



Maryland Chapter

Maryland Chapter, American Academy of Pediatrics Nutritional Health and Activity Program The “Toolkit” for Pediatricians and Family Physicians

Produced by the Maryland Chapter of the American Academy of Pediatrics: Taskforce on Prevention of Childhood Obesity: 2006

In an effort to better assist physicians in clinical practice, we have prepared this packet of material to assist in evaluating children for nutritional and physical activity concerns.

The packet consists of:

- 1) References and practice guidelines that have been published by the American Academy of Pediatrics, the Center for Disease Control, the American Heart Association, and other organizations in an effort to increase physician awareness of the increasing concerns of childhood obesity. [CLICK HERE](#)
- 2) Growth charts and BMI calculators that can be downloaded to incorporate into the patient’s record to document the child’s BMI, BMI percentile and yearly growth progress. [CLICK HERE](#)
- 3) Guidelines to assist the physician in evaluating and managing the child’s nutritional and activity status, prepared for use with toddlers, preschoolers, elementary school, and secondary school-aged patients. [CLICK HERE](#)
- 4) A page of advice on monitoring the overweight child for complicating co-morbidities that require early awareness and intervention. [CLICK HERE](#)
- 5) Handouts for patient, parent, and family to increase their awareness of their role in preventing excess weight gain by improving nutritional choices and increasing family physical activity. [CLICK HERE](#)
- 6) List of resources available in Maryland for referral of children with weight concerns to receive nutritional, physical, and psychological guidance for the child and their family. [CLICK HERE](#)

The website of the Maryland Chapter has additional resources and information for both physicians and the general public. Please refer to the site at www.mdaap.org.

Please let us know how we can improve this program to better meet the needs of your patients and your practice.

Thank you

Maryland Chapter, American Academy of Pediatrics Nutritional Health and Activity Program

Introduction

Goal: Achieve and maintain nutritional health and reduce the rates of excess weight gain and reduced physical activity in children.

Role of the Pediatrician: Encourage a healthy diet and physical activity for all children. Identify those at risk for failure to thrive and those at risk for obesity by early recognition and intervention.

Risk Assessment:

- Physical Exam: Measure and document weight and height
Plot weight for height and percentile if less than two years old
Plot BMI and percentile for all two years of age and older
Document progress in growth yearly
- Patient History: Document gestation, birth weight, rate of infantile weight gain
Document early feeding practices, breast vs bottle, timing of introduction of solids
- Family History: Document parental weight and height
Document parental risk for Metabolic Syndrome
- Diet History: Document eating patterns, including meals, snacks, beverages
Document servings of fruits, vegetables, fiber, fish
Frequency of fast food nutrition
Frequency of family meals and parent role model
Three day diet record to confirm true caloric intake if concerned
- Physical Activity: Family options for exercise
Organized sport and unstructured exercise
School based physical activity
Amount of “screen time” with video, computer, television
Document presence of television in bedroom
Determine barriers to child and family exercise
- Intervention: Determine family’s acceptance of concern, the key to motivation for change.
Address dietary options, acceptance of change.
Reduce screen time to 2 hours or less for all over 2 years
Increase active exercise to more than one hour a day
Refer to nutritionist, weight loss program early in course.

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Nutritional Health and Activity Program**

Infancy and Toddler

Role of the Pediatrician

- Physical Exam:** Measure and document weight, height, and head circumference
Plot growth profile and weight for height percentile
If the weight/height percentile exceeds the 95th percentile, three fold greater risk of BMI above 95th percentile at age 3.
If the BMI percentile at age 3-5 years is above the 95th percentile, more than 60% of these toddlers will be above 95th percentile at age 16 years.
Share the information and any concern with parents/caregivers
- Diet History:** Data supports the advantage of breast feeding to provide optimal nutrition. Breast feeding also allows the infant to self-regulate intake and to broaden flavor acceptance after nursing is completed. If a child is “ever” breast fed, there is a reduction in risk of obesity of 20%.
Infants who are bottle-fed should be weaned by 18 months as research confirms that for each month bottle feeding is used after 18 months increases obesity risk by 3%. At present, 20% of 2 year olds and 10% of 3 year olds use a bottle daily.
Solids should be introduced after 4 to 6 months of age to reduce risk of obesity and risk of Type 1 diabetes.
Toddlers should be encouraged to “self regulate” their intake as children have an “internal caloristat” until around two years of age. Parents should choose when to eat and what is offered, the child should choose how much. Three meals and one healthy snack is normal. Offer new foods repeatedly, placing next to accepted food
- Physical activity:** Under one year, physical activity is encouraged to promote developmental milestones: reach, transfer, roll, sit, creep, crawl, cruise, and walk. Create a safe area for unstructured play several times a day. Encourage “tummy time” for infants.
From one to three years of age, seek more than 30 minutes of structured play and more than 60 minutes of unstructured play each day. Encourage walking and reduce stroller use after two years. Avoid having television in child’s bedroom. The AAP advises reduction of television use to none under two years and no more than 2 hours a day in older children.
- Parent Role Model:** Encourage family meals, family physical activity.
Encourage parent attention to own eating and activity habits..

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Preschool: 3 – 5 years

Role of the Pediatrician

- Physical Exam: Measure and document weight, height, and blood pressure.
Plot BMI and percentile
If BMI percentile is below 10thile or above 85thile, share data and concern with parents. Studies show that parent recognition is best if expressed to them as “the child has fallen a bit behind, (or a bit ahead) of other children”.
Share that a BMIthile greater than 95% leads to a greater than 60% chance of BMI above 95thile by age 16.
- Diet History: Document frequency of meals at home versus fast food
(One fast food meal every 3 days adds 6# of weight/year)
Encourage that the family eat together, in an unhurried fashion
Avoid the “clean your plate” mentality
Remind parents that child self-regulates intake at meals
while parent regulates availability of food and snacks
Document fruit and vegetable intake, acceptance, and rejection
Advise parent that most pre-schoolers will accept a new food only after it is offered 6 to 10 times.
Discourage use of soft drinks, snacks, food as reward for behavior.
Encourage parents to let child help with food preparation and food shopping to encourage learning about the healthy diet.
Remind parents that “low fat” is often high sugar.
Remind parents that food “restriction” often increases desirability.
- Physical Activity: Encourage regular family physical activity, use of playgrounds.
Reduce use of television and video to 2 hours a day or less.
Reducing screen time without increasing activity does not help.
Risk of obesity is reduced 10% by every hour a day of moderate activity.
Average pre-school child spend 75% of waking hours inactive, only 12 minutes a day in vigorous activity.
Average pre-school child on playground devotes only 11% of time to vigorous play.
Address parent concern on the safety of neighborhood play and propose alternative sites.
Seek one hour of moderate to vigorous activity daily
General goal of 10 minutes of moderate activity for each waking hour.

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Elementary School: 5 to 12 years

Role of the Pediatrician

- Physical Exam:** Measure and document weight, height, and blood pressure
Plot BMI and percentile
If BMI percentile is below the 10th percentile or above the 85th percentile, share concerns and plans with the child and parents. Remind parents and child that a net excess of 50 calories a day over normal need leads to an excess of 5 pounds a year in weight gain. This can reflect excess intake or reduced physical activity. If the BMI is above the 95th percentile, meeting the diagnostic criteria of significant obesity, monitor for complications and refer for additional interventional programs, most of which begin at 8 yr
- Diet History:** Document dietary intake by 3 to 5 day prospective dietary record. Look for excess calories from low-nutrition snacks, soft drinks, or after school intake of excess juice or fast food. Ask about fast food intake, frequency, and use of “super-sized” portions. Review school breakfast and lunch choices. Encourage family trips to grocery to choose best nutritional options and get involved with improved family food choices. Encourage family meals
Avoid the “clean your plate” mentality
Encourage parents to purchase healthy snacks for the whole family and to recognize their own eating habits are a model for their child. Remind parents that low fat food is not necessarily low calorie food.
- Physical Activity:** Remind parents of need to be role model for increased physical activity.
Reduce “screen” time for television and videos to less than 2 hours a day. Risk of obesity increases 6 – 10% for every hour of television watched per day.
Risk of obesity can be reduced by 10% for every hour a day spent in moderate activity.
Encourage school systems to incorporate daily physical education in their curriculum.
Encourage parents to seek one hour a day of vigorous activity for their school-aged children
Advocate community programs of safe exercise for families by expanding hiking and biking paths, playgrounds, and rec programs.

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Secondary School: 12 to 18 years

Role of the Pediatrician

- Physical Exam: Measure and document weight, height, and blood pressure
Document Tanner stage of pubertal development
Plot BMI and percentile for age
Review BMI percentile with adolescent and family
 If below 10%ile, address eating issues, other symptoms.
 If above 85%ile, establish concern for increased risk of obesity and initiate plan for intervention. Refer for more aggressive intervention if any co-existing complications are identified.
 If above 95%ile, express concern and establish plan for referral for aggressive intervention.
If BMI %ile above the 85%ile, focus exam and laboratory to address possible complicating co-morbid concerns.
- Diet History: Document frequency of meals at home versus “fast food”
One fast food meal a week translates to 6# weight gain in year
Review after school intake with friends, eg “chicken box”
If unsure, ask for prospective 3 – 5 day diet record.
Encourage parents to purchase healthy meals and snacks for the whole family and to recognize their own eating habits are a model for their children.
Document intake of snacks, soda, juices, candy, and ice cream.
(Average teen consumes 870 cans of soda per year)
Remind family and teen that low fat is often not low calorie
Review school lunch choices
Document true intake of fruits and vegetables, encourage more.
Set realistic short-term behavior change goals for adolescent and family to meet, such as adding new vegetable or fish.
Follow closely for ability to modify diet in positive way.
Remind parents not to reward teens with food.
- Physical Activity: Document regular physical activity, school physical education, and after school sports and activities.
(Obesity risk reduced 10% for every hour of exercise)
Document television and screen time, reduce to 2 hours/day
Ask about walking to school and other safe walking areas.
(Every mile walked reduces obesity risk by 10%)
Encourage teens to maintain regular exercise, at least one hour a day, even if not playing sports, encourage walks/dance

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Monitoring for Complications of Childhood Obesity

Endocrine:

- Insulin resistance progressing to Type II diabetes
 - Onset before age 20 may reduce life expectancy by 16 years.
 - Monitor with routine U/A for glucose, hemoglobin A1C
 - Fasting insulin
- Hyperglycemic, hyperosmolar syndrome: acute emergency
 - Presents with emesis, pain, dizziness, weakness to coma
 - Lab: glucose greater than 600, osmolality greater than 320
- Polycystic ovary syndrome in young women
 - Overweight, hirsute, acne, amenorrhea or dysmenorrhea
 - Monitor with measuring androgens: testosterone
- Premature puberty
 - Monitor by exam, bone age

Cardiovascular:

- Hypertension
 - Monitor by serial blood pressures with appropriate cuff
- Cardiomyopathy
 - Increased metabolic activity in excess fat tissue, increased blood volume
 - Left ventricular dysfunction with/without hypertension
 - Monitor by stress test any BMI above 40
- Pulmonary embolism
 - Secondary to obesity, hypoventilation, sleep apnea
- Dyslipidemia
 - Monitor by fasting lipid profile
 - Elevated triglyceride, low HDL
 - Correlates with early cardiovascular disease

Psychosocial:

- Low self-esteem, depression, reduced school performance, bullying

Respiratory:

- Sleep apnea/ Pickwickian syndrome
 - Monitor with overnight sleep study

Hepatic:

- Fatty liver: called NASH for non-alcoholic steato-hepatitis
- Monitor AST, ALT, GGT, hepatic sonogram

Orthopedic:

- Slipped capital femoral epiphysis
- Blount disease: overgrowth of medial proximal tibial metaphysis

Renal:

- Proteinuria: focal segmental glomerulosclerosis; monitor urine protein

Parent and Family Information Sheet

Maryland Chapter, American Academy of Pediatrics

Nutrition Awareness and Physical Activity in the Toddler: 18 Months to 3 Years

Background: Since 1970, the percentage of children who are overweight has increased from 5% to 15%, with an additional 15% now defined as “at risk” to become overweight in the next 10 years.

What can you do?

Nutrition:

- 1) Be a role model. Even when children are this young, your choices of food, habits of snacking, and limits of physical activity have a huge impact.
- 2) Choose healthy foods and serve them as a family meal together. Prepare the meal and serve on plates in the kitchen rather than as self-serve. At this age, a serving size is the size of your fist. Children do best with 3 balanced meals and one nutritious snack a day.
- 3) Reduce use of sweetened sodas and fruit juices. Stop using bottles by 18 months, Use water and reduced fat dairy products.
- 4) Don't use food as a reward for good behavior.
- 5) When your child is over-eating, it doesn't help to yell at them or threaten punishment. Instead, praise them when they do well.
- 6) When eating at a restaurant avoid ordering super-sized meals. Don't require your child to “clean the plate”. Avoid desserts when eating out. After dinner go for a walk, then home for fresh fruit.

Physical Activity:

- 1) Of all the factors you can influence, increasing your child's physical activity is the most important. Every hour of moderate exercise a day reduces your child's risk of becoming overweight by 10%.
- 2) We now recommend that time spent watching television be reduced to less than two hours a day in children over two years and eliminated in children under two years of age.
- 3) Encourage your child to walk and run as much as possible. Limit use of strollers after 18 months. Climb stairs together, go for family walks, seeking vigorous activity more than one hour a day.
- 4) Ask daycare and baby sitters to include regular exercise daily.

Parent and Family Information Sheet

Maryland Chapter, American Academy of Pediatrics

Nutrition Awareness and Physical Activity in the Pre-School Child: 3 – 5

Background: Since 1970, the percentage of children who are overweight has increased from 5% to 15% with an additional 15% now defined as “at risk” to become overweight in the next ten years.

What can you do?

Nutrition:

- 1) Be a role model with your choices of meals and snacks.
- 2) Choose healthy foods, including several servings of fruit and vegetables. Serve new foods on the plate next to, but not mixed with accepted foods. Expect resistance to new foods, often requiring 6 to 10 attempts to get acceptance.
- 3) Seek 3 balanced meals and 1 snack a day. Use meals as a family time with no television and no rush to finish or clean plate.
- 4) Don't argue over meal content, you control choices and serve it. Let the child “self-regulate” volume of intake.
- 5) When eating out, avoid super-sized meals and desserts.
- 6) Avoid sugar containing sodas and juices when possible. Use water and reduced fat dairy products. Be aware that most low fat foods are high in sugar.

Physical Activity:

- 1) Seek to have at least 60 minutes of moderate to vigorous exercise every day, even when the weather is less than ideal. Be sure that any day care and childcare provider shares this goal. Play outdoors when safe.
- 2) Limit television and videogame time to less than 2 hours a day. This reduces “down time”, exposure to food advertising, and limits munching snacks while watching.
- 3) Limit use of strollers to encourage walking. Climb stairs together. Go for family walks and weekend trips to parks or zoo. Walk the dog together. Meet friends for a walk instead of talking on the phone.
- 4) Every hour that your child actively exercises daily reduces the risk of becoming overweight by 10%.

Parent and Family Information Sheet

Maryland Chapter, American Academy of Pediatrics

Nutrition Awareness and Physical Activity in the Elementary School Child: Age 5 to 12

Background Since 1970, the percentage of children who are overweight has increased from 5% to 15% with an additional 15% now defined as “at risk” to become overweight in the next ten years.

What can you do?

- 1) **BE A ROLE MODEL**
 - Help your child understand healthy food choices. Go to the market together and let the child help you choose the healthy foods.
 - Promote > 5 servings of fruit and vegetables a day, > 3 servings of low-fat dairy, and > 6 servings of whole grain and other fiber.
 - Eat responsibly, limiting snacks, candy, sugared soda and fruit drinks. Set the example for the family with your meals, portion sizes, snacks, and physical activity.
 - Encourage family meals and family physical activities in the evening and on weekends.
- 2) **MAKE MEALS A FAMILY TIME**
 - Have a relaxed family meal with no television, no rush, and no demand to clean the plate. Offer serving sizes of about 1/3 of a cup.
 - Introduce new, healthier foods in modest amounts with meals that the child likes. Expect to offer several times before acceptance.
 - Don't bribe or punish the child over food choices.
- 3) **REDUCE USE OF FAST FOOD MEALS**
 - Avoid the high fat, high sugar, super-sized meals.
- 4) **LIMIT USE OF TELEVISION / VIDEO / GAMEBOYS**
 - Reduce the time sitting in front of video screens to less than 2 hours a day. Don't put a television in the child's bedroom.
- 5) **MAKE DAILY PHYSICAL ACTIVITY FUN AND SAFE**
 - Encourage moderate to vigorous activity for at least one hour a day
 - Encourage safe, daily after-school exercise, go to the park
 - Have active birthday parties, using dance, skating, bowling, etc
- 6) **BE AN ADVOCATE FOR YOUR CHILD'S HEALTH**
 - Work with schools, PTA organizations, recreation councils, and local government to establish safe recreational opportunities

Parent and Family Information Sheet

Maryland Chapter, American Academy of Pediatrics

Nutrition Awareness and Physical Activity in the Secondary School Child: Age 12 to 18

Background: Since 1970, the percentage of teenagers who are overweight has increased from 7% to more than 15%, with an additional 15% now defined as “at risk” to become overweight in the next ten years.

What can you do?

Nutrition:

- 1) Be a role model with your choices of meals and snacks.
- 2) Encourage your child to go food shopping with you and help make the decisions of what to buy and how much. Purchase several servings of fruits and vegetables while limiting sugar-containing sodas, desserts, and junk food. Try new foods such as fish, by mutual decision.
- 3) Encourage a daily, healthy breakfast as part of three balanced meals and one healthy snack each day.
- 4) Avoid having unhealthy snack foods in the house. Don't hide snacks for your secret use.
- 5) Encourage a family meal time, to discuss the day's events in a quiet, supportive fashion.
- 6) Discourage the habit of after-school fast food snacks.

Physical Activity:

- 1) Encourage at least one hour of moderate to vigorous physical activity daily, including gym class, after school, and weekends.
- 2) Try to limit “screen time” to 2 hours a day, acknowledging need complete homework and reference the internet. Limit video games and use of a television in the bedroom.
- 3) Establish the habit of regular family exercise, walking the dog, going for an evening walk after dinner, and weekend trips.
- 4) Encourage active parties with use of outdoor facilities when possible, incorporate swimming, dance, bowling, and sports.
- 5) Be a community activist to encourage increased physical activity at schools, and funding for hiking and biking trails to establish safe opportunities for all children to exercise.

**Maryland Chapter, American Academy of Pediatrics
Nutritional Health and Activity Program**

Program Name: Weigh Smart Program
Sponsoring Organization: Mt. Washington Hospital and Foundation
Contact Name: Debbie Fike
Contact Phone Number: 410-578-5343
E-mail/Website: www.mwph.org
Age Group Served: Ages 8-17
Services Offered: Nutrition, Exercise, Psychology and Behavior
Comment on value of your program: A hands on multi-disciplinary approach to assist families in achieving a healthy lifestyle change for fitness and good nutrition habits for a lifetime.

Program Name: Fit –N-Fun
Sponsoring Organization: Towson Sports Medicine/Orthopaedic Associates
Contact Name: Stephanie Adams
Contact Phone Number: 410-337-8847, ext. 5076
E-mail/Website: www.towsonsportsmedicine.com
Age Group Served: Elementary and Middle School
Services Offered: Nutrition, Exercise, Psychology and Behavior
Comment on value of your program:

Program Name: A Better Weigh
Sponsoring Organization: Johns Hopkins Bayview Medical Center
Contact Name: Lawrence J. Cheskin, MD
Contact Phone Number: 410-583-2860
E-mail/Website: www.hopkinsbayview.org/weight
Age Group Served: Elementary, Middle and High School
Services Offered: Nutrition, Exercise, Psychology and Behavior
Comment on value of your program: The goal of this program is to help these children achieve a healthier lifestyle and weight through behavior modification, changes in diet, and physical activity.

Program Name: Johns Hopkins Youth Fitness Circle
Sponsoring Organization: Harriet Lane Clinic
Contact Name: Carrie Vick, LCSWC and Maria Trent, MD
Contact Phone Number: 410-955-2679
E-mail/Website:
Age Group Served: Middle and High School
Services Offered: Nutrition and Exercise

Comment on value of your program: Cyclic program designed to get patients started with lifestyle change. This program is meant to compliment delivery of services by primary provider. We only accept internal referrals from clinic patients.

Program Name: NIH Obesity Research Program

Sponsoring Organization: NICMD/NIH

Contact Name: M. Mirch (ages 6-12) 301-594-3198;
K. Theim (ages 12-18) 301-496-4168

E-mail/Website: <http://eclipse.nichd.nih.gov/nichd/deb/ugo/ugo.htm>

Age Group Served: Elementary, Middle and High School

Services Offered: Nutrition, Exercise, Psychology and Behavior

Comment on value of your program: Research program of medications, which requires signing consent forms. All costs are free to participants.

Program Name: Washington Center for Eating Disorders and Adolescent Obesity

Sponsoring Organization:

Contact Name: Tania Heller, MD

Contact Phone Number: 301-530-0676

E-mail/Website: www.washingtoncenteronline.com

Age Group Served: Elementary, Middle and High School

Services Offered: Nutrition, Exercise, Psychology, Behavior and Medical

Comment on value of your program: Team approach to treatment of patients with eating disorders and obesity.

Program Name: Wellness Center

Sponsoring Organization: Western Maryland Health System

Contact Name: Janice Lindner

Contact Phone Number: 301-759-9355

E-mail/Website: jmlindner@wmhs.com

Age Group Served: Elementary, Middle and High School

Services Offered: Nutrition, Exercise, Psychology and Behavior

Comment on value of your program: The value of our program includes:

1. Instilling good nutrition in children and their parents
2. Encourages the whole family to eat healthier
3. Provides quick healthy meal tips to parents
4. Encourages family activity and provides ideas for ways to be active

Program Name: Comprehensive Youth Wellness

Sponsoring Organization: Cumberland YMCA

Contact Name: Jeff Collen

Contact Phone Number: 301-777-9622

E-mail/Website: jcollen@cumberlandymca.org; www.cumberlandymca.org

Age Group Served: Preschool, Elementary, Middle and High School

Services Offered: Nutrition, Exercise, Psychology, and Behavior (parenting skills)

Comment on value of your program: