# Physical Literacy and Obesity:
*Moving well to move more*

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Sept. 26, 2020

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## DISCLOSURE

- **I have no commercial interests to disclose**

- For the PLAY-ME Project:
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# OBJECTIVES

1. Review the current physical activity recommendations for youth
2. Define physical literacy and describe its connection to physical activity and obesity
3. Explore how physical literacy assessment, counseling, and referral can be incorporated into the clinical care of youth with obesity

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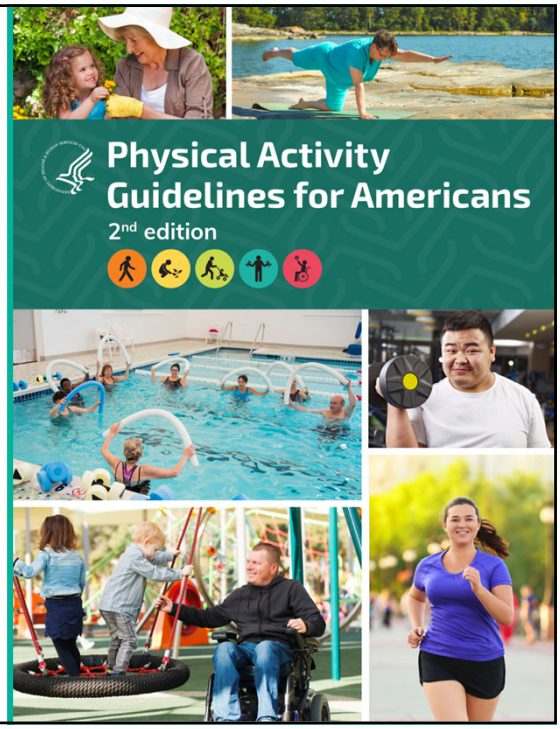
# Defining terms: physical activity

- Physical activity is any action that gets a body moving and expending energy above its resting state
- Includes different types of activities:
  - Aerobic
  - Muscle-strengthening
  - Bone-strengthening
  - Flexibility
  - Balance
- Multiple health benefits to all ages

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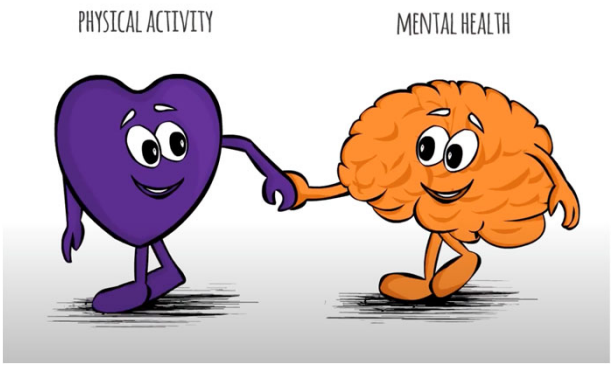


https://www.youtube.com/watch?v=OI6t6S2Wb6Q

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# Physical activity recommendations for youth

- *Physical Activity Guidelines for Americans, 2nd edition* provides guidance for youth ages 3-17


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Physical Activity Guidelines for Americans 2nd edition

**Chapter 3.** Active Children and Adolescents

## Key Guidelines for Preschool-Aged Children

- Children ages 3-5 should be physically active throughout the day to enhance growth and development
  - 3 hrs per a day is a "reasonable target"
- Caregivers should encourage a variety of activity types

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Physical Activity Guidelines for Americans 2nd edition

**Chapter 3.** Active Children and Adolescents

## Key Guidelines for School-Aged Children and Adolescents

**Youth ages 6-17 years should do 1hr+ of moderate-to-vigorous (MV) physical activity (PA) daily**

=

- **Aerobic**
  - Most of the 1 hr+/day should be MV **aerobic** PA and should include vigorous PA on at least 3 days/week
- **Muscle-strengthening**
  - As part of 1 hr+/day PA, youth should include muscle-strengthening PA on at least 3 days/week
- **Bone-strengthening**
  - As part of 1 hr+/day PA, youth should include bone-strengthening physical activity on at least 3 days/week

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**TABLE 3** Age-Appropriate Recommendations for Increased Physical Activity

| | Infant (0–1 y) | Toddler (1–3 y) |
|---|---|---|
| Frequency | Daily | Daily |
| Intensity | Any | Any |
| Time | Several times per day | At least 180 min/d |
| Type | Interactive floor-based play and at least 30 min of tummy time spread throughout the day while awake | Activities that develop gross motor skills; examples include walking in the neighborhood, unorganized free play outdoors, walking through a park or zoo, or playing on a playground for toddlers |

Data are from references 9, 15, 73, 75, 83, and 84.

Lobelo F, Muth ND, Hanson S, et al. *Pediatrics*. 2020;145(3).

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# Maine youth & PA guidelines

- How are young Mainers doing?

MIYHS
Maine Integrated Youth Health Survey
Maine Department of Health and Human Services
Maine Department of Education

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# Maine youth & PA guidelines

| MIYHS Question | Grade level | 2019 | 2017 | Significance Tests |
|---|---|---|---|---|
| How many days each week do you exercise, dance or play sports for at least an hour? *(Percentage of students who answered at least 7 days)* | 5th/6th grade | 23% | 28% | ↓ |
| 60+ minutes of total physical activity daily *(Percentage of students who were physically active for a total of 60 minutes/day on all of the past 7 days)* | Middle school | 26% | 26% | |
| Same as for MS | High school | 21% | 20% | |

Adapted from: http://data.mainepublichealth.gov/miyhs/home

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"…we remain stuck in a mindset grounded in guidelines that focus almost solely on the achievement of at least 60 min MVPA each day."

Faigenbaum AD, Rebullido TR, MacDonald JP. *Curr Sports Med Rep*. 2018;17(2):45-47.

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**"The time has come to expand our conceptual approach…"**

Faigenbaum AD, Rebullido TR, MacDonald JP. *Curr Sports Med Rep*. 2018;17(2):45-47.


**Figure:** The PIT consists of three inter-related conditions that influence physical inactivity and related health risks.

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**Figure:** The PIT consists of three inter-related conditions that influence physical inactivity and related health risks.

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**"Simply asking physically inactive boys and girls to "walk to school" or "play outside" is not enough."**

Faigenbaum AD, Rebullido TR, MacDonald JP. *Curr Sports Med Rep*. 2018;17(2):45-47.


**Figure:** The PIT consists of three inter-related conditions that influence physical inactivity and related health risks.

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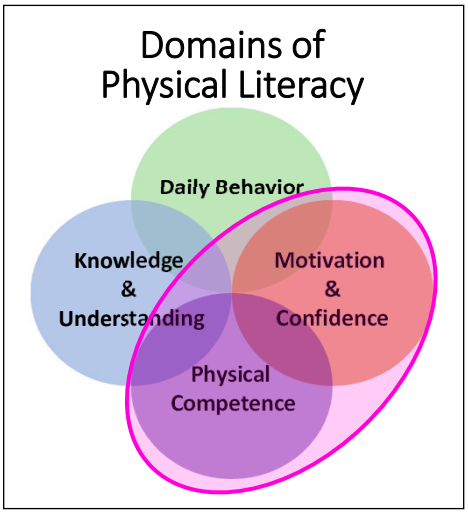
# So what is physical literacy?

- The **motivation**, **confidence**, **physical competence**, **knowledge** and **understanding** that individuals develop in order to **maintain physical activity** at an appropriate level throughout life.

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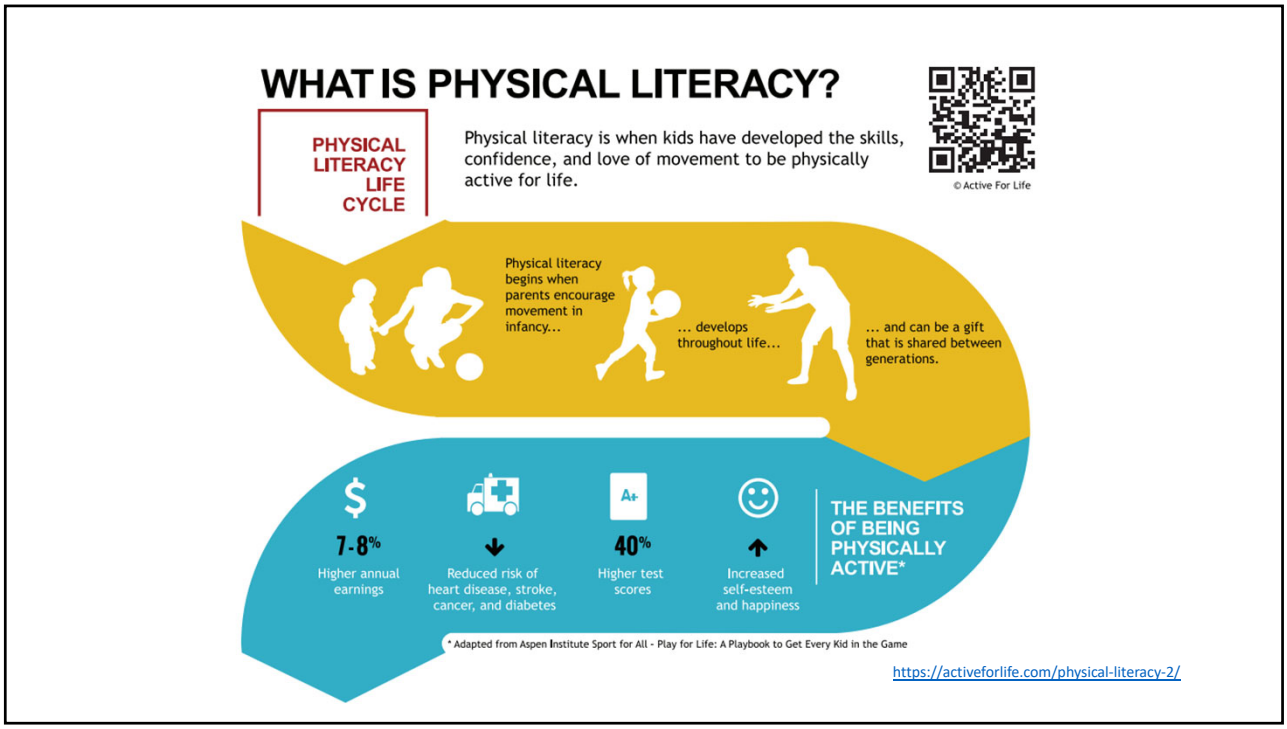


https://activeforlife.com/physical-literacy-2/

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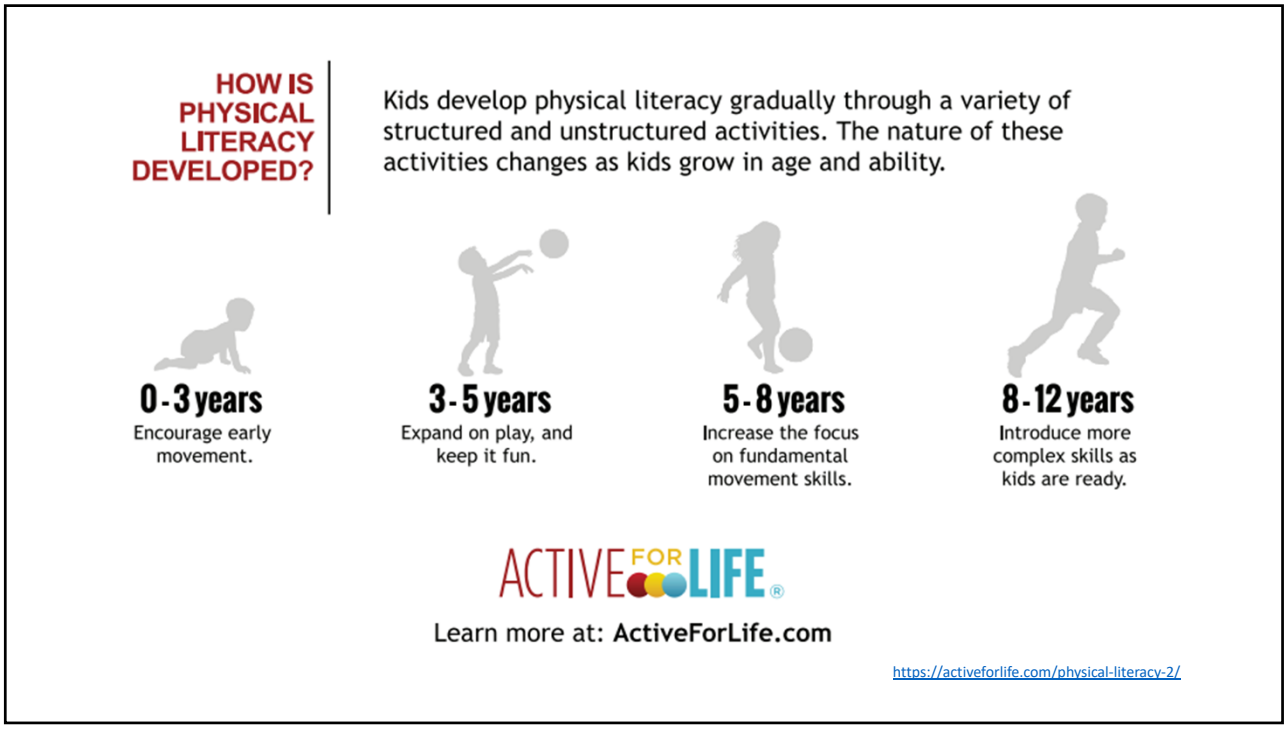


https://activeforlife.com/physical-literacy-2/

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**Physical Competence**

# Fundamental movement skills (FMS)

- Locomotor skills
  - crawl, walk, run, hop, skip, jump, swim, push, pull
- Object-control skills
  - throw, catch, kick
- Stability skills
  - static balance


The Aspen Institute, Project Play. Physical literacy in the United States: A model, strategic plan, and call to action. 2015.

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# Groups at risk of low physical literacy

- Low income
- Racial/ethnic minorities
- Girls
- Children and youth with special health care needs (CYSHCN)
- Children with obesity


**Figure:** The PIT consists of three inter-related conditions that influence physical inactivity and related health risks.

The Aspen Institute, Project Play. Physical literacy in the United States: A model, strategic plan, and call to action. 2015

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# How to evaluate kids

**Physical Literacy assessment**

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# How to evaluate kids

**Physical Activity assessment** **vs.** **Physical Literacy assessment**

- Questionnaires
- Activity logs
- Pedometers
- Research-grade and consumer-oriented accelerometers

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# Physical literacy assessment

CHEO RESEARCH INSTITUTE INSTITUT DE RECHERCHE

Healthy Active Living and Obesity Research Group
Recherche sur les saines habitudes de vie et l'obésité


Canadian Assessment of Physical Literacy

Domains of Physical Literacy

Daily Behavior

Knowledge & Understanding

Motivation & Confidence

Physical Competence

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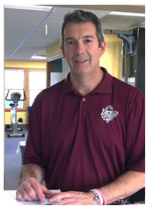
# Physical Literacy for All Youth in Maine (PLAY-ME) Workgroup

Left to Right: Victoria Rogers MD, **Sarah Hoffman DO**, Carrie Gordon MD, **Michele Labotz MD**, Emily Keller MD, Marin Johnson MS, Christina Holt MD



Matt Douglas PT

Chris Pribish ATC

MaineHealth LET'S GO! 5-2-1-0

INTERMED

Maine Medical PARTNERS
*A department of Maine Medical Center*

PrevME Project

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# Physical Literacy for All Youth in Maine: PLAY-ME

HEALTHCARE SCREENING FOR PHYSICAL LITERACY

**Project Goals:**

- IDENTIFY children who lack physical literacy
- REFER to help them improve physical literacy
- FOLLOW UP to monitor improvement
- SPREAD awareness of the concept of physical literacy

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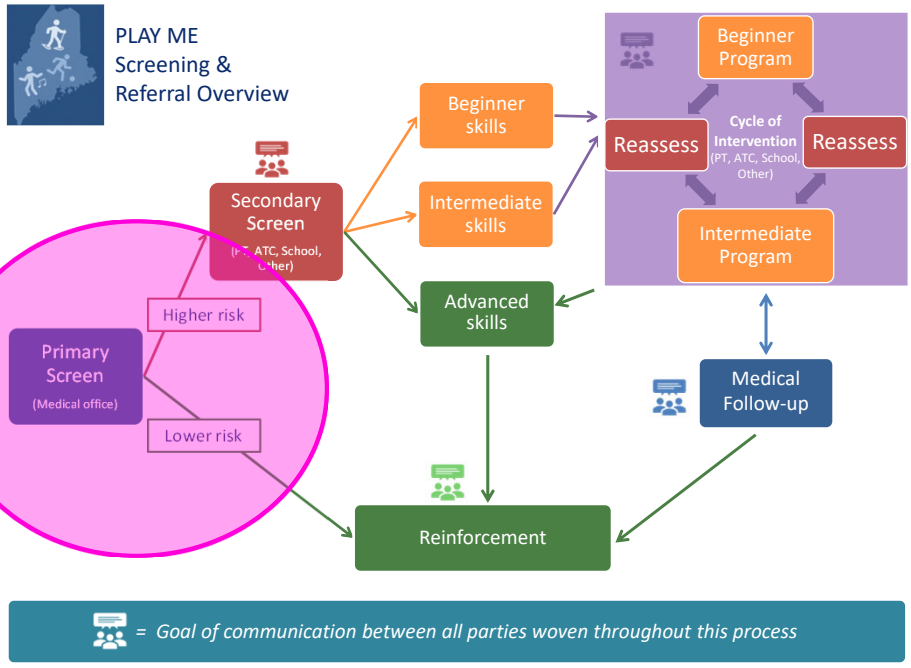


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# 2-Step Primary Screen in Office

Data on accuracy of this screening process for adequate physical literacy:
- Positive predictive value: 89%
- Negative predictive value: 67%
- Sensitivity: 72%
- Specificity: 86%

Can be done via telemedicine or in office

## FAST and EASY Tasks with Limited Space

If you have limited space, use these tasks in less than 3 minutes for a group of children.

| Step | Task | Equipment/Space | Accuracy of a PASS | Accuracy of NOT PASSING |
|---|---|---|---|---|
| One | Answer Parent Support Questions | • Copy of question<br>• Pencil or pen | 89% of children who pass will be screened correctly | 67% of the children who do not pass will be screened correctly |
| Two | Wall Sit | • Empty wall to rest back comfortably (2-3 feet in width)<br>• Watch that measures seconds | | |

https://www.capl-eclp.ca/physical-literacy-screening-tasks/

https://www.haloresearch.ca/2015/10/12/putting-physical-literacy-within-reach-project-develops-two-physical-literacy-screening-tasks-for-use-by-recreation-education-allied-health-coaching-and-healthcare-professionals/

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# Step 1: Questions

Higher risk | Lower risk

**Questions:**

**During a normal week, how often do your parents take you to play games or sports?**
Never Not Often Sometimes Often Very Often

**During a normal week, how often do your parents play active games or sport with you?**
Never Not Often Sometimes Often Very Often

**Recording Answers**

| Child | Answer for Take You to Play | Child | Answer for Play with You |
|---|---|---|---|
| e.g. 001 | Never Not Some Often Very | | Never Not Some Often Very |
| | Never Not Some Often Very | | Never Not Some Often Very |
| | Never Not Some Often Very | | Never Not Some Often Very |

https://www.capl-eclp.ca/physical-literacy-screening-tasks/

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# Step 2: Wall Sit

- Time until child gives up, or cannot maintain the proper position

https://www.capl-eclp.ca/physical-literacy-screening-tasks/

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# Step 2: Wall Sit Results

**Recording Task Results**

Record the total number of seconds that the child held in the correct position

| Child ID | Wall Sit Time (seconds) | Child ID | Wall Sit Time (seconds) |
|---|---|---|---|
| e.g. 001 | 52 | | |
| | | | |

**What do the results mean?**

If a participant scores **less than 20 seconds** on the Wall Sit, a detailed assessment of the child's physical literacy (e.g., Canadian Assessment for Physical Literacy) is recommended. If the child scores **20 seconds or longer**, a more in-depth assessment of physical literacy is probably not required.

**Goal = >20 seconds**

https://www.capl-eclp.ca/physical-literacy-screening-tasks/

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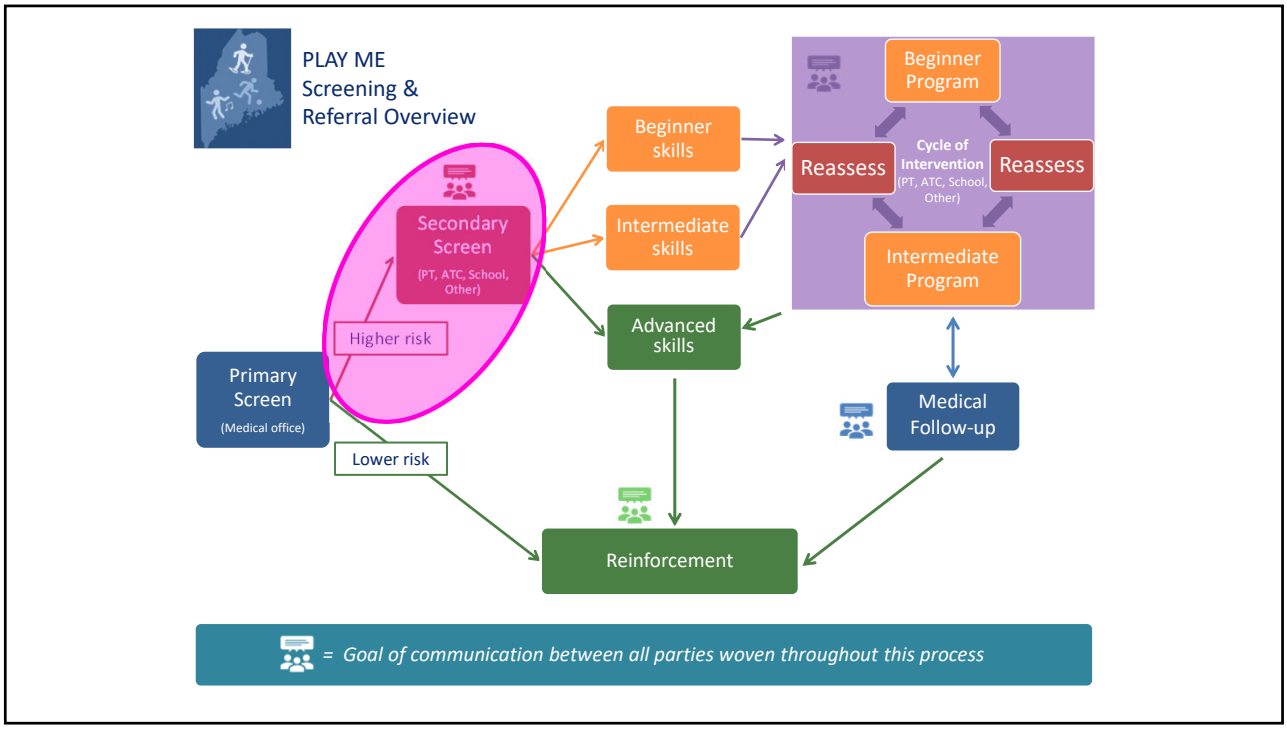


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# Refer higher risk for Secondary Screen with:

- School-based
  - Physical Educators
    - Adapted PE
  - PT/OT
- **Physical Therapists**
- Athletic Trainers
- Community resources *(ie – YMCA, personal trainers, recreation departments, gyms)*
- Medically Oriented Fitness Facilities

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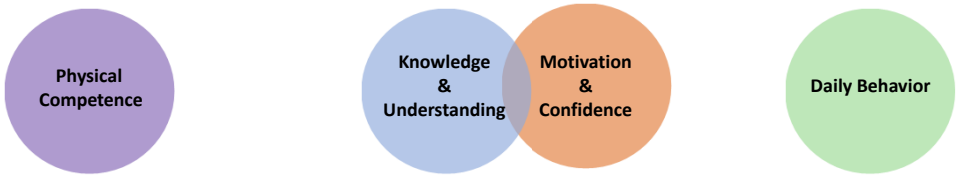
# Secondary Screen at referral partner: 3 parts

1. **Assessment of functional motor skills**
   - 6 minute walk
   - 10 x 5 m shuttle run
   - Broad Jump
   - Medicine ball chest throw
   - Throw, kick, catch

2. **Longer questionnaire**
   - Knowledge
   - Motivation
   - Confidence

3. **Daily activity log for 7 days**
   - Pedometer tracking (or smart device)
   - Daily log of activity

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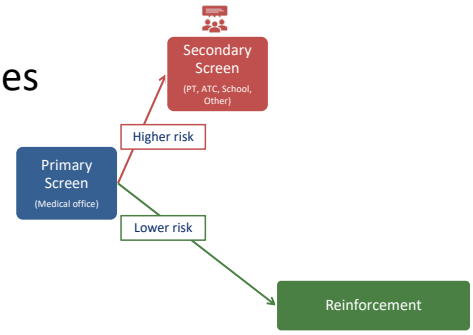
# PLAY-ME Project Status

- Testing the **2-step primary screen** with pilot group of physician practices
  - Cycle 1: weight/wellness/obesity clinics→**completed**
  - Cycle 2: primary care physician offices→**in development**

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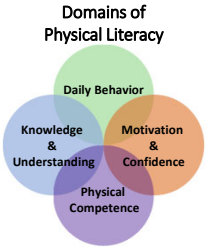
Physical Literacy and Obesity:
*Moving well to move more*

# OBJECTIVES

1. Review the current physical activity recommendations for youth
2. Define physical literacy and describe its connection to physical activity and obesity
3. Explore how physical literacy assessment, counseling, and referral can be incorporated into the clinical care of youth with obesity

hour or more of physical activity

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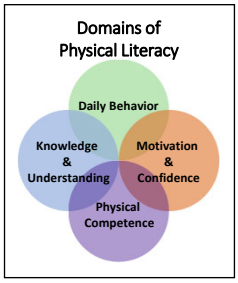


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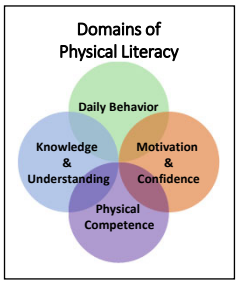


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# Thank you for listening!

## Interested in more info on physical literacy, or the PLAY-ME Project? Reach out to:


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