabetes. Sec.2. In Standards of Medical Care in Diabetes – 2015. Diabetes Care 2015;38(Suppl.1):S8-S16.
4. Taveras EM, Rifas-Shiman SL, Sherry B, et al. Crossing growth percentiles in infancy and risk of obesity in childhood. *Arch Pediatr Adolesc Med*. 2011;165(11):993-998.
5. Copeland K, Silverstein J, Moore K, et al. Management of newly diagnosed type 2 Diabetes Mellitus (T2DM) in children and adolescents. *Pediatrics*. 2013;131(2):364-382.
6. Estrada E, Eneli I, Hampl S, et al. Children's Hospital Association consensus statements for comorbidities of childhood obesity. *Child Obes*. 2014;10(4):304-317.
7. Haemer MA, Grow HM, Fernandez C, et al. Addressing prediabetes in childhood obesity treatment programs: Support from research and current practice. *Child Obes*. 2014;10(4):292-303.
8. Preventing weight bias: Helping without harming in clinical practice. Rudd Center for Food Policy and Obesity website. http://biastoolkit.uconnruddcenter.org/.
9. Resnicow K, McMaster F, Bocian A, et al. Motivational interviewing and dietary counseling for obesity in primary care: An RCT. Pediatrics. 2015;134(4): 649-657.

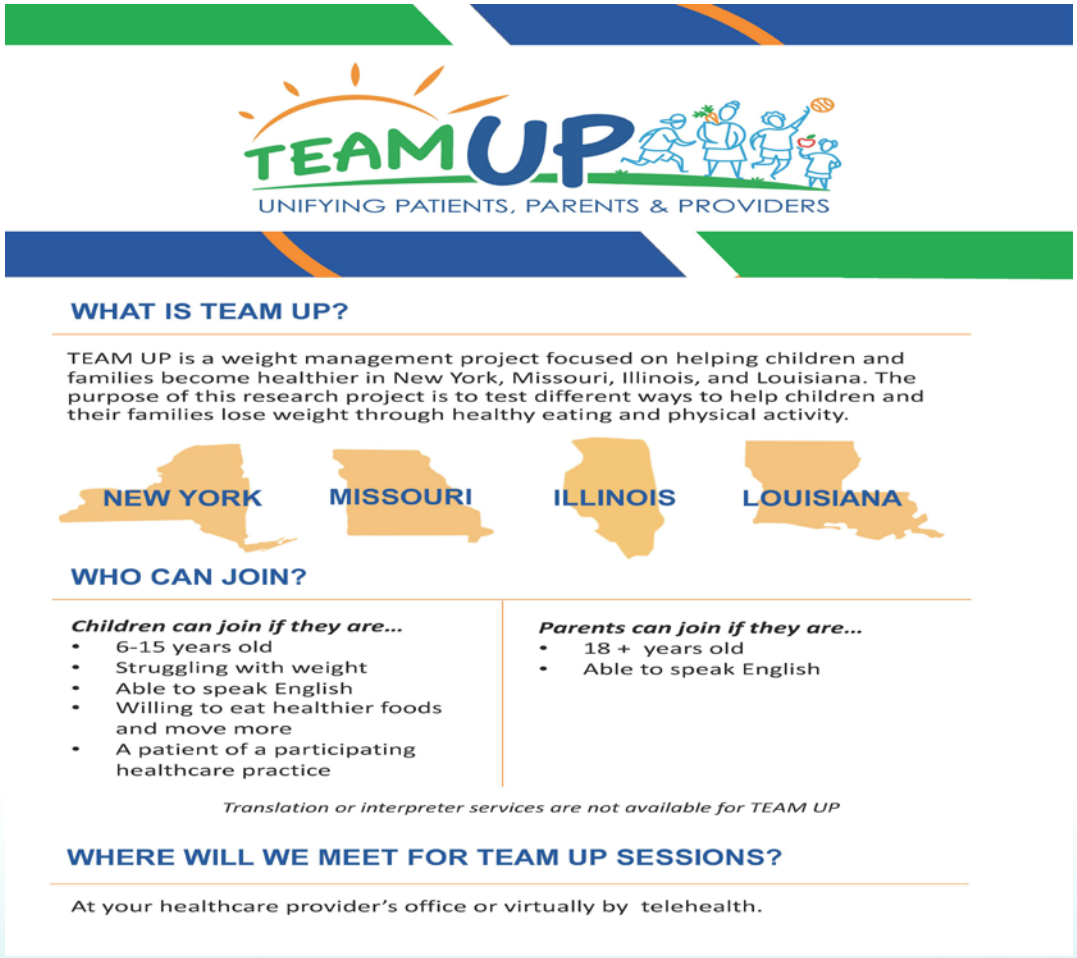
This algorithm was developed by the American Academy of Pediatrics Institute for Healthy Childhood Weight (Institute).
The Institute serves as a translational engine, moving policy and research from theory into practice in healthcare, communities, and homes.
The Institute gratefully acknowledges the shared commitment and support of its Founding Sponsor, Nestlé.

3-6 months
- Your Office
- Offer monthly follow up

3-6 months
- Team Up Provider
- Dietician/Behavioral Coach

3-6 months
- OLOLCH Healthy Weight Clinic
- Pennington Bariatric Surgery

TEAM UP STUDY
(Stage 1 & 2 Treatment)



Go to www.jointeamup.org to sign up!

OLOLCH Healthy Weight Clinic= Stage 3

- Pediatrician trained in weight management
- Registered dietician
- Behavioral health coach (LCSW or LPC)
- Personalized program
- Meet every 2-4 weeks
- Rotate in subspecialists in future
- Research & Community Involvement
- Collaboration with OLOL/PBRC Bariatric program

OLOLCH Weight Management Clinic

- Clinic Go-Live on Friday, October 22, 2021
- Offering in person visits at the OLOL Children's Hospital 4th floor on Fridays.
- Offering virtual visits on all other Fridays.
- Patient Access and Referral Information
  - Epic In Network Order "Refer to healthy weight clinic"
  - Call 225-374-HEAL
  - Fax referral to 225-374-1678

Louisiana September Childhood Obesity Awareness Campaign

@PenningtonBiomedical @LSU @LouisianaAAP
#GetFedUp #ChildObesityAwareness

A is for apple	B is for breakfast	C is for checkup	D is for dairy	E is for eggplant	F is for fruit
G is for garden	H is for hopscotch	I is for ice pops	J is for juice	K is for kiwi	L is for lunch
M is for my plate	N is for noodle	O is for okra	P is for portions	Q is for quinoa	R is for restaurant
S is for	T is for	U is for	V is for	W is for	X is for x-

RESOURCE GUIDE

- Healthy Alphabet YouTube Playlist
  - www.laaap.org/obesityandnutrition
  - #GetFedUp
- Primary Care Provider Resources
  - https://ihcw.aap.org
- Obecity, USA- A campaign by Pennington Biomedical
  - https://visitobecity.org
- Team Up Page
  - www.jointeamup.org
- Pennington Biomedical Research Center
  - www.pbrc.edu
  - @PenningtonBiomedical

Provider Resources Available:

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Obesity Resources

4

Next Steps: A Practitioner's Guide of Themed Follow-up Visits to Help Patients Achieve a Healthy Weight

National Initiative for Children's Health Care Quality; Editors: Jonathan T. Fanburg, MD, MPH, FAAP; Victoria W. Rogers, MD, FAAP; Michael A. Dedekian, MD, FAAP; Emily Cooke, RD, LD; Shikha G. Anand, MD, MPH, FAAP: and Charles J. Homer, MD, MPH, FAAP

FORMAT:

Forms and Charts

Price $59.95

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QUANTITY: 1

Add to Cart

Description

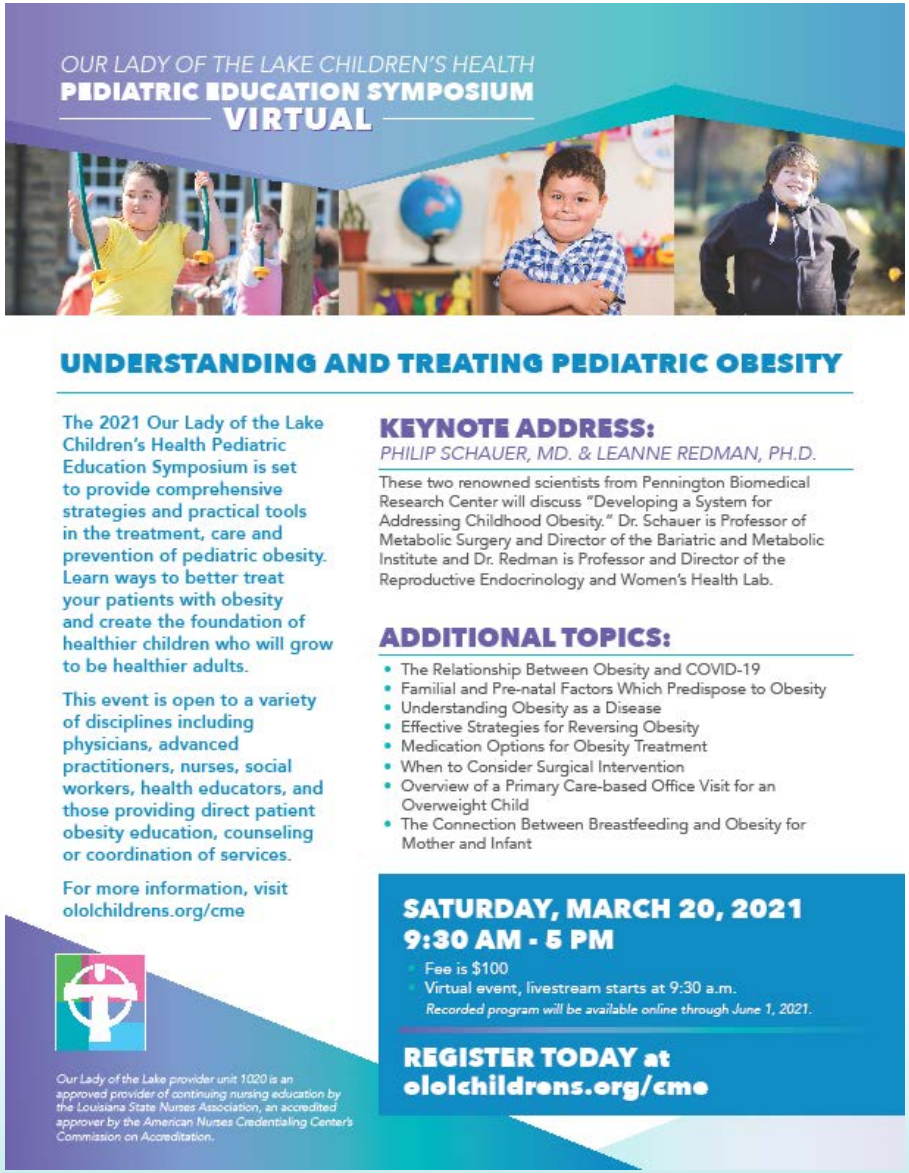
The *Next Steps* publication has two parts, the *Next Steps guide* and the *Next Steps Flip Chart* . The guide is designed for clinicians to help children and adolescents with weight management issues. This handy reference helps the clinician by outlining a series of planned follow-up visits designed to teach evidence-based weight management strategies that can lead to success for the practitioner and patient.

Guide contents include

Resources Available: Billing/Coding

- https://players.brightcove.net/6056665225001/default_default/index.html?videoId=6255262339001
- Email katiequeen3@gmail.com for a copy of the Pediatric Obesity Billing and Coding guide

Resources Available: HealthStream



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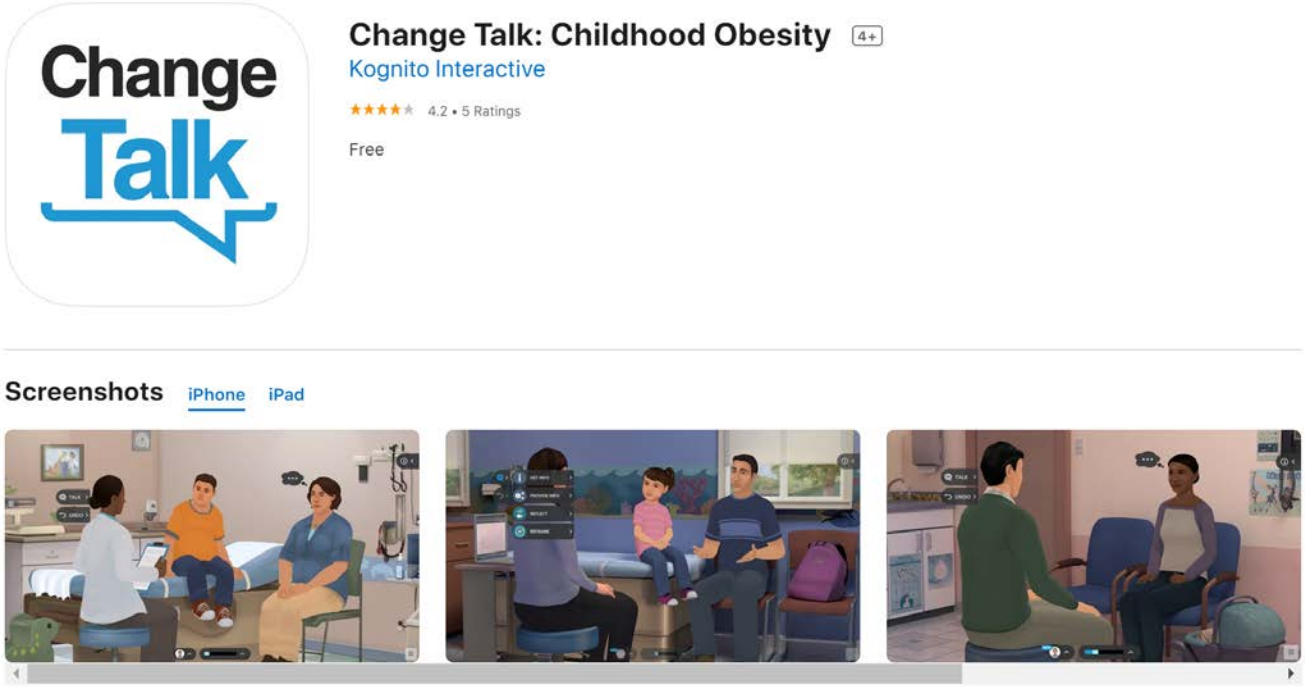

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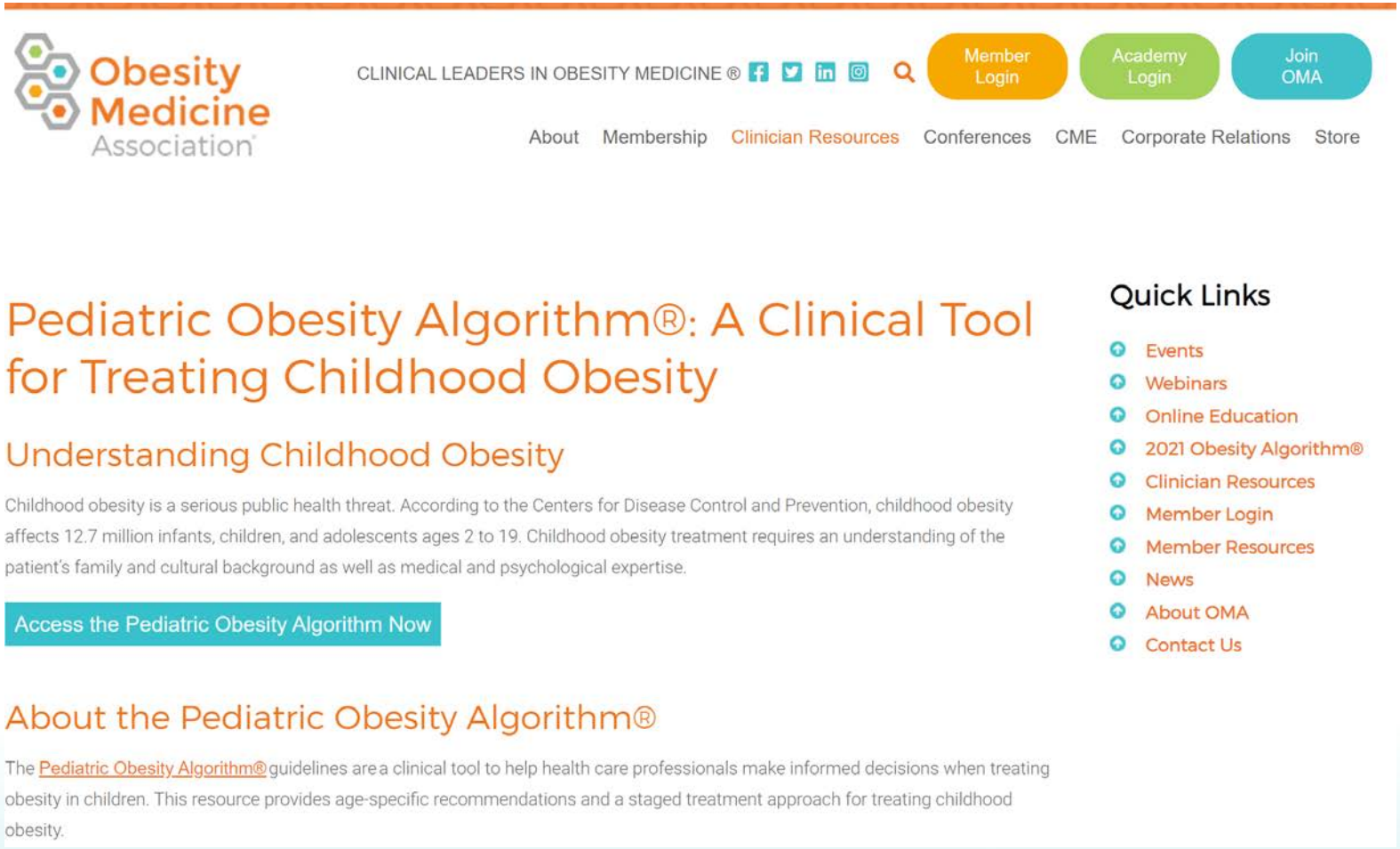
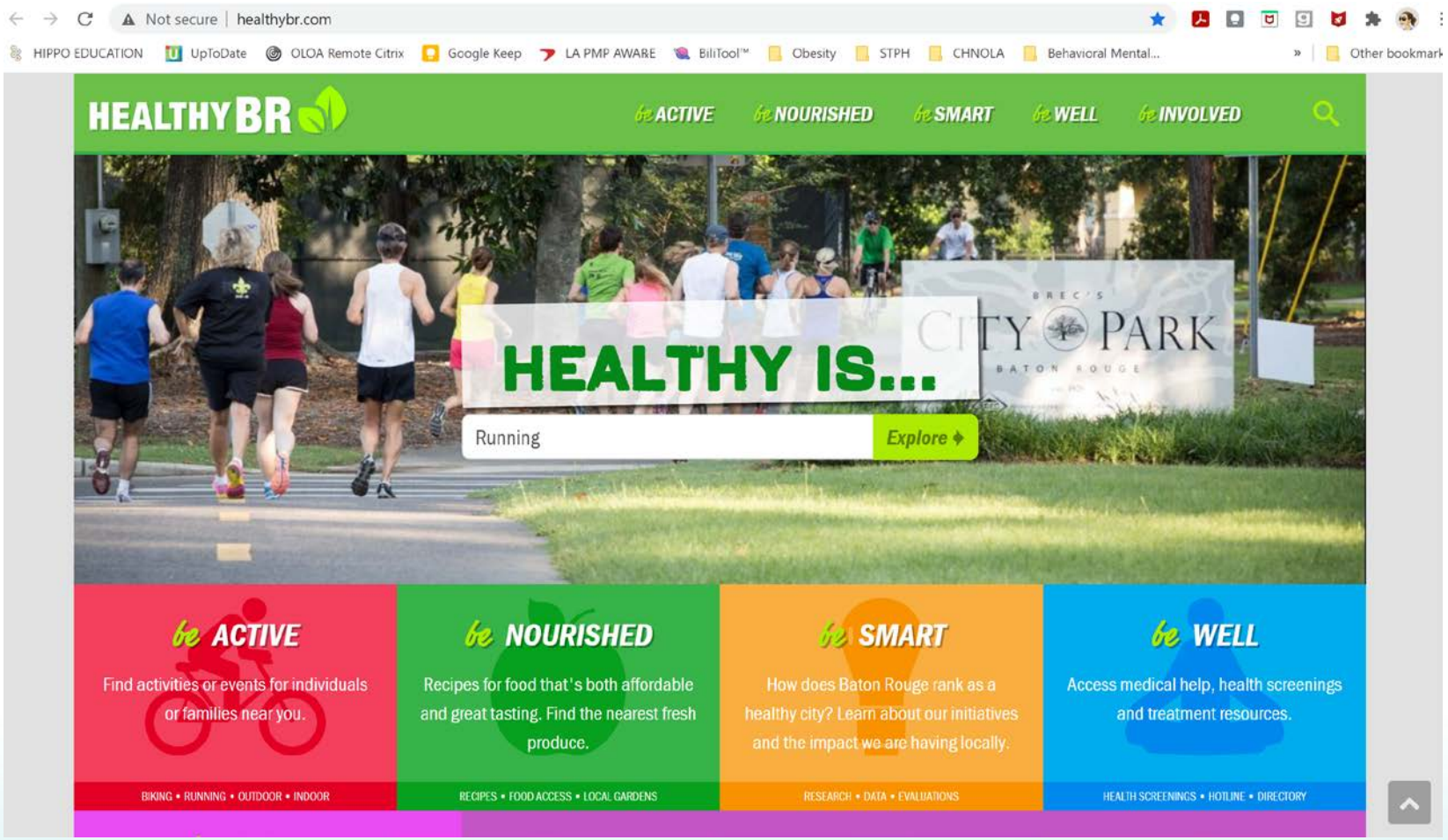
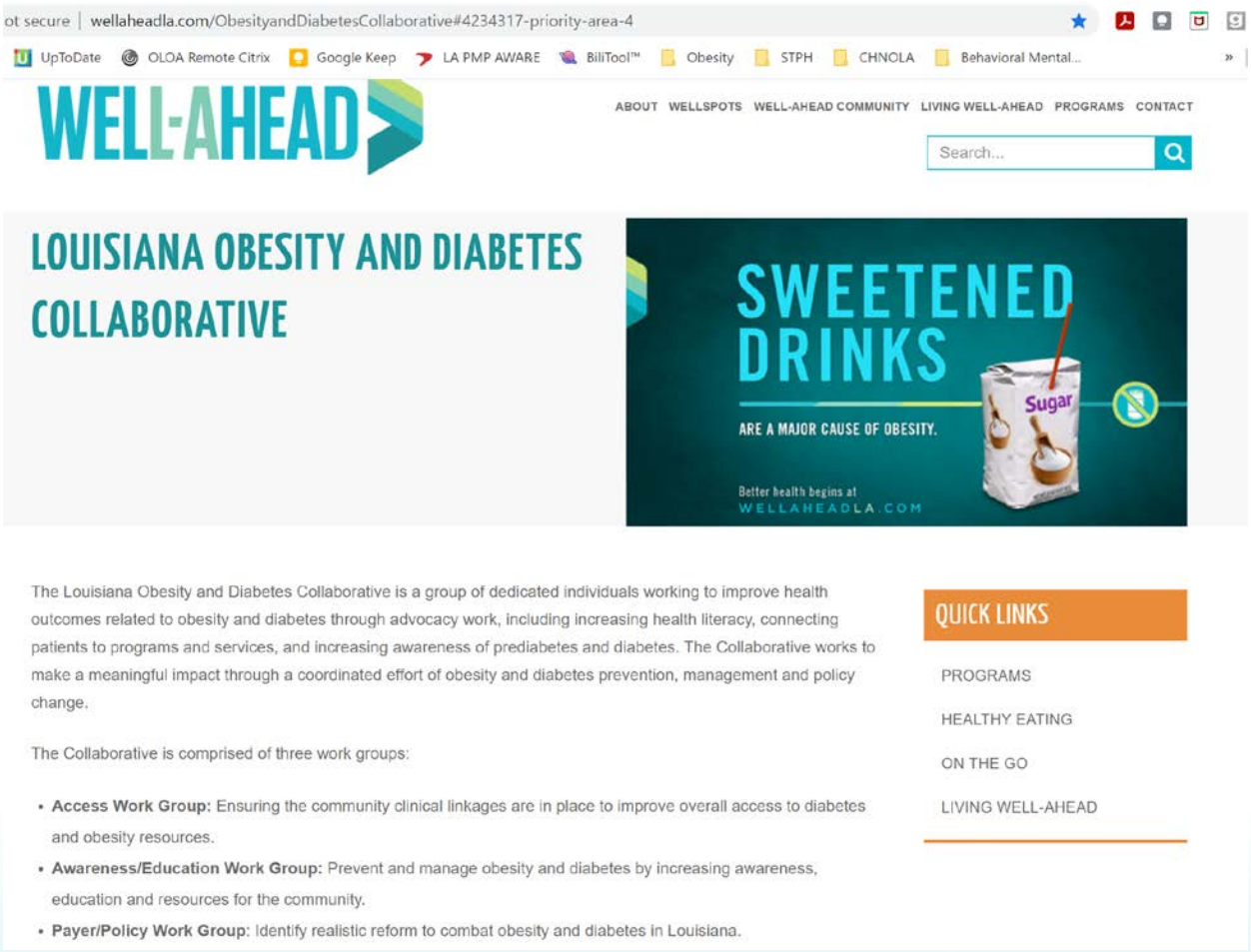


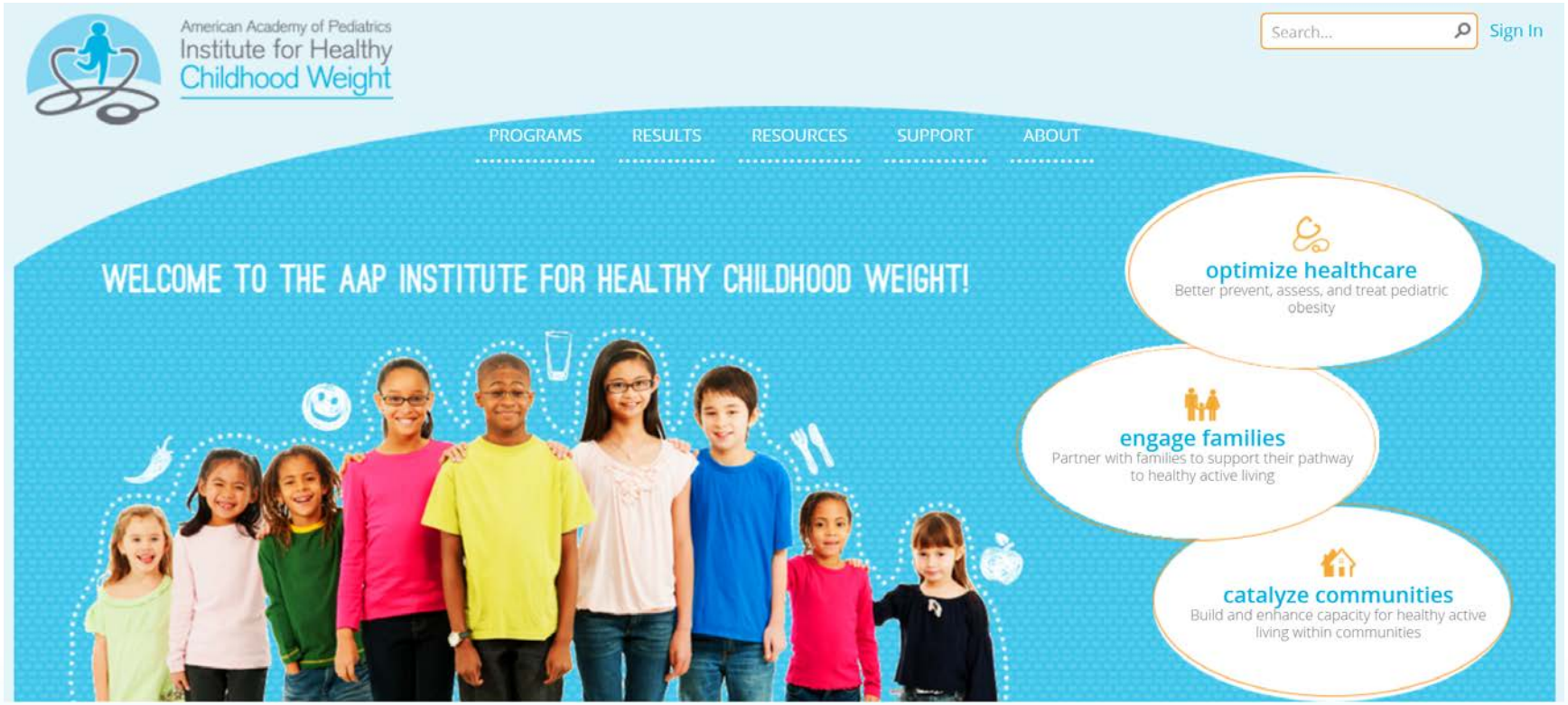
Get involved at the local level



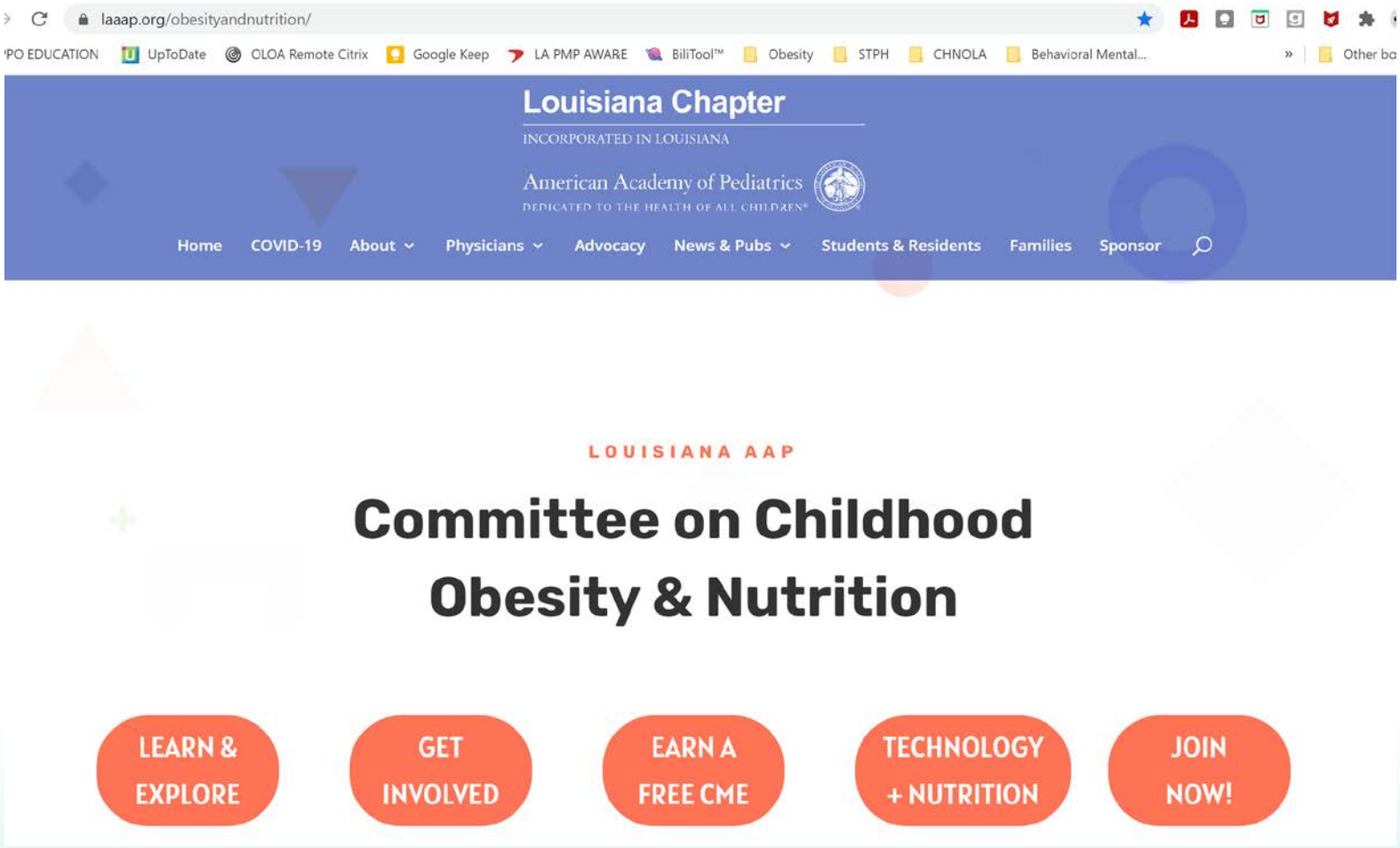
Get involved at the state level



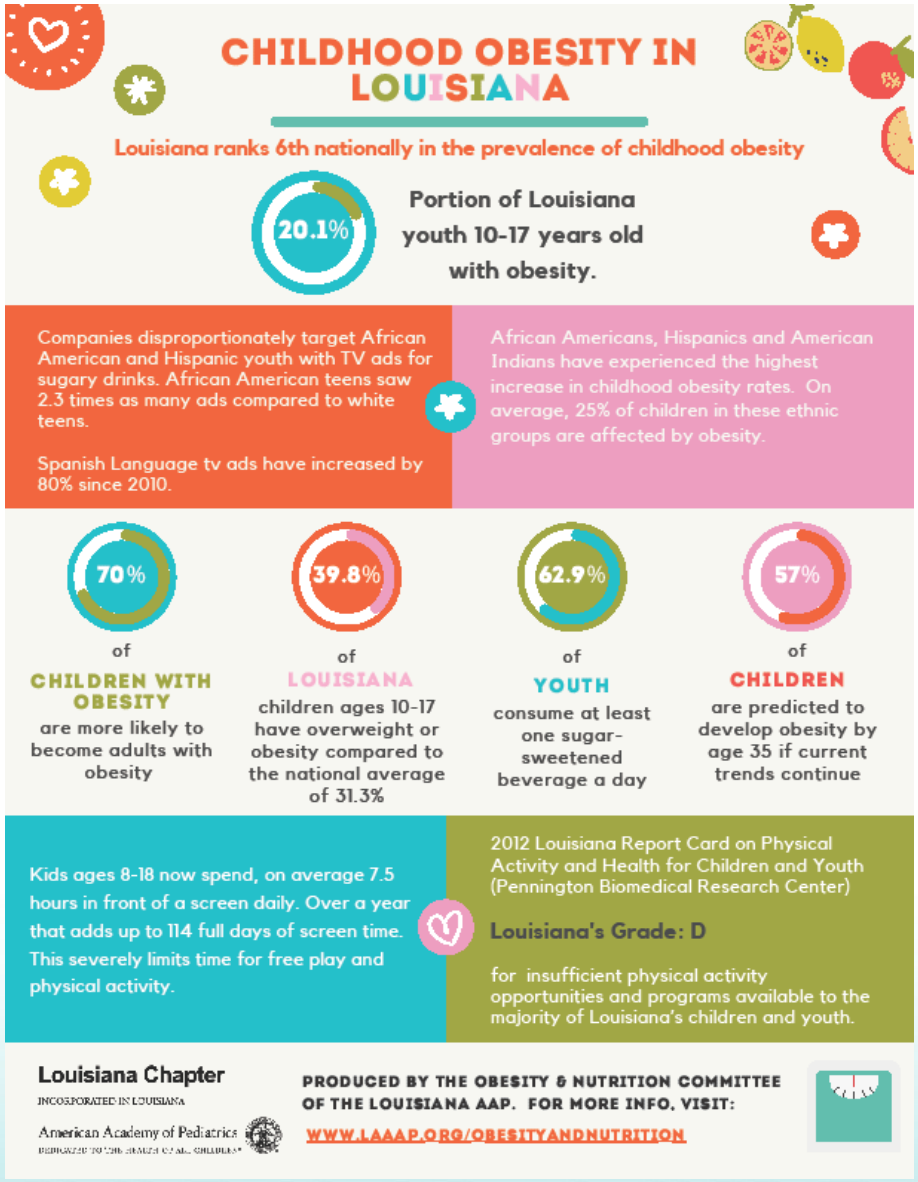
Get Involved at the national level



Join our team!



Louisiana Childhood Obesity Awareness Day June 6, 2021



We need you!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Louisiana
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2004-2008
Louisiana
House of Representatives
2000 - 2004
CAUTION
WET
FLOOR