

UPDATES IN DEVELOPMENTAL MILESTONES

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- No disclosures to report
- Although we discuss various developmental screening tools, these are purely to provide examples of existing materials. We do not endorse any one specific form of tracking developmental milestones and/or any one specific developmental screening tool.



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•Training:

- Bachelor of Science in Nursing and Doctor of Nursing Practice from the University of Kentucky, Certified Family Nurse Practitioner
- Bedside nursing experience in the Cardiovascular ICU, Adult and Adolescent Behavioral Health
- Advanced Practice Provider (APP) experience providing adult and pediatric primary care in a medically underserved community

•UK HealthCare:

- APP in Developmental Pediatrics performing developmental evaluations with a multidisciplinary team

About Me: Marisa Toomey, MD, FAAP

•Training:

- Residency in Pediatrics
- Fellowship in Developmental-Behavioral Pediatrics (DBP)
- Fellowship in Leadership in Neurodevelopmental Disabilities (LEND)

•UK HealthCare:

- Interim Division Chief of Developmental Pediatrics
- Rotation director of the ACGME-required rotation in DBP
- Early childhood Autism assessments as part of a project with primary care providers to increase access and study a level 2 Autism screening tool



Goals for Today's Session

- Provide information about the most up-to-date childhood developmental milestones
- Review how to assess developmental milestones and identify developmental delays
- Highlight features of the UK HealthCare Developmental Pediatrics Clinic



Goal 1:
**Provide information about the most
up-to-date childhood developmental
milestones**



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What is “Up-to-Date”?

Evidence-Informed Milestones for Developmental Surveillance Tools **FREE**

Jennifer M. Zubler, MD ; Lisa D. Wiggins, PhD; Michelle M. Macias, MD; Toni M. Whitaker, MD; Judith S. Shaw, EdD, MPH, RN; Jane K. Squires, PhD; Julie A. Pajek, PhD; Rebecca B. Wolf, MA; Karnesha S. Slaughter, MPH; Amber S. Broughton, MPH; Krysta L. Gerndt, MPH; Bethany J. Mlodoch; Paul H. Lipkin, MD

CONFLICT OF INTEREST DISCLOSURES: Dr Squires is a developer of the *Ages & Stages Questionnaires* and receives royalties from Brookes Publishing, the company that publishes this tool; the other authors have indicated they have no conflicts of interest relevant to this article to disclose.

* Contributed equally as co-senior authors.

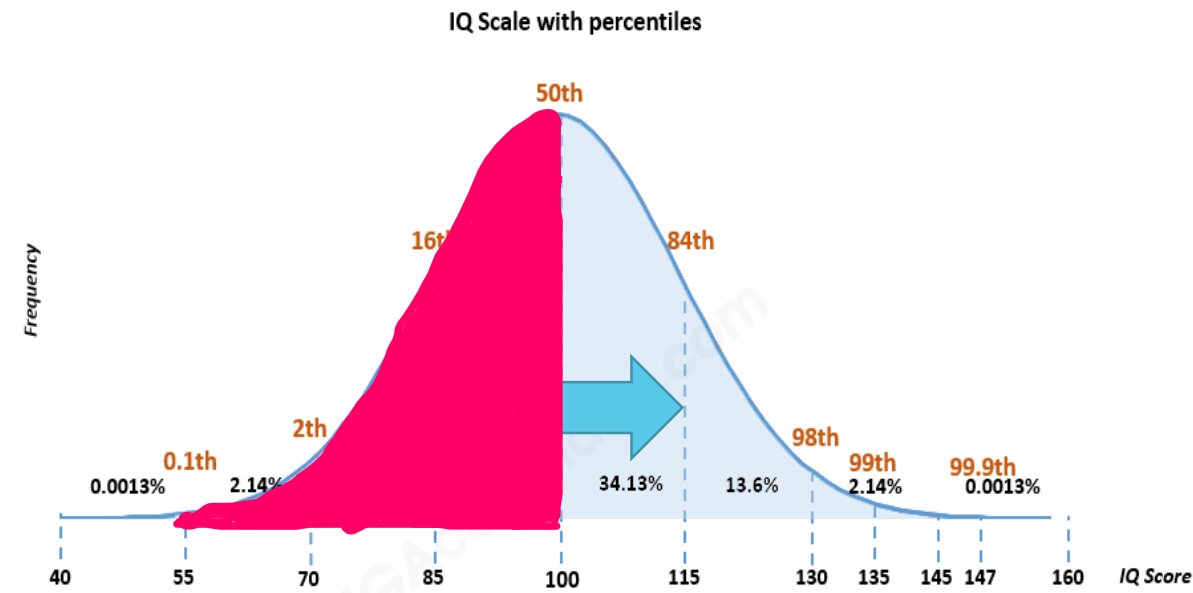
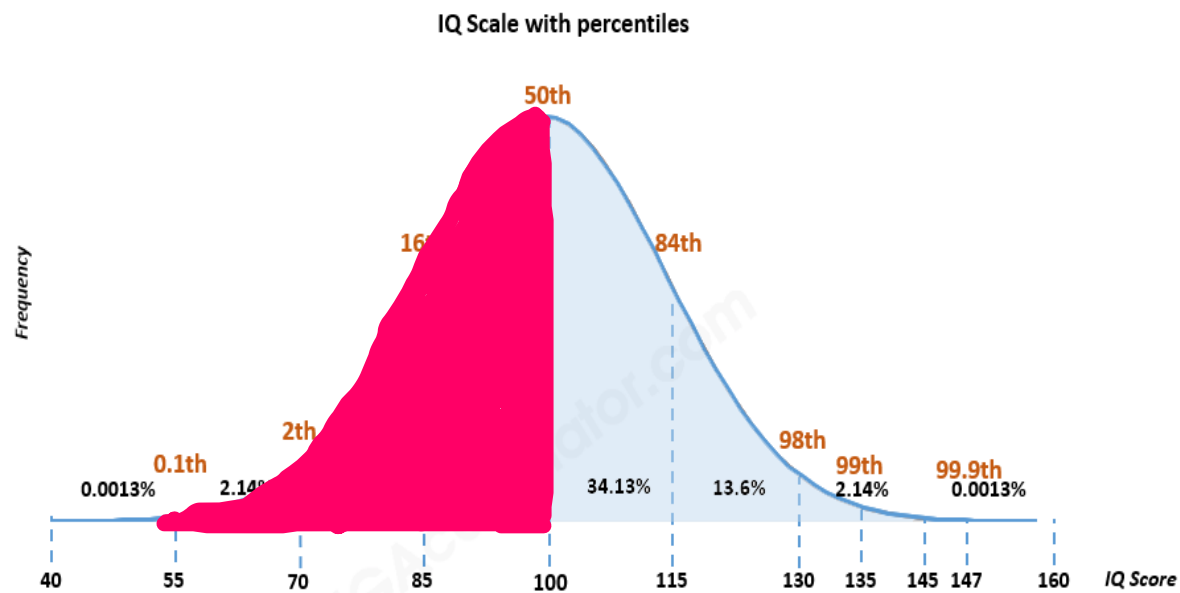
Address correspondence to Jennifer M. Zubler, MD, National Center on Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, 4770 Buford Hwy NE, MS S106-4, Atlanta, GA 30341. E-mail: wyv4@cdc.gov

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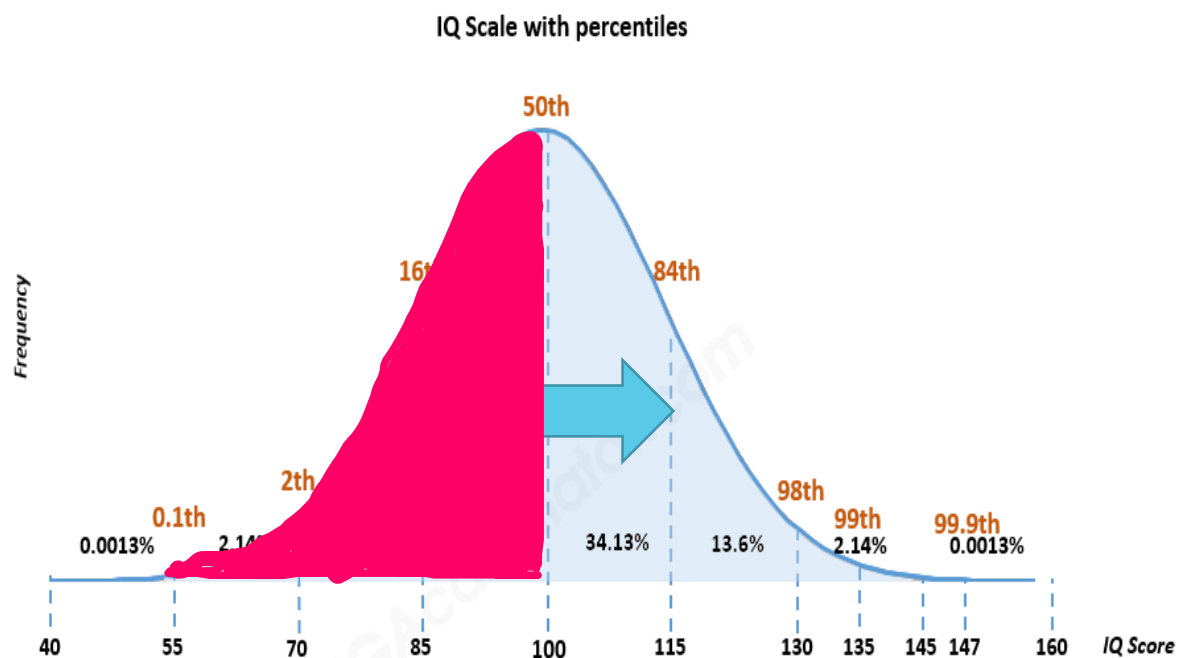
Article history

In the Past: Refer the Lowest 50th Percentile

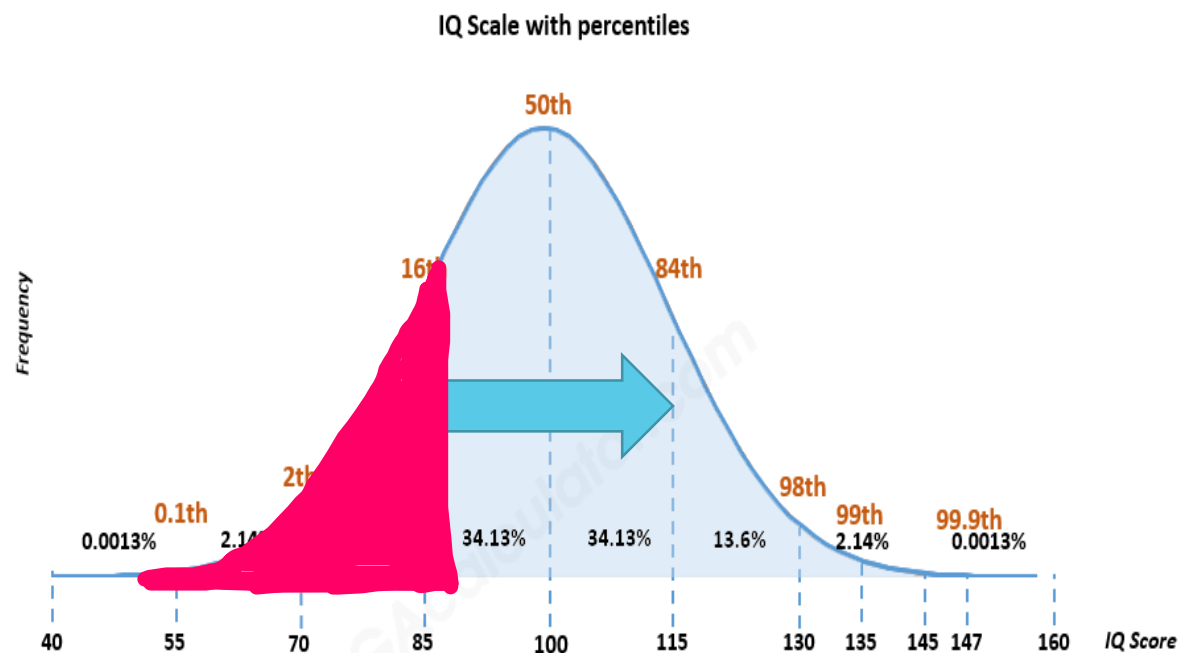


Lots of “wait-and-see” b/c half of children not expected to achieve milestone at that age

In the Present: Refer the Lowest 25th Percentile



Lowest 50th percentile being referred



Lowest 25th percentile being referred

What are “Childhood Developmental Milestones”?

- Domain 1: Motor
 - Gross motor (big movements – whole body)
 - Fine motor (small, coordinated movements – hands and fingers)
- Domain 2: Self-Help / Adaptive
- Domain 3: Cognitive
- Domain 4: Speech and Language
 - Receptive language (understanding of language)
 - Expressive language (ways of communicating)
- Domain 5: Social-Emotional



Gross Motor Milestones

Milestone	Description	Age of Attainment
Holds head up	Lifts and holds head steady when on tummy	2 months
Pushes up on elbows; Head control	Pushes up on elbows/forearms when on tummy; Holds head steady without support when held	4 months
Rolls	Rolls over from tummy to back	6 months
Sits	Sits well without support	9 months
Pulls to stand; Cruises	Pulls up to stand using furniture; Walks, holding onto furniture (cruising)	12 months

Developing Head Control



CDC. "Milestones by 2 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/2-months.html>.



CDC. "Milestones by 4 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/4-months.html>.

Tummy Time Skills



CDC. “Milestones by 4 Months.” *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/4-months.html>.



CDC. “Milestones by 6 Months.” *Learn the Signs. Act Early.*, 11 Sep. 2025, <https://www.cdc.gov/act-early/milestones/6-months.html>.

Developing Sitting

6 Months - Leans on hands to support herself when sitting



Learn the Signs.
Act Early.
U.S. Department of Health
and Human Services
Centers for Disease
Control and Prevention

[cdc.gov/Milestones](https://www.cdc.gov/Milestones)

CDC. "Milestones by 6 Months." *Learn the Signs. Act Early.*, 11 Sep. 2025, <https://www.cdc.gov/act-early/milestones/6-months.html>.

9 Months - Sits without support



Learn the Signs.
Act Early.
U.S. Department of Health
and Human Services
Centers for Disease
Control and Prevention

[cdc.gov/Milestones](https://www.cdc.gov/Milestones)

CDC. "Milestones by 9 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/9-months.html>.

Gross Motor Milestones

Milestone	Description	Age of Attainment
Stands	Stands briefly, takes a few steps independently	15 months
Walks independently	Walks without holding on to anyone or anything	18 months
Runs; Uses stairs; Kicks	Runs without falling; Walks (not climbs) up a few stairs with or without help; Kicks a ball	24 months
Jumps	Jumps off the ground with both feet	30 months
Hops; Catches	Hops on one foot; Catches a large ball most of the time	48 months
Skips	Skips using alternating feet	60 months

Transition from Cruising to Walking

“Cruising”



CDC. “Milestones by 1 Year.” *Learn the Signs. Act Early.*, 4 Sep. 2025,
<https://www.cdc.gov/act-early/milestones/1-year.html>.



CDC. “Milestones by 18 Months.” *Learn the Signs. Act Early.*, 2 Sep. 2025,
<https://www.cdc.gov/act-early/milestones/18-months.html>.

Big Movements in Toddlerhood



CDC. "Milestones by 24 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/24-months.html>



CDC. "Milestones by 30 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/30-months.html>

Fine Motor Milestones

Milestone	Description	Age of Attainment
Opens hands briefly	Opens hands from a fist for a few seconds	2 months
Holds items	Holds a toy when placed in their hand	4 months
Transfers; Rakes	Moves things from one hand to the other; Uses fingers to “rake” food towards themselves	9 months
Pincer grasp	Picks things up between thumb and index finger	12 months
Scribbles	Scribbles when given a writing utensil	18 months

Grasp Progression

Picks things up between thumb and pointer finger, like small bits of food



CDC. "Milestones by 9 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/9-months.html>



CDC. "Milestones by 12 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/12-months.html>

Fine Motor Milestones

Milestone	Description	Age of Attainment
Turns book pages; Uses hands to twist	Turns book pages, one at a time, when read to; Twists items, like door knobs	30 months
Strings items; Draws a circle	Strings items together, like large beads or macaroni noodles; Draws a circle when shown how to do so	36 months
Maturing grasp	Holds crayon or pencil between fingers and thumb, not in a fist (tripod grasp)	48 months
Writes some letters	Writes some letters in their name	60 months

Writing Progression



CDC. "Milestones by 18 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/18-months.html>



CDC. "Milestones by 48 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/48-months.html>

Self-Care/Adaptive Milestones

Milestone	Description	Age of Attainment
Drinks from open cup with help	Drinks from a cup that does not have a lid (with help from a grown-up)	12 months
Finger-feeding; Tries to use a spoon	Feeds themselves food with their fingers; Tries to use a spoon	18 months
Uses a spoon	Uses a spoon well	24 months
Undresses	Takes off clothes by themselves, like loose pants or an open jacket	30 months

Self-Care/Adaptive Milestones

Milestone	Description	Age of Attainment
Gets dressed; Uses a fork	Puts on some clothing (loose pants, jacket) independently; Uses a fork well	36 months
Unbuttons	Unbuttons some buttons	48 months
Buttons up; Simple chores	Able to fasten buttons Does simple chores at home (e.g., helping clear the table)	60 months

The Evolution of Feeding Oneself

18 Months - Feeds himself
with his fingers



CDC. "Milestones by 18 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/18-months.html>

2 Years - Eats with a spoon



CDC. "Milestones by 24 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/24-months.html>

3 Years - Uses a fork



CDC. "Milestones by 36 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/36-months.html>

Cognitive Milestones

Milestone	Description	Age of Attainment
Looks for fallen objects	Looks for objects that have fallen off a table, high chair, etc.	9 months
Object permanence	Looks for an object that is hidden under a blanket	12 months
Uses items correctly	Mimics the way adults use items (e.g., talking on phone)	15 months
Copies chores; Plays with toys in a simple way	E.g., sweeps with a broom; E.g., pushes a toy car	18 months
Cause-and-effect; Plays with two toys	Pushes buttons, knobs, switches on toys; Plays with two different toys at the same time (e.g., feeding toy food to a stuffed animal)	24 months

Play is Learning!



CDC. "Milestones by 18 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/18-months.html>



CDC. "Milestones by 24 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025, <https://www.cdc.gov/act-early/milestones/24-months.html>

Cognitive Milestones

Milestone	Description	Age of Attainment
Symbolic play; Simple problem-solving	Uses one item as another (e.g., pretending to feed a block to a doll as though the block was food); Basic problem-solving (e.g., standing on a small stool to reach something)	30 months
Understands “hot”	Avoids touching “hot” objects when warned not to touch	36 months
Knows several colors; Draws a person	Draws a person with at least three body parts	48 months
Counts to 10; Identifies numbers and letters	Correctly identifies some numbers and letters when they are pointed out	60 months

On the Road to School!

4 Years - Draws a person with three or more body parts



CDC. "Milestones by 48 Months." *Learn the Signs. Act Early.*, 4 Sep. 2025,
<https://www.cdc.gov/act-early/milestones/48-months.html>

Names some letters when you point to them



CDC. "Milestones by 5 Years." *Learn the Signs. Act Early.*, 4 Sep. 2025,
<https://www.cdc.gov/act-early/milestones/5-years.html>

Receptive Language Milestones

Milestone	Description	Age of Attainment
Reacts to Sounds	Reacts to loud sounds	2 months
Locates Sounds	Turns head towards the sound of your voice	4 months
Reciprocal vocalizations	Takes turns making sounds with you	6 months
Responds to name	Looks when you call their name	9 months
Understands "no"	Understands when told "no" (pauses briefly or stops when you say it)	12 months

Hearing Voices (in a good way!)



CDC. "Milestones by 2 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/2-months.html>.



CDC. "Milestones by 9 Months." *Learn the Signs. Act Early.* Sep. 2025, <https://www.cdc.gov/act-early/milestones/9-months.html>.



CDC. "Milestones by 4 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/4-months.html>.

Receptive Language Milestones

Milestone	Description	Age of Attainment
Looks at familiar objects; Follows direction given with gesture	Looks at a familiar object when you name it ("where is the ball?"); Follows a direction when given with a gesture (gives you the ball when told "give me the ball" with your hand out)	15 months
Follows 1-step direction	Follows a one step direction when given without a gesture (gives you the toy when told "give it to me")	18 months
Points to things;	Points to things in a book when you ask ("where is the bear?"); Points to at least 2 body parts when asked to show you	24 months
Names things; Follows two-step directions	Names things in a book when you point and ask "what is this?"; Follows commands like, "Put the toy down and close the door"	30 months
Labels actions; Gives name	Says what action is happening in a picture or book when asked ("running", "eating", or "playing")	36 months

Understanding Voices



CDC. "Milestones by 15 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/15-months.html>.

Points to at least two body parts when you ask him to show you



CDC. "Milestones by 24 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/24-months.html>.

Receptive Language Milestones

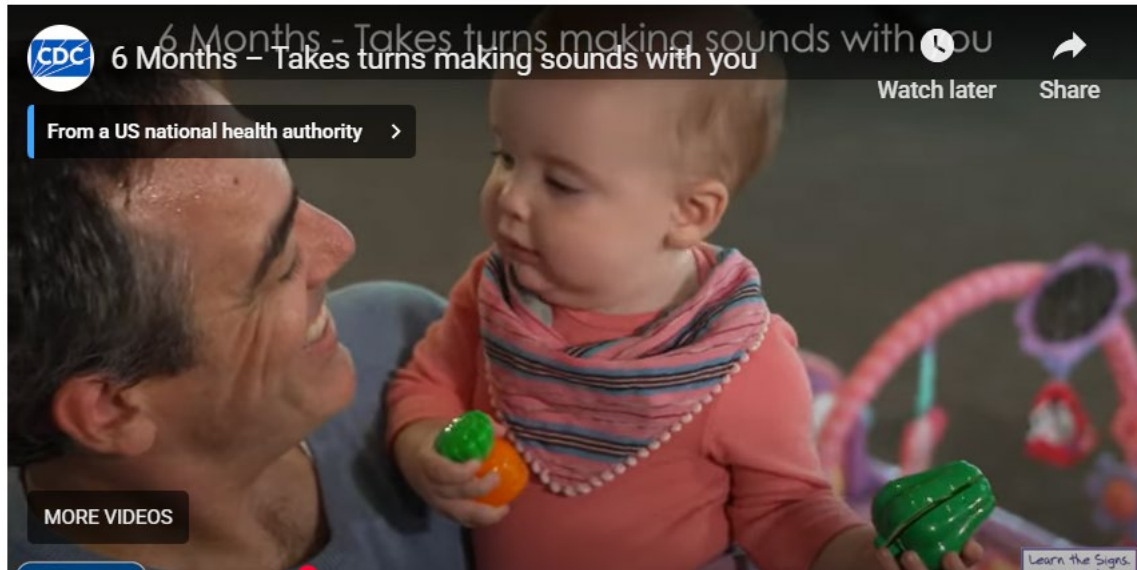
Milestone	Description	Age of Attainment
Answers simple questions	Answers simple questions such as "what is a coat for?"	48 months
Answers questions about a story; Knows some rhyming words	Answers simple questions about a book or story after you read or tell it to them; Uses or recognizes some simple rhymes (bat-cat, ball-tall)	60 months

Expressive Language Milestones

Milestone	Description	Age of Attainment
Cooing	Makes sounds like “oooh” and “ahhh”	4 months
Blows “raspberries”; Takes turns making sounds	Sticks tongue out and blows	6 months
Babbling	Makes sounds like “mamama” and “babababa”	9 months
Uses specific terms for caregivers; Waves bye-bye	Call only parents/caregivers “Mama” or “Dada”	12 months
Says 1-2 words; Points to make a request	Says 1-2 words besides “Mama” and “Dada”; Points for wants/needs	15 months
Tries to say ≥ 3 words	Tries to say at least 3 words besides “Mama” and “Dada”	18 months

Emerging Language

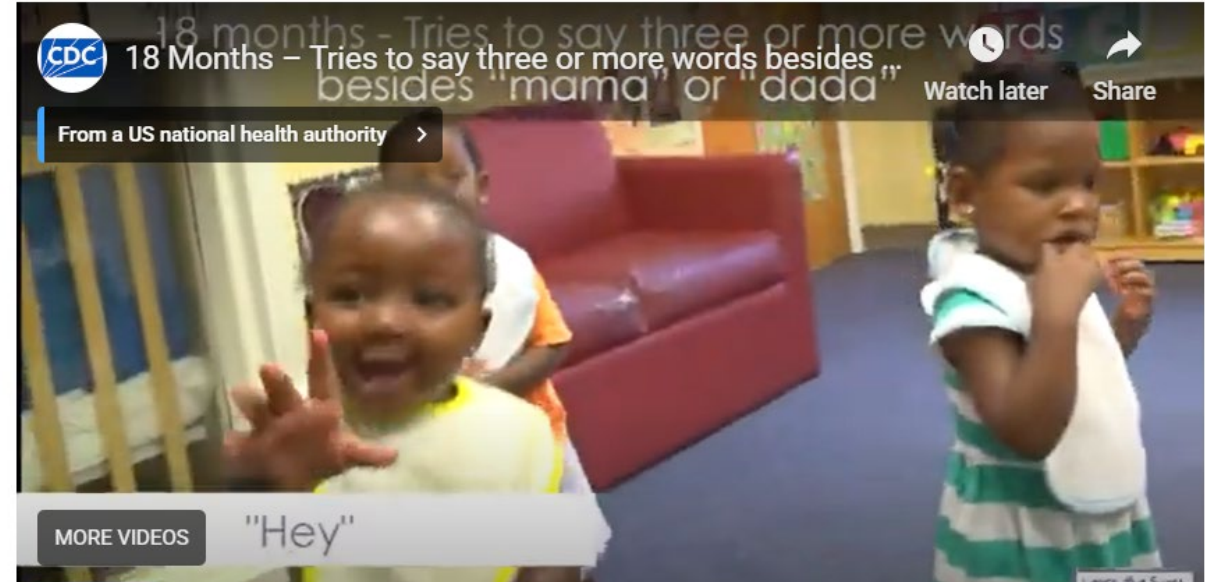
Takes turns making sounds with you



<https://youtu.be/FCcQeYVNVGE>

CDC. "Milestones by 6 Months." *Learn the Signs. Act Early.*, 11 Sep. 2025, <https://www.cdc.gov/act-early/milestones/6-months.html>.

Tries to say three or more words besides "mama" or "dada"



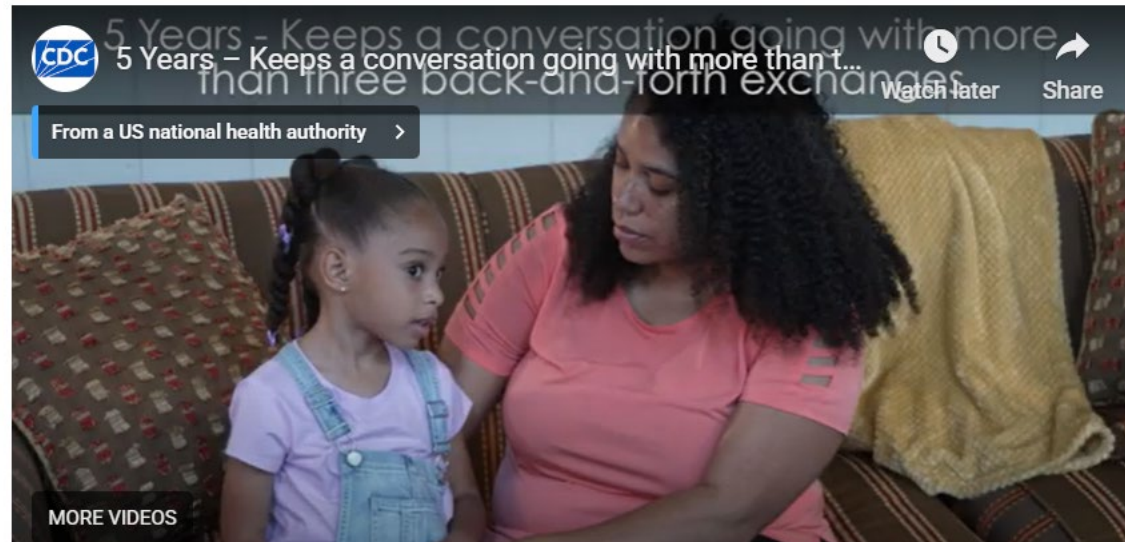
<https://youtu.be/BL5gjepzWBV>

CDC. "Milestones by 18 Months." *Learn the Signs. Act Early.*, 11 Sep. 2025, <https://www.cdc.gov/act-early/milestones/18-months.html>.

Expressive Language Milestones

Milestone	Description	Age of Attainment
Puts two words together; Uses gestures	Puts two words together (e.g., “More milk”); Uses more gestures than just waving and pointing	24 months
Says 50 words; Puts noun + verb together	Puts together two words, with one action word (e.g., “Doggie run”)	30 months
Engages in short conversation; Asks “wh” questions	Conversations have at least two back-and-forth exchanges; Asks questions like, “Where is Mommy?”	36 months
Uses sentences with at least four words; Talks about one thing that happened during their day	“Jessie gave me a sticker!” (example of five-word sentence that describes something that happened at preschool!)	48 months
Longer conversations	Keeps a conversation going with >3 back-and-forth exchanges	60 months

Keeps a conversation going with more than three back-and-forth exchanges



<https://youtu.be/1qGgCOUu-cI>

CDC. "Milestones by 5 Years." *Learn the Signs. Act Early.*, 4 Sep. 2025,
<https://www.cdc.gov/act-early/milestones/5-years.html>



Social-Emotional Milestones

Milestone	Description	Age of Attainment
Looks at your face; Social smile	Looks at a person's face; Smiles in response to another person's smile to them	2 months
Likes to look at self in mirror; Laughs	Likes to see themselves in a mirror; Makes a clear laughing sound (which is social – as laughter is often shared enjoyment)	6 months
Stranger danger; Responds to name; Laughs with peek-a-boo	Nervous around new people; Turns in response to hearing their name; Shares enjoyment with peek-a-boo	9 months
Plays social games	Plays games like pat-a-cake with others	12 months
Shows items of interest; Claps when excited	Shows items of interest (not just items with which they need help); Claps to express excitement/interest	15 months

You Seem Nice!

Smiles when you talk to or smile at him



CDC. "Milestones by 2 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025,

<https://www.cdc.gov/act-early/milestones/2-months.html>

15 Months - Shows you
an object she likes



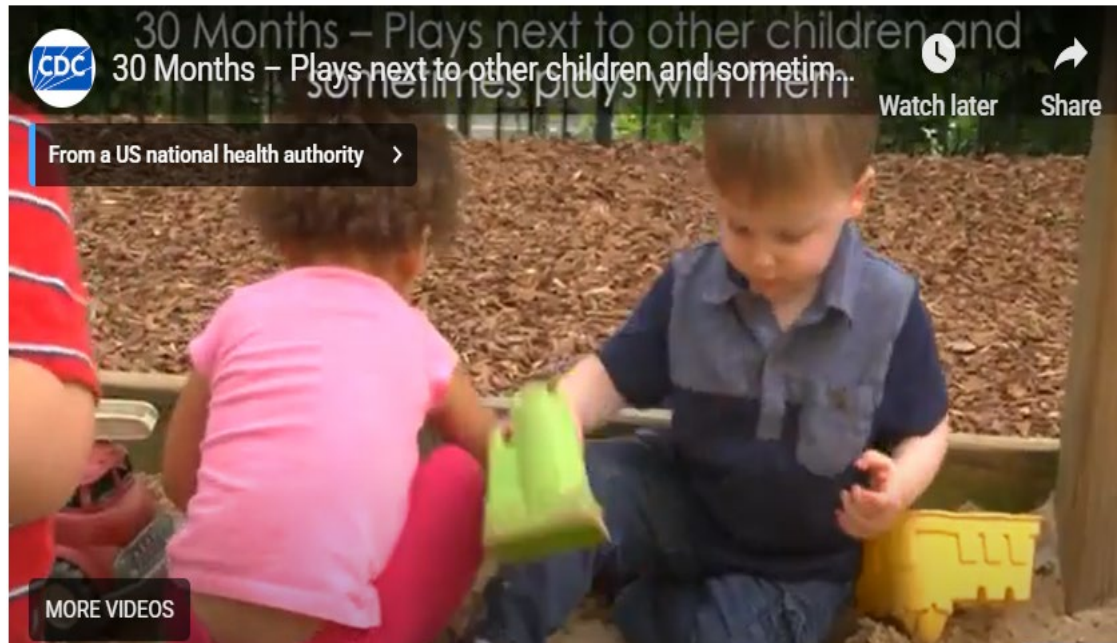
CDC. "Milestones by 15 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025,
<https://www.cdc.gov/act-early/milestones/15-months.html>.

Social-Emotional Milestones

Milestone	Description	Age of Attainment
Pointing to interests; Moves away but checks in	Points to something of interest (not making a request); Looks back to ensure parents are nearby	18 months
Noticing emotions	Notices when someone is hurt or upset	24 months
Moving from parallel to interactive play; “Look at me!”	Plays next to peers and sometimes plays with them; Shows you what they can do by	30 months
Initiates play	Notices other children and joins them to play	36 months
Imaginative and creative play; Likes to be a helper	Pretends to be someone or something else during play; Wants to be helpful around others	48 months
Takes turns; Sings, dances, or acts	Follows rules and takes turns when playing with peers; Wants to entertain others	60 months

Let's Hang Out!

Plays next to other children and sometimes plays with them



CDC. "Milestones by 30 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/30-months.html>.

Pretends to be something else during play (teacher, superhero, dog)



CDC. "Milestones by 48 Months." *Learn the Signs. Act Early.*, 2 Sep. 2025, <https://www.cdc.gov/act-early/milestones/48-months.html>.

Goal 2: Review How to Assess Developmental Milestones and Identify Developmental Delays



Developmental Surveillance

- Why: Because it is important to identify children at risk for developmental delays
- What: Six components of developmental surveillance
 - Ask parents/guardians if they have any developmental concerns
 - Document and maintain a developmental history
 - Observe the child (developmental observations)
 - Identify risks, strengths, and protective factors
 - Maintain and document the process and findings
 - Share opinions and findings with other health professionals
- When: Every well child check – continuous process





Learn the Signs. Act Early.

Your baby at 2 months

Baby's Name _____

Baby's Age _____

Today's Date _____

Milestones matter! How your baby plays, learns, speaks, acts, and moves offers important clues about his or her development. Check the milestones your baby has reached by 2 months. Take this with you and talk with your baby's doctor at every well-child visit about the milestones your baby has reached and what to expect next.



What most babies do by this age:

Social/Emotional Milestones

- ☐ Calms down when spoken to or picked up
- ☐ Looks at your face
- ☐ Seems happy to see you when you walk up to her
- ☐ Smiles when you talk to or smile at her

Language/Communication Milestones

- ☐ Makes sounds other than crying
- ☐ Reacts to loud sounds

Cognitive Milestones (learning, thinking, problem-solving)

- ☐ Watches you as you move
- ☐ Looks at a toy for several seconds

Movement/Physical Development Milestones

- ☐ Holds head up when on tummy
- ☐ Moves both arms and both legs
- ☐ Opens hands briefly

Your child at 15 months

Child's Name _____

Child's Age _____

Today's Date _____

Milestones matter! How your child plays, learns, speaks, acts, and moves offers important clues about his or her development. Check the milestones your child has reached by 15 months. Take this with you and talk with your child's doctor at every well-child visit about the milestones your child has reached and what to expect next.



What most children do by this age:

Social/Emotional Milestones

- ☐ Copies other children while playing, like taking toys out of a container when another child does
- ☐ Shows you an object she likes
- ☐ Claps when excited
- ☐ Hugs stuffed doll or other toy
- ☐ Shows you affection (hugs, cuddles, or kisses you)

Language/Communication Milestones

- ☐ Tries to say one or two words besides "mama" or "dada," like "ba" for ball or "da" for dog
- ☐ Looks at a familiar object when you name it
- ☐ Follows directions given with both a gesture and words. For example, he gives you a toy when you hold out your hand and say, "Give me the toy."
- ☐ Points to ask for something or to get help

Cognitive Milestones (learning, thinking, problem-solving)

- ☐ Tries to use things the right way, like a phone, cup, or book
- ☐ Stacks at least two small objects, like blocks

Movement/Physical Development Milestones

- ☐ Takes a few steps on his own
- ☐ Uses fingers to feed herself some food

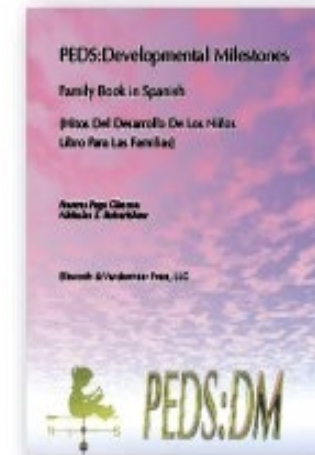
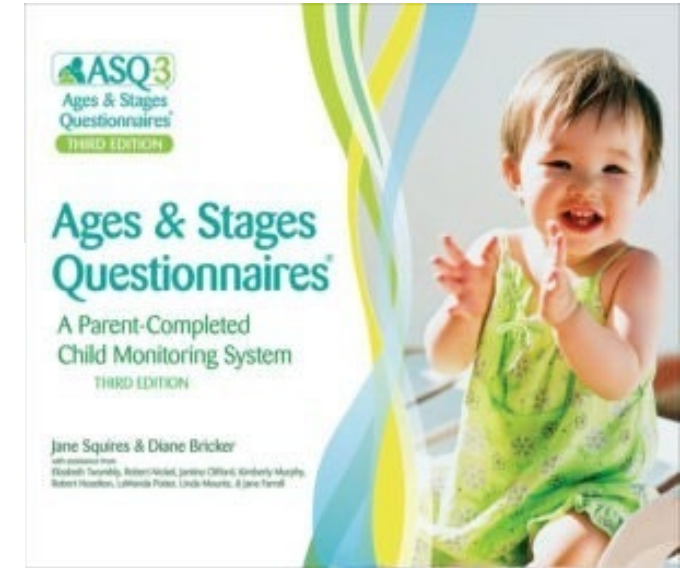
Developmental Screening

- Why: To get objective information about whether children are developmentally delayed
- What: A questionnaire (previously been validated) that caregivers complete
- When:
 - General developmental milestones screening (per the American Academy of Pediatrics, AAP):
 - 9 months
 - 18 months
 - 30 months
 - Autism-specific screening (per the AAP):
 - 18 months
 - 24 months
 - 30 months (not AAP – but my preference!)
 - But also..... any time a child between 16-30 months old walks into your clinic and indicates concerns for Autism



Developmental Screening Tools

- Ages & Stages Questionnaires, Third Edition (ASQ-3)
- The Survey of Well-being of Young Children (SWYC)
- PEDS Developmental Milestones (PEDS:DM)
- Autism-specific: Modified Checklist for Autism in Toddlers, Revised, with Follow-Up (MCHAT-R/F)
- AAP list:
<https://publications.aap.org/toolkits/resources/15625/Bright-Futures-Toolkit-Links-to-Commonly-Used?autologincheck=redirected>



What to Do if There Are Developmental Delays

- Medical Evaluation
- Developmental Therapies



Medical Evaluation of Developmental Delays

- The basics:

- Newborn screen
- Hearing (audiology consult)
- Vision (ophthalmology consult)
- Lead level
- CBC +/- iron studies

- Significant motor delays:

- Thyroid studies
- CK level
- Neuroimaging
- Neurology consultation

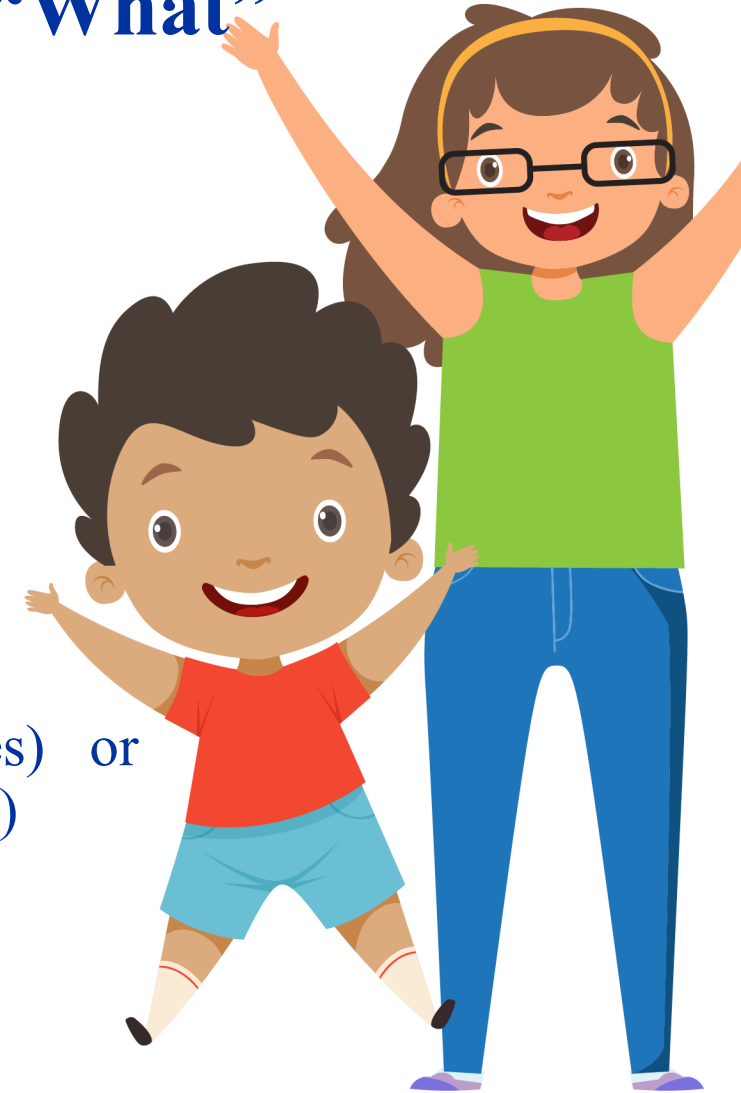
- Significant developmental delays + dysmorphic features:

- Genetic testing
- Genetics consultation



Developmental Therapies – The “What”

- Physical therapy
- Occupational therapy
- Speech and language therapy
- Developmental intervention (through Early Intervention services) or interdisciplinary early childhood education services (via school district)



Developmental Therapies – The “Where”

- Kentucky Early Intervention Services (KEIS)
 - Used to be called “First Steps”
 - For children from birth until their 3rd birthday
 - Parents can refer their child or a medical provider can refer a child
 - Assesses the five developmental domains
 - Develops an Individualized Family Service Plan (IFSP)
 - Options may include physical therapy, occupational therapy, speech and language therapy, and/or developmental instruction



Developmental Therapies – The “Where”

- Public school district

- For children from their 3rd birthday until age 22
- Parents have to contact the school district directly and sign a consent form
- Psychoeducational evaluation will assess developmental skills and learning abilities
- Develops an Individual Education Program (IEP)
 - There are 13 categories of disability, including “Developmental Delay”
- Options may include physical therapy, occupational therapy, speech and language therapy, social skills support, and/or special education (including interdisciplinary early childhood education services)



Developmental Therapies – The “Where”

- Outpatient developmental therapies
 - At any age
 - Must have a prescription from a medical provider
 - Each location will begin by assessing the child, using a standardized developmental test
 - The developmental therapists determine frequency and duration of services
 - Insurance usually requires ongoing plan of care forms to be signed by the child's medical provider



Goal 3: Highlight Features of the UK HealthCare Developmental Pediatrics Clinic



Our Division's Mission and Vision

Our Mission

To honor the worth of all children in Kentucky by providing high-quality consultation evaluations for common medical developmental diagnoses and by offering evidence-based recommendations to support children who have these common medical developmental diagnoses.

Our Vision

To serve as a medical center of excellence in clinical care, teaching, advocacy, and research for children with developmental disabilities in Kentucky and as a collaborative partner with other providers and centers to advance the care of all children who have developmental disabilities.



Our Providers



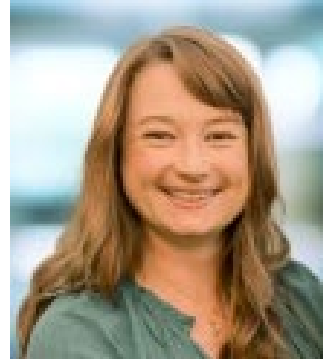
Marisa Toomey, MD



Marie Trace, MD



Megan Carter, DNP, APRN



Charlotte Adams, DNP, APRN



Hailey Johnson, MSN, APRN



Susan Noel, DNP, APRN



Alex Dulay, MSN, APRN



Caitlin Allen, PhD



Alyssa Frye, PsyD



Types of Patients We See

- Diagnostic Clarity in 18 month - 12 year old patients:
 - Autism Spectrum Disorder
 - Global Developmental Delay
 - Intellectual Disability
- New ADHD diagnoses in 4 - 12 year old patients who specifically have co-morbid developmental disabilities:
 - Autism Spectrum Disorder
 - Global Developmental Delay
 - Intellectual Disability
 - Delays due to premature birth
 - Delays due to in utero substance exposure



Types of Patients We See

- Medication consultations in 4 - 12 year old patients who have an existing diagnosis of Autism, ADHD, global developmental delay, and/or intellectual disability:
 - Hyperactivity/impulsivity
 - Inattention
 - Aggressive behaviors
 - Self-injurious behaviors
 - Anxious behaviors
 - Sleep difficulties



Process by Which Patients are Referred

Information about why a primary care provider is referring the patient

- Visit report with details about the concerns
- Copies of developmental screens

M-CHAT-R™

Please answer these questions about your child. Keep in mind how your child usually behaves. If you have seen your child do the behavior a few times, but he or she does not usually do it, then please answer **no**. Please circle **yes** or **no** for every question. Thank you very much.

1. If you point at something across the room, does your child look at it? (FOR EXAMPLE, if you point at a toy or an animal, does your child look at the toy or animal?)	Yes	No
2. Have you ever wondered if your child might be deaf?	Yes	No
3. Does your child play pretend or make-believe? (FOR EXAMPLE, pretend to drink from an empty cup, pretend to talk on a phone, or pretend to feed a doll or stuffed animal?)	Yes	No
4. Does your child like climbing on things? (FOR EXAMPLE, furniture, playground equipment, or stairs)	Yes	No
5. Does your child make <u>unusual</u> finger movements near his or her eyes? (FOR EXAMPLE, does your child wiggle his or her fingers close to his or her eyes?)	Yes	No
6. Does your child point with one finger to ask for something or to get help? (FOR EXAMPLE, pointing to a snack or toy that is out of reach)	Yes	No
7. Does your child point with one finger to show you something interesting? (FOR EXAMPLE, pointing to an airplane in the sky or a big truck in the road)	Yes	No
8. Is your child interested in other children? (FOR EXAMPLE, does your child watch other children, smile at them, or go to them?)	Yes	No
9. Does your child show you things by bringing them to you or holding them up for you to see – not to get help, but just to share? (FOR EXAMPLE, showing you a flower, a stuffed animal, or a toy truck)	Yes	No
10. Does your child respond when you call his or her name? (FOR EXAMPLE, does he or she look up, talk or babble, or stop what he or she is doing when you call his or her name?)	Yes	No
11. When you smile at your child, does he or she smile back at you?	Yes	No
12. Does your child get upset by everyday noises? (FOR EXAMPLE, does your child scream or cry to noise such as a vacuum cleaner or loud music?)	Yes	No
13. Does your child walk?	Yes	No
14. Does your child look you in the eye when you are talking to him or her, playing with him or her, or dressing him or her?	Yes	No
15. Does your child try to copy what you do? (FOR EXAMPLE, wave bye-bye, clap, or make a funny noise when you do)	Yes	No
16. If you turn your head to look at something, does your child look around to see what you are looking at?	Yes	No
17. Does your child try to get you to watch him or her? (FOR EXAMPLE, does your child look at you for praise, or say "look" or "watch me"?)	Yes	No
18. Does your child understand when you tell him or her to do something? (FOR EXAMPLE, if you don't point, can your child understand "put the book on the chair" or "bring me the blanket"?)	Yes	No
19. If something new happens, does your child look at your face to see how you feel about it? (FOR EXAMPLE, if he or she hears a strange or funny noise, or sees a new toy, will he or she look at your face?)	Yes	No
20. Does your child like movement activities?	Yes	No

<https://www.mchatscreen.com/>

The Survey of Well-being of Young Children

The Survey of Well-being of Young Children (SWYC)™ is a freely-available, comprehensive screening instrument for children under 5 years of age. The SWYC was written to be simple to answer, short, and easy to read. The entire instrument requires 15 minutes or less to complete and is straightforward to score and interpret. The SWYC is approved by MassHealth for compliance with the Children's Behavioral Health Initiative screening guidelines.

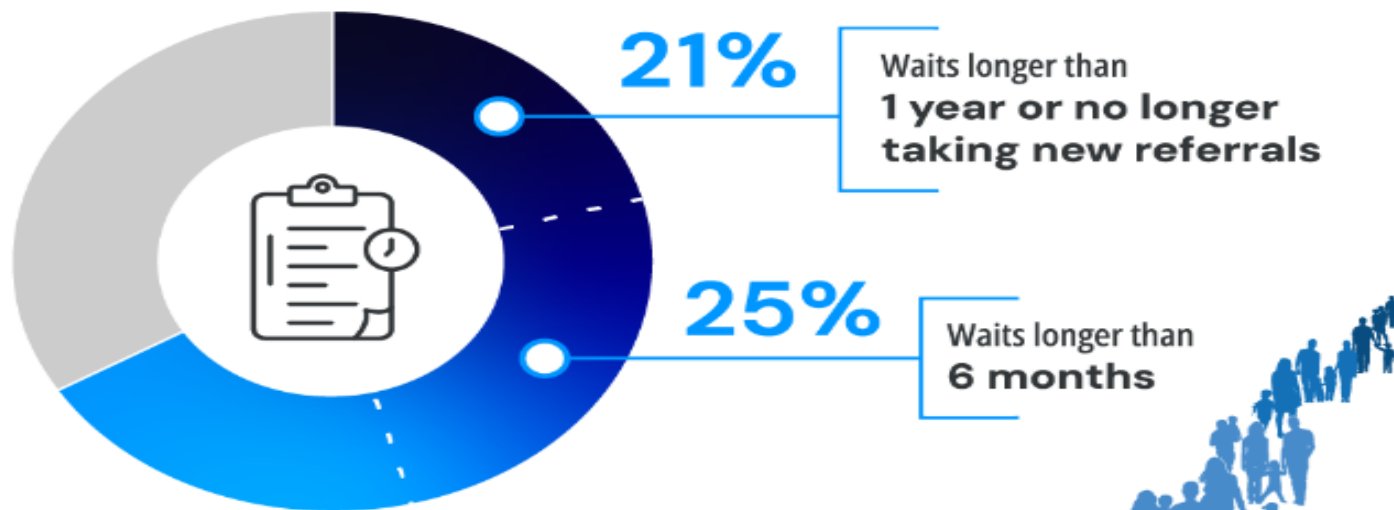
Recognized by the American Academy of Pediatrics

According to the AAP policy statement on developmental surveillance and screening, "it is appropriate to perform

<https://www.tuftsmedicine.org/medical-professionals-trainees/academic-departments/department-pediatrics/survey-well-being-young-children>



Wait Lists



Specialty Centers Waitlist Times

- More than 4 months
- Less than 4 months



A recent poll at the [Society for Developmental & Behavioral Pediatrics](#) Annual Meeting in September 2023 showed even longer wait lists. More than half of the audience of developmental behavioral pediatricians of academic or hospital affiliated centers self-reported waitlists of longer than 9 months.

The Developmental Pediatrics Population

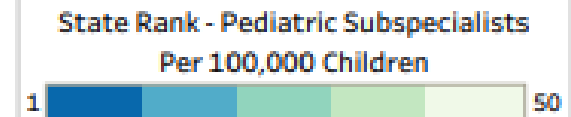
- Increasing prevalence of pediatric developmental-behavioral diagnoses across the US:
 - Developmental delay, intellectual disability, and/or Autism: 8.5% of children ages 3-17
 - Attention-deficit/hyperactivity disorder (ADHD): 10-11% of children ages 3-17
- Estimated prevalence in KY (using information from the March of Dimes Perinatal Data Center):
 - About 90,000 children have developmental delay, intellectual disability, and/or Autism
 - About 100,000 children have ADHD



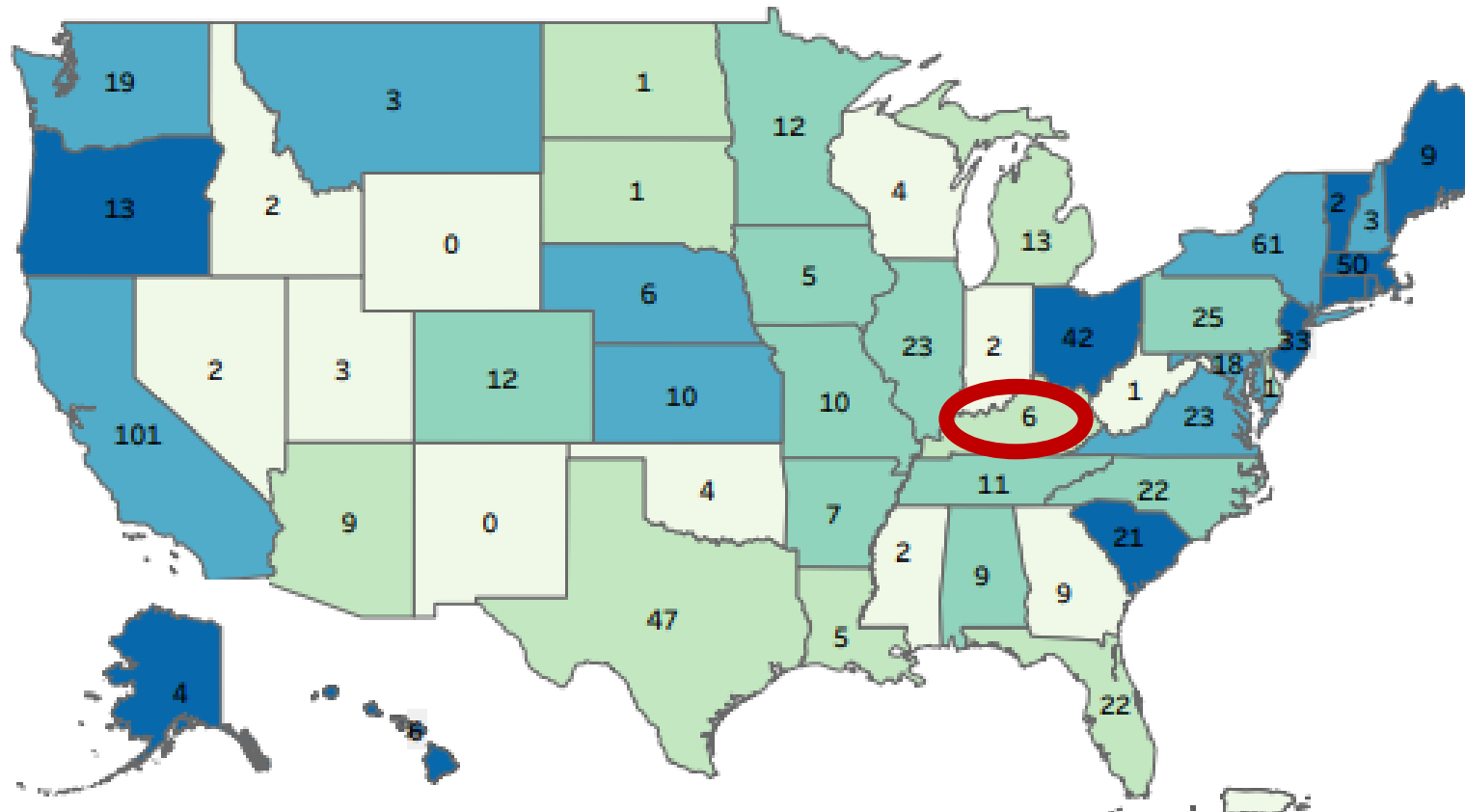
of US Based Pediatricians
Currently Certified by the ABP in
Developmental-Behavioral
Pediatrics, Age 70 and Under
717

Average # per State of Those
Currently Certified by the ABP in
Developmental-Behavioral
Pediatrics, Age 70 and Under
13.8

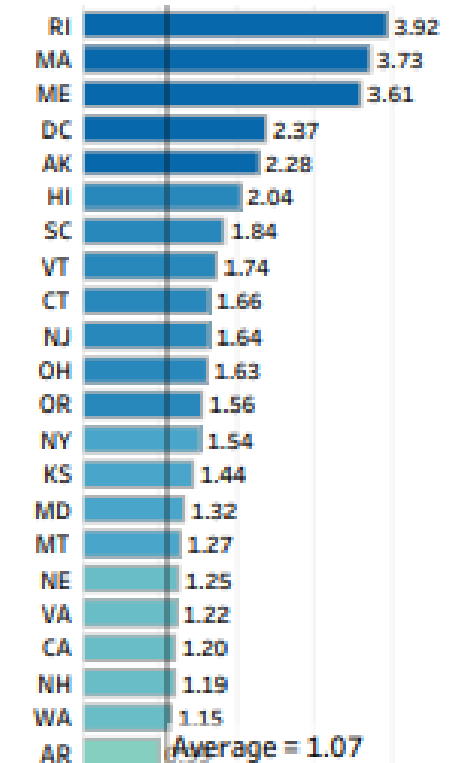
Average # of Those Currently
Certified by the ABP in
Developmental-Behavioral
Pediatrics per 100,000
Children, Age 70 and Under
0.98



Distribution of Developmental-Behavioral Pediatrics by Pediatrician count



State Rank of Those Certified
in Developmental-Behavioral
Pediatrics per 100,000
Children (0-17)



Our Wait List

 Society for Developmental & Behavioral Pediatrics (SDBP)
**How long is the wait list
at your center or practice?**



A recent poll at the *Society for Developmental & Behavioral Pediatrics* Annual Meeting in September 2023 showed even longer wait lists. More than half of the audience of developmental behavioral pediatricians of academic or hospital affiliated centers self-reported waitlists of longer than 9 months.

Patient Workshops



Our online webinar outlines what to expect now that your child has been referred to our Developmental Pediatrics clinic.

Now that your child has been referred to our clinic, located at 1900 Richmond Road, we want you to know what to expect.

In our 30 – 60-minute virtual webinar, we will help you prepare for your child's visit.

WE WILL:

- Explain our services
- Set visit expectations
- Provide answers to frequently asked questions
- Share next steps in the process with parents or guardians

Diagnosis-specific information will not be discussed.

To register for the webinar:

Send an email to developmentalped@uky.edu

This email is for registration only. Specific questions will be answered during the session.

Login information will be sent before the session.

Strategic Plan 2024 – 2027



Our Mission

Optimizing the development and behavioral (DB) health of all children and families through interprofessional collaboration.



QUALITY

Advancing quality of developmental and behavioral clinical care to improve outcomes.

- **Advance** – Advance care quality by expanding current efforts to support research.
- **Advocate** – Advocate for increased funding for inclusive research that promotes equitable care.
- **Collaborate** – Build partnerships to establish and monitor quality-of-care metrics.
- **Translate** – Translate the science of DBP into practice.



ACCESS

Increasing timely, equitable access to evidence-based developmental and behavioral care.

- **Workforce Development** – Increase the number of well-trained, diverse* clinicians delivering DB-focused care.
- **Systems of Care** – Identify and disseminate innovative practice models.
- **Advocacy** – Identify, prioritize, and promote strategies for addressing systemic issues impacting access to care.

**Diversity includes but is not limited to racial, ethnic, neurodiversity, professional, and gender-related factors.*

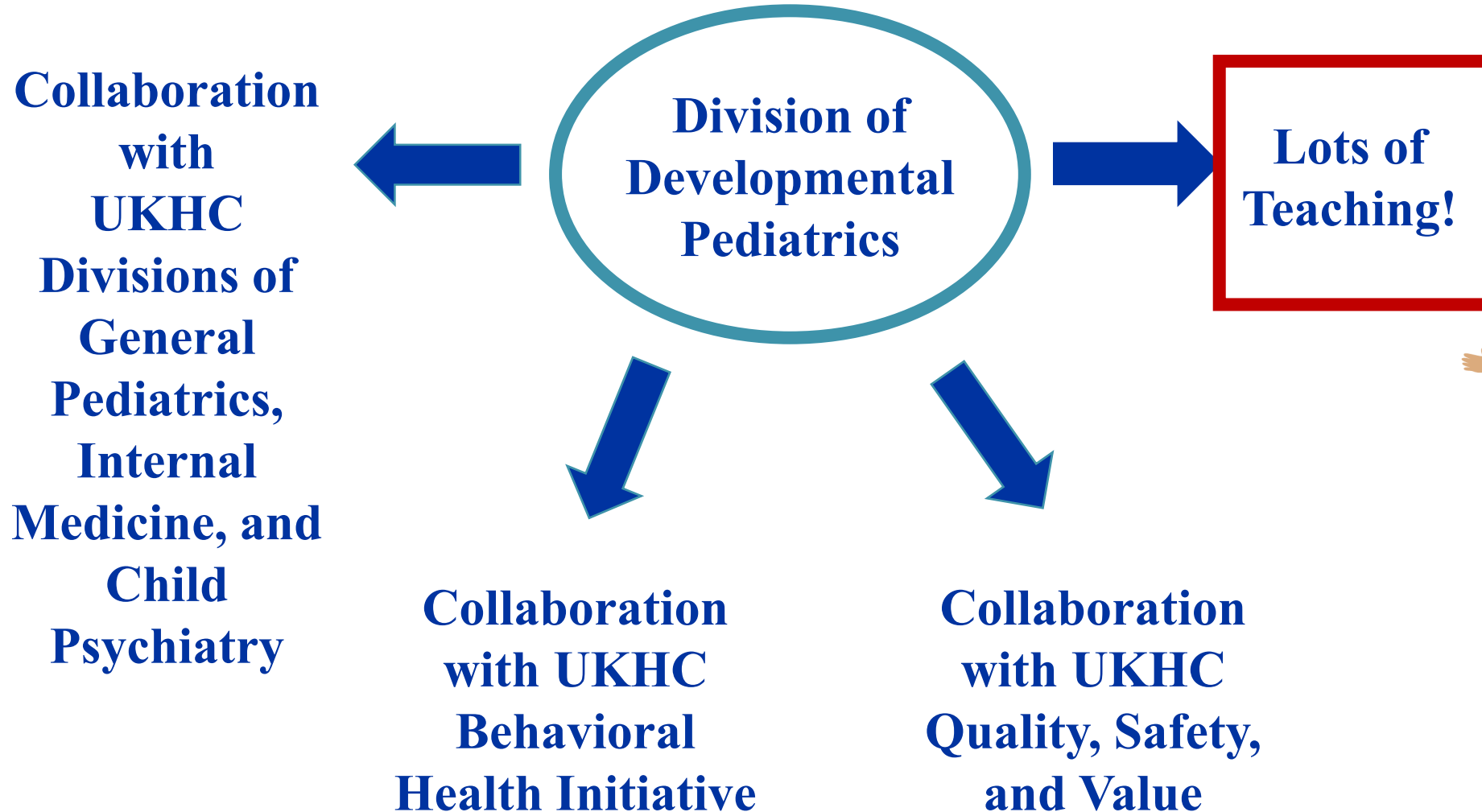


SUSTAINABILITY

Promoting and supporting the developmentally and behaviorally (DB) focused workforce.

- **Economics** - Improve compensation and financial resources for DB-focused professionals.
- **Talent Retention** - Promote efforts that improve satisfaction and retention of DB-focused professionals.
- **Collaboration** - Develop and lead a coalition of DB-focused organizations.

What else do we do?



UK HealthCare APP Fellowship in Developmental-Behavioral Pediatrics

- Mission: To provide a comprehensive, evidence-based training program in developmental pediatrics, incorporating both educational opportunities and direct patient care, for advanced practice providers.
- Vision: To improve the quality of care and the access to care for children with developmental disorders across the Commonwealth of Kentucky.



Program Details

- Target APP audience: Pediatric or Family nurse practitioners
- Length of Program: 2 years
 - Initial 18 month training program within the UK HealthCare Division of Developmental Pediatrics
 - Subsequent 6 month practicum placement
 - Initial practicum placement options may include UK Healthcare Developmental Pediatrics Clinic or other UK HealthCare Pediatrics Clinics
 - Future practicum placement opportunities could possibly include regional campus partners (e.g., St. Claire HealthCare in Morehead, KY)
- Upon graduation: Certificate of completion



Post-Graduation

- After completion of the two-year program, follow-up can be offered 1-2 times per month (or more frequently if needed):
 - Further questions, concerns, and/or ability to provide curbside consultation advice
 - Options could include phone consultation, Zoom consultation, and/or model similar to the KY ECHO Autism program



References

- CDC. Learn the Signs. Act Early. <https://www.cdc.gov/act-early/index.html>. Accessed 10/26/2025.
- Danielson ML, Claussen AH, Bitsko RH, et al. ADHD Prevalence Among U.S. Children and Adolescents in 2022: Diagnosis, Severity, Co-Occurring Disorders, and Treatment. *Journal of Clinical Child & Adolescent Psychology*. 2024; 53(3): 343-360. DOI: <https://doi.org/10.1080/15374416.2024.2335625>.
- March of Dimes Peristats. <https://www.marchofdimes.org/peristats/data/?reg=99&top=14&stop=17&lev=1&slev=4&obj=19&seg=21>. Accessed 07/31/2024.
- Noritz GH, Murphy NA, Hagan JF, et al. Motor Delays: Early Identification and Evaluation. *Pediatrics* 2013; 131 (6): e2016–e2027. doi: 10.1542/peds.2013-1056.
- Zablotsky B, Ng AE, Black LI, et al. Diagnosed developmental disabilities in children aged 3-17 years: United States, 2019-2021. *NCHS Data Brief*. July 2023; No. 473. DOI: <https://dx.doi.org/10.15620/cdc:129520>.
- Zubler JM, Wiggins LD, Macias MM, et al. Evidence-Informed Milestones for Developmental Surveillance Tools. *Pediatrics* 2022; 149 (3): e2021052138. doi: 10.1542/peds.2021-052138.



*Thank
you!*

