

Self-Regulation and Coping Across the Lifespan: Sensory Processing Measure, Second Edition

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- PhD: Special Education in Early Childhood
- Master's: Occupational Therapy
- Bachelor's: Rehabilitation Services with a concentration in Counseling
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- Over 20 years of experience in rehabilitation
- RESNA, Certified Assistive Technology Professional
- IBCCES, Board-Certified Telepractice Specialist
- Florida Occupational Therapy Association, President

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I am an assessment consultant with Western Psychological Services. I am a salaried employee and have no additional relevant financial interests or conflicts of interest related to this presentation.

Objectives

- Discuss self-regulation and coping across the lifespan in relation to sensory processing
- Provide an overview of the Sensory Processing Measure, Second Edition across the lifespan
- Discuss the Sensory Processing Measure, Second Edition Quick Tips



Self-Regulation and Coping Across the Lifespan



Self-Regulation: Defined

- What is self-regulation?
 - Process of managing thoughts, feelings, and emotions to enable goal-directed actions



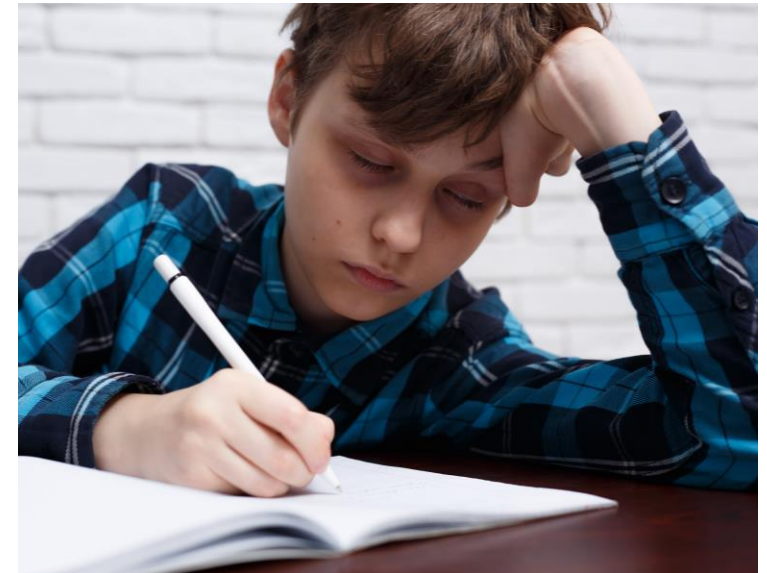
Self-Regulation: Defined *(cont.)*

- What is self-regulation?
 - Involves physical, emotional, mental, and social states/functions
 - Multifaceted
 - Involves adaptive responses



Coping: Defined

- What is coping?
 - Ability to manage the demands of and emotions generated by the person–environment relationship
 - Efforts to manage internal and external demands
 - Individual variability



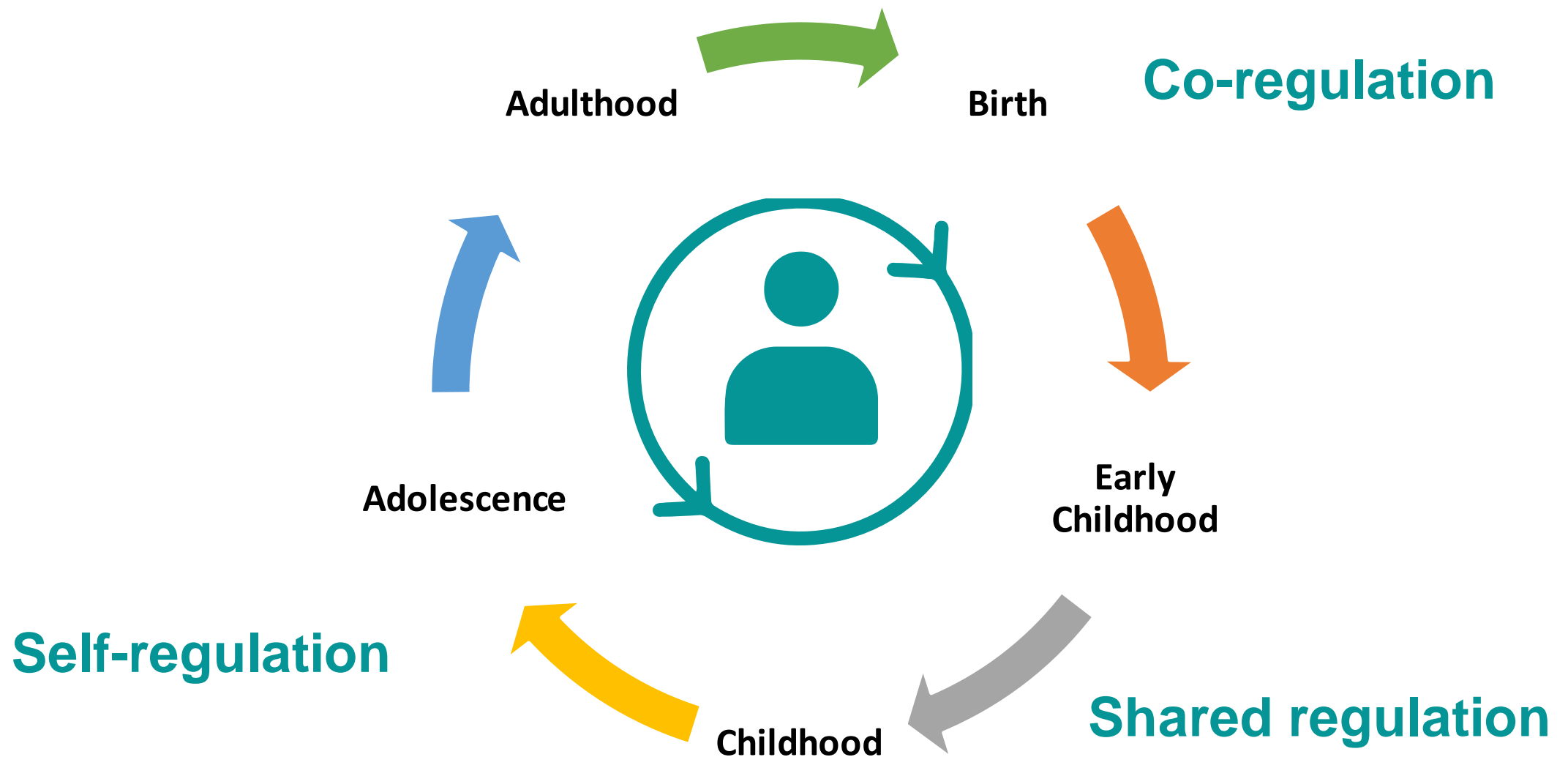
(Lazarus & Folkman, 1984)

Coping: Defined *(cont.)*

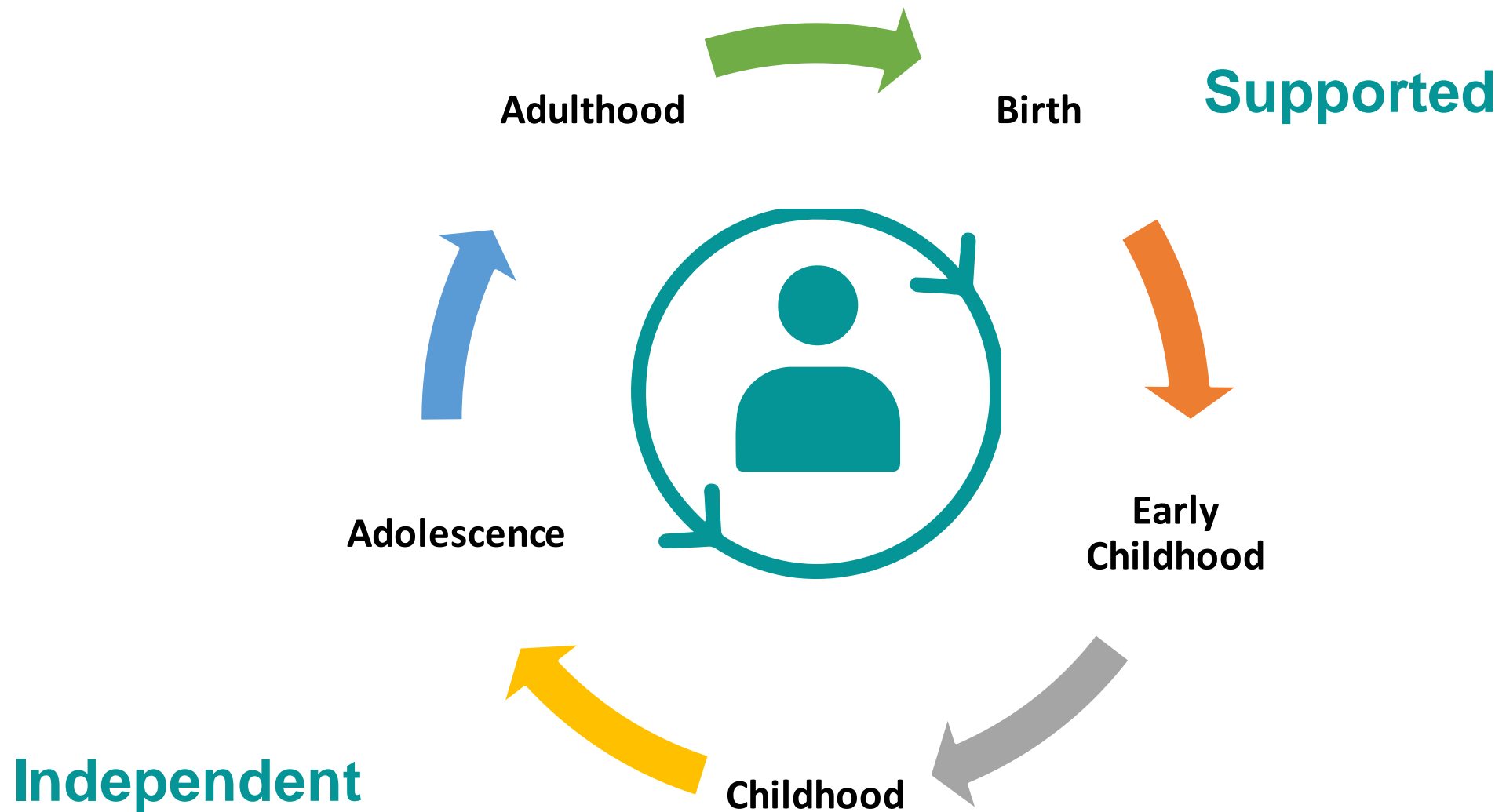
- What is coping?
 - Efforts to manage internal and external demands
 - Individual variability



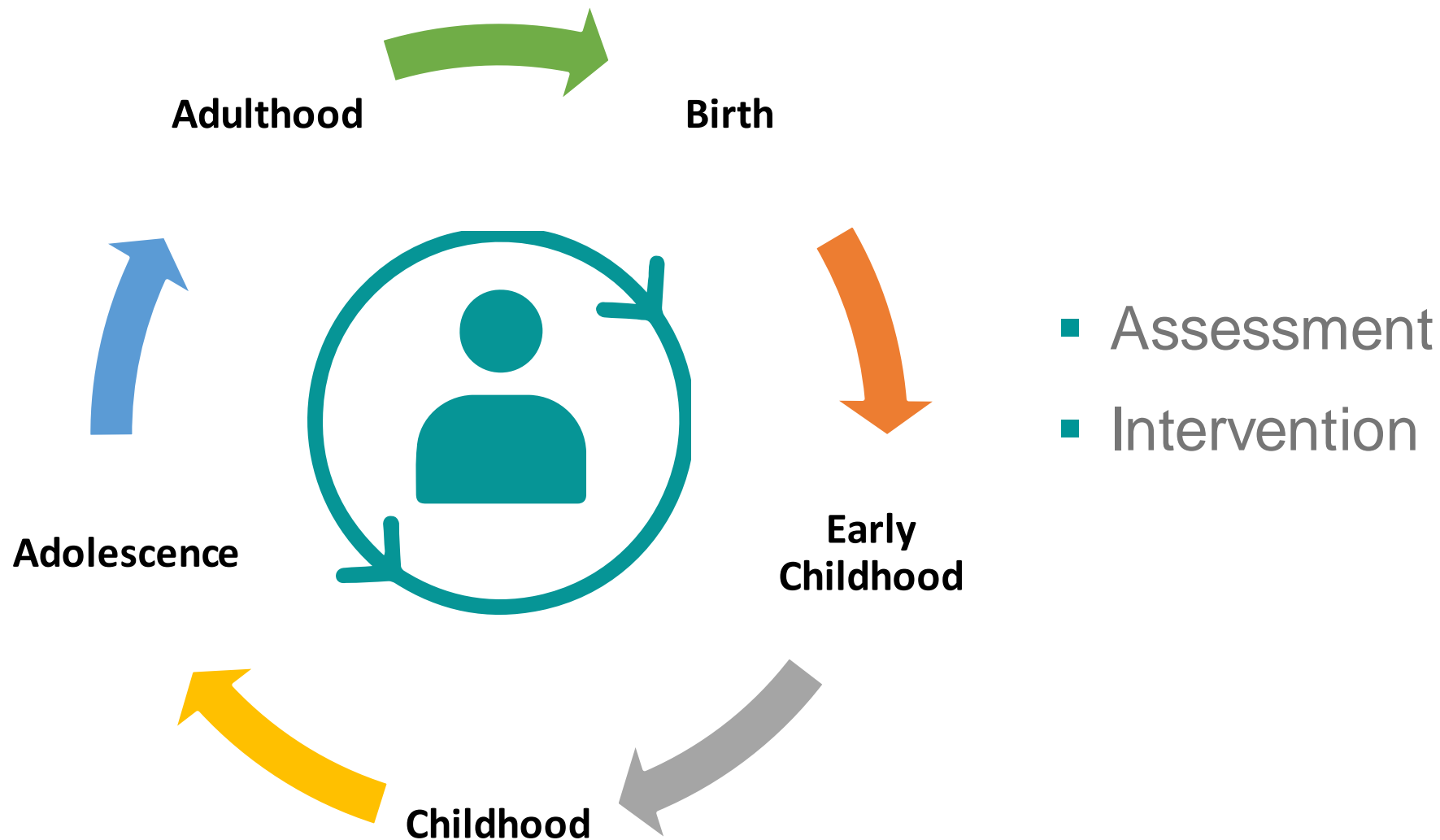
Self-Regulation Across the Lifespan



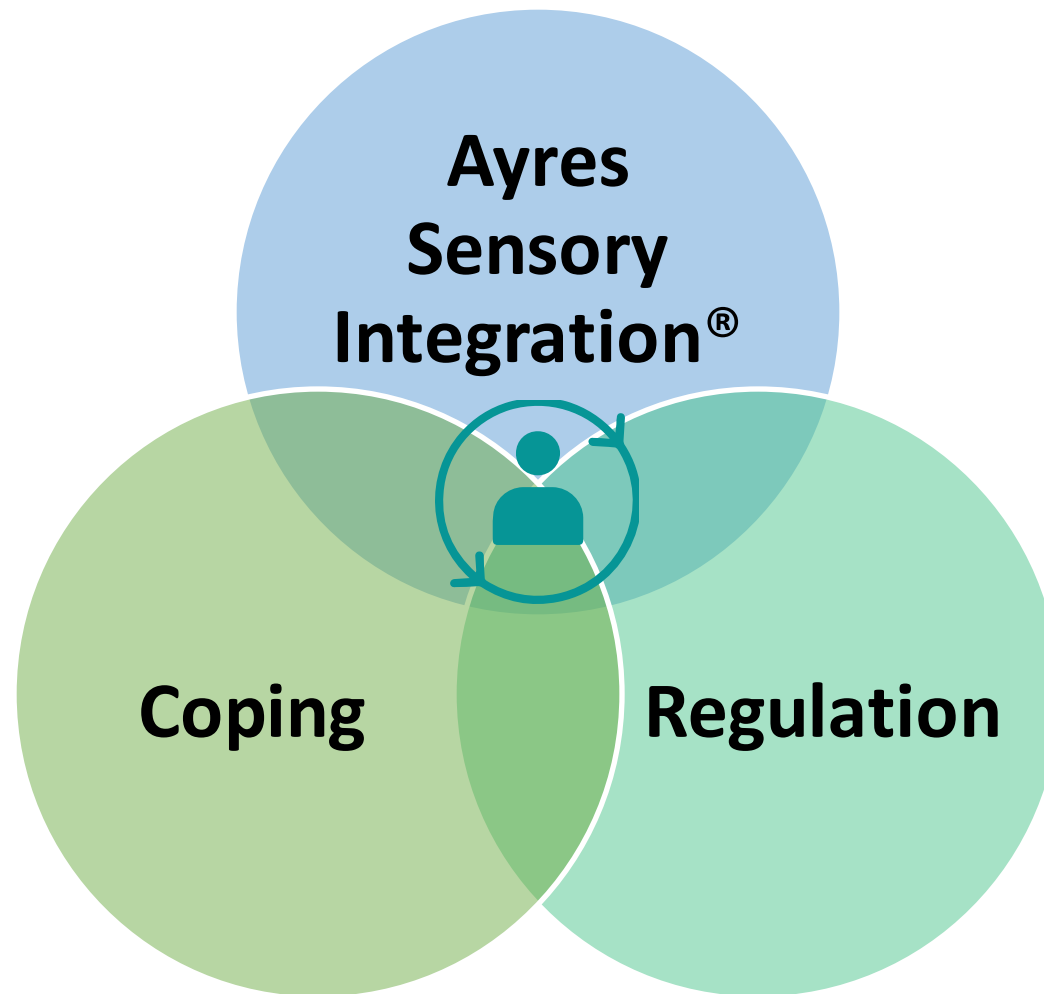
Coping Across the Lifespan



Supporting Self-Regulation & Coping Across the Lifespan



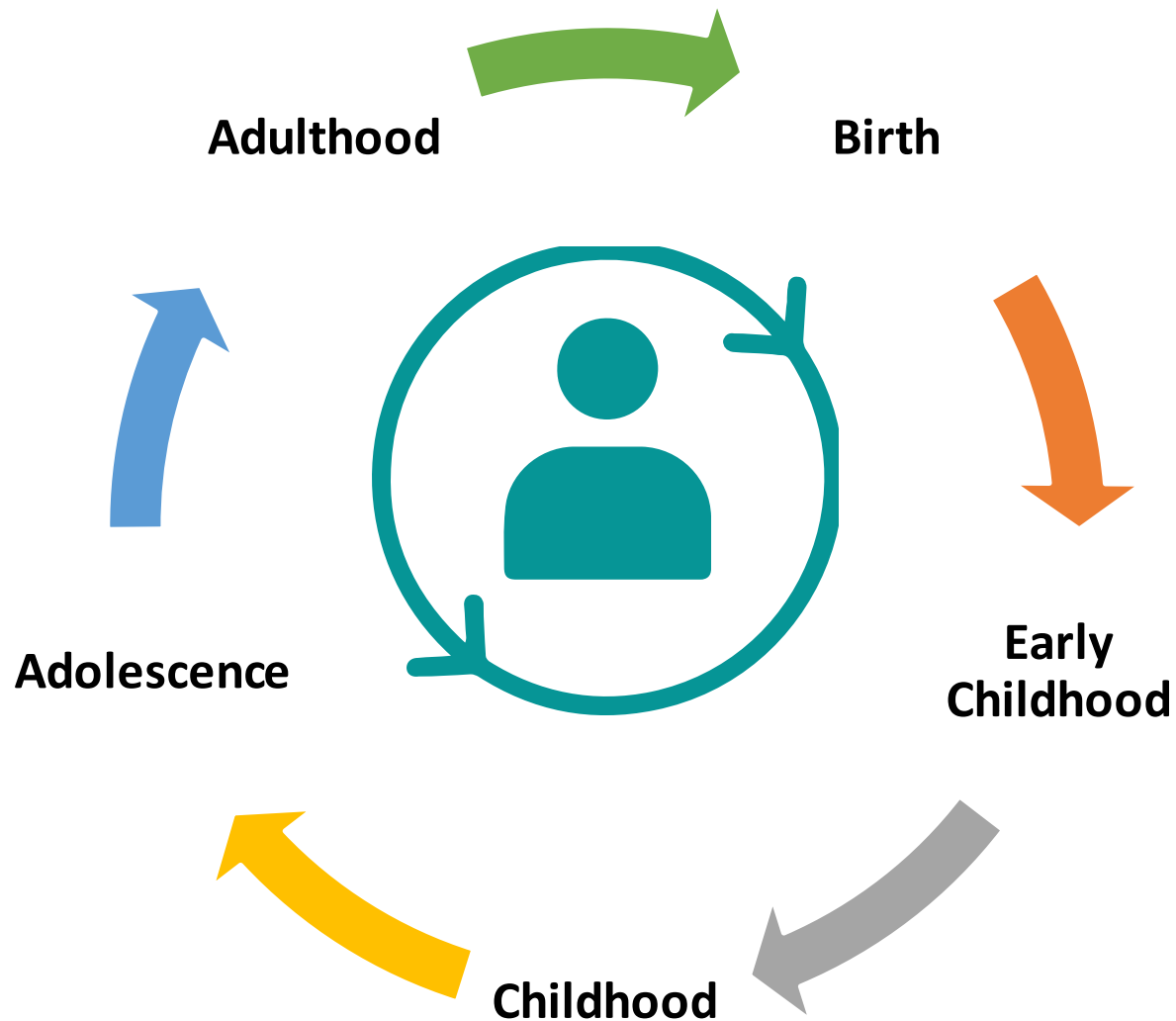
Coping & Self-Regulation: Relationship to Sensory Processing



Assessment Across the Lifespan



Assessment Across the Lifespan

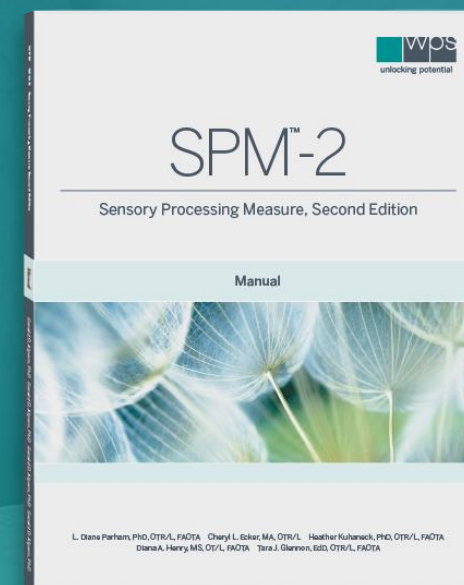


Assessment: Sensory Processing

- Assessment
 - Rating scales
 - Sensory-based
 - Adaptive behavior
- Performance-based assessments
 - Observation

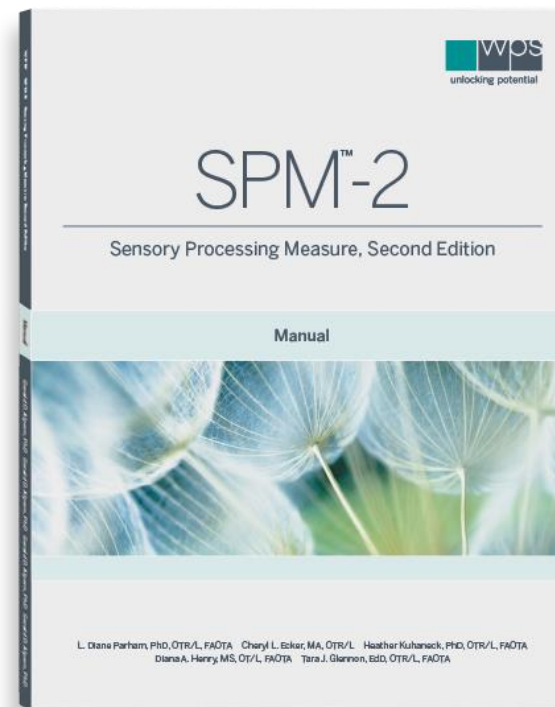


Sensory Processing Measure, Second Edition



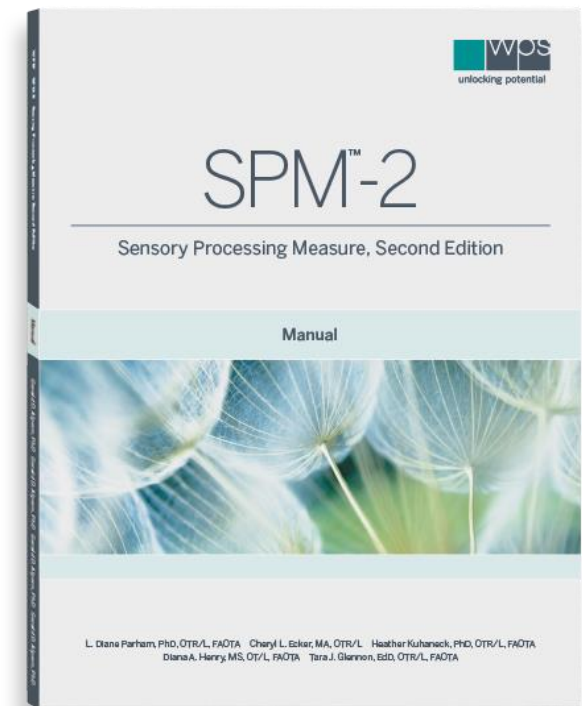
Sensory Processing Measure, Second Edition

- Easy to use
- Reliable
- Valid
- Time efficient
- Informative



Overview

- The Sensory Processing Measure, Second Edition (SPM-2) is a revision and expansion of:
 - Sensory Processing Measure (2007)
 - Sensory Processing Measure—Preschool (2010)
- The SPM-2 expands the age range downward to include infants and toddlers and upward to include adolescents and adults



Overview *(cont.)*

- Used in many different settings where assessment of an individual's developmental abilities, strengths, and weaknesses is useful



Schools



Clinics



Hospitals



Community agencies



Residential facilities



Research

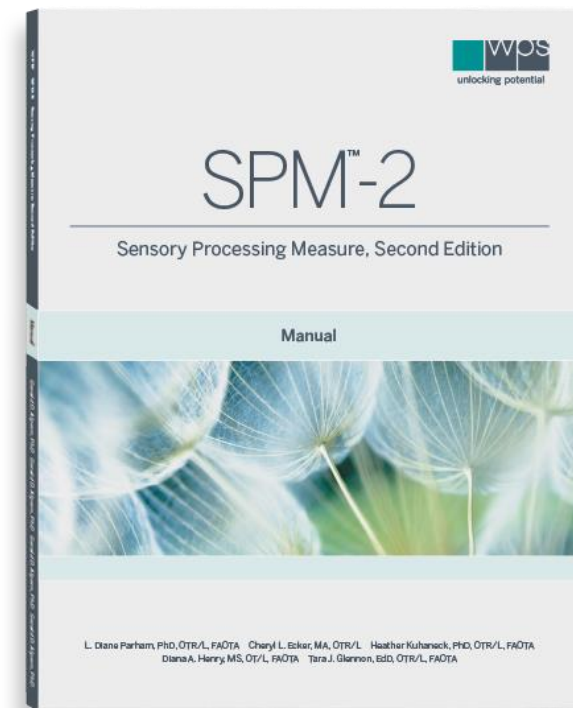
Uses

- The SPM-2 supports identification and treatment of sensory integration and processing difficulties
- Developed by occupational therapists and is appropriate to be used by various professionals
 - Consult OT for intervention
- May be used alone or as a screening instrument in conjunction with other assessments



SPM-2: What's New

- Expanded age range includes infants, toddlers, preschool and school-age children, adolescents, and adults
- Updated norms based on new, nationally representative standardization samples
- Assess and compare across daily environments with new forms, including driving forms



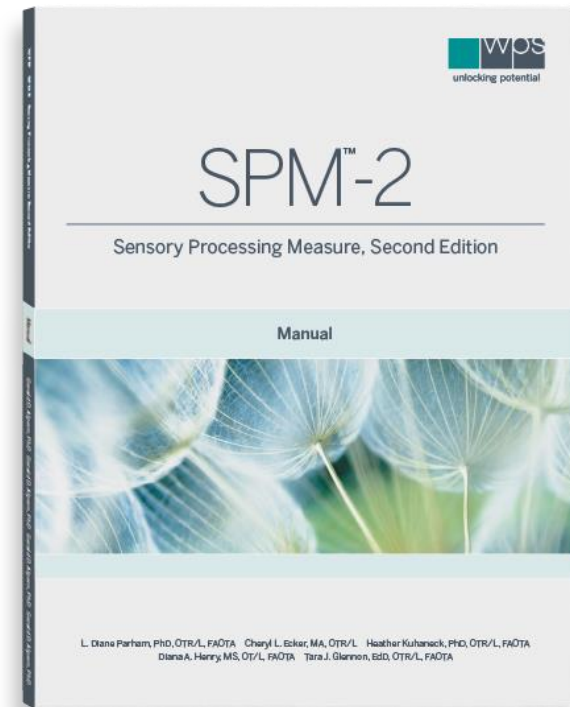
SPM-2: What's New *(cont.)*

- Updated SPM-2 Quick Tips now organized by additional sensory, cognitive, and behavioral objectives to develop intervention strategies for home, school, work, and in the community
- Compare sensory needs of individuals to those of the caregiver, parent, teacher, or other adult
- Updated item content reflects changes in technology for children's play and activities



Key Features

- Assessment of sensory systems:
 - *T*-scores provide norm-referenced indexes of function
 - Visual, auditory, tactile, olfactory, gustatory, proprioceptive, and vestibular sensory systems
 - Integrative functions of praxis and social participation



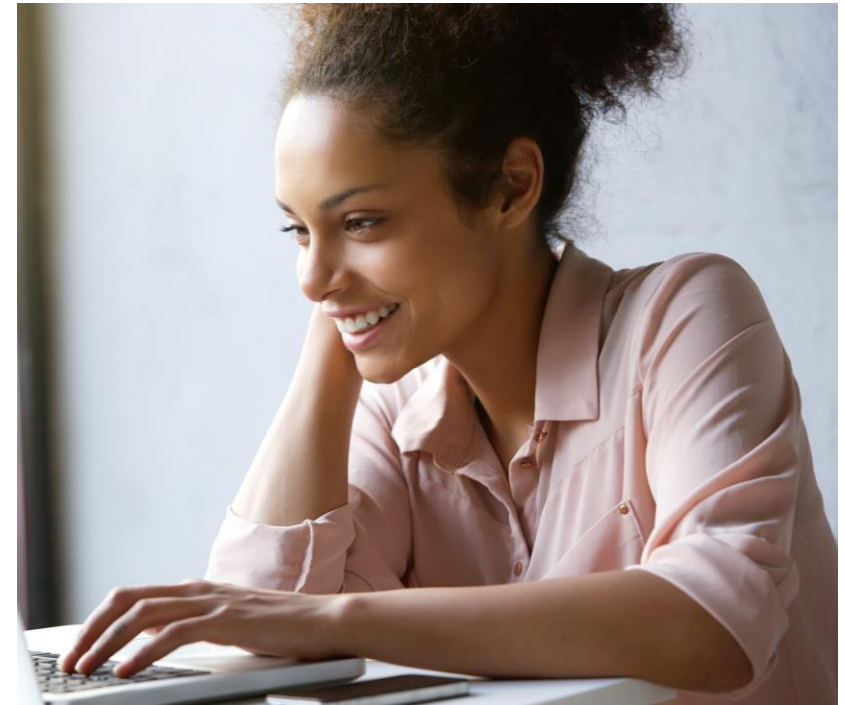
Key Features *(cont.)*

- Assessment of sensory integration vulnerabilities:
 - The SPM-2 items provide descriptive clinical information on processing vulnerabilities within each sensory system, including
 - Under- and over-reactivity
 - Sensory-seeking behavior
 - Difficulties with perception



Key Features *(cont.)*

- Assessment across multiple environments and raters:
 - Forms at each age level of the SPM-2 are designed for maximum flexibility in choosing and comparing among environments and raters, such as:
 - 12 main forms
 - Multiple caregivers



SPM-2 Components

- Print and digital materials on the WPS Online Evaluation System (OES)
- Manual
- Various forms across the lifespan for completion by caregivers, teachers, and self-report
 - Infant/Toddler
 - Preschool
 - Child
 - Adolescent
 - Adult



Scales

- Vision (VIS)
- Hearing (HEA)
- Touch (TOU)
- Taste and Smell (T&S)
- Body Awareness (BOD)
- Balance and Motion (BAL)
- Planning and Ideas (PLN)
- Social Participation (SOC)

Compare Two SPM-2 Forms: Calculate DIF Scores

Form 1		Form 2	
Adolescent School Form		Adolescent Self-Report Form	
Name of client		Name of person being rated (if other than client)	
Date of birth	Date form completed	Date of birth	Date form completed
Rater's name			
Rater's relationship to client			

	Form 1 T-score	Form 2 T-score	DIF score
DIF calculation			
DIF interpretation			

1. Enter the T-scores for each scale from Form 1.

2. For the DIF calculation, subtract Form 2 T-score from Form 1 T-score.

3. Enter the value in the DIF score row.

4. Check the DIF interpretation box (No DIF, Probable Difference, or Definite Difference).

Note: A positive DIF value that falls in the Probable Difference box indicates more problems reported in Form 1 than in Form 2. A negative DIF value indicates more problems reported in Form 2 than in Form 1.

TASTE AND SMELL

Never	Occasionally	Frequently	Always
N	O	F	A

- I avoid tasting unfamiliar foods.
- I notice scents and odors that other people don't.
- I dislike eating in restaurants because of the different smells and tastes.
- I am bothered by smells that don't bother others.
- I avoid groups of people in enclosed spaces, such as elevators or crowded rooms, because of the smell.
- When I come across something new, I like to smell it.
- I am disgusted by the taste of certain foods.
- I am sensitive to even small amounts of bitter or sour tastes.
- I like to sniff or smell people.
- I insist on eating the same brand of a particular food because of the taste.

BODY AWARENESS

- I throw the ball too hard or too soft and miss the target.
- When I carry things on a tray, objects tend to spill or fall off.
- I handle containers so tightly or roughly that they dent, break, or spill.
- I hold objects so loosely that they fall out of my hand.
- I break things by pressing, pulling, or pushing too hard on them.
- I accidentally knock things over.
- I tend to use too much pressure for the task I am doing, such as breaking pencil points when writing.
- I like to bump into things.
- Others complain that I push, hug, or hit too hard.
- I slam doors shut or push them open with too much force.

BALANCE AND MOTION

- I dislike activities that cause me to tilt my head back, such as looking at something above me or rinsing my hair.
- I dislike riding in elevators or on escalators because the movement makes me uncomfortable.
- I avoid walking on uneven surfaces that require balance, such as dirt or grass.
- I trip or lose my balance.
- I feel uncomfortable on stairs or ladders.
- When sitting on the floor, I have to lean on something.
- I get dizzy when turning my head back and forth, such as looking both ways before crossing the street.
- I become uncomfortable when I have to sit on a seat without a back.
- I rock or swivel in my chair while seated at a desk or table.
- I slump or hold my head up in my hands while seated at a desk.

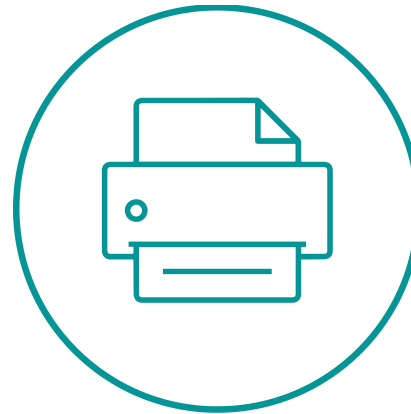
PLANNING AND IDEAS

- I need more practice than others to learn a new skill.
- I have trouble figuring out how to carry several objects at the same time.
- I have trouble keeping things organized.
- I need to take myself through the steps of a task while doing it.
- I have trouble completing tasks requiring many steps that must be done in the correct order.
- I have difficulty following the steps for a new task, such as in a recipe or repair manual.
- I have trouble coming up with ideas for new activities.
- I have trouble following a diagram to build something, such as putting together furniture.
- I have difficulty using my imagination to create new games or activities when playing with children.
- I have trouble coming up with ideas during games like charades.

SOCIAL PARTICIPATION

- I get along with others easily.
- I enjoy being with friends.
- I avoid social activities with unfamiliar people.
- I enjoy participating in family gatherings.
- I join activities with others without disrupting the ongoing activity.
- It is difficult for me to make eye contact with people when talking to them.
- I get stuck on one topic when talking with others.
- Others tell me I seem to be ignoring people, when actually I didn't notice they were there.
- People tell me that I speak too softly or too loudly.
- I enjoy working as part of a team.

SPM-2: Administration



[illegible]

Adult
21–87 years

SPM-2: Administration (cont.)

















Age of client				Age level to use	
4 to 9 months				Infant	
10 to 23 months				Toddler	
24 to 30 months	Attends formal day care outside of the home?		No		Toddler
			Yes		Preschool
31 months to 4 years				Preschool	
5 years	Has started an academic kindergarten?		No		Preschool
			Yes		Child
6 to 11 years				Child	
12 years	Has started middle school?		No		Child
			Yes		Adolescent
13 to 20 years				Adolescent	
21 years	Still in high school?		Yes		Adolescent
			No		Adult
Over 21 years				Adult	

Figure 2.1. SPM-2 Forms to Use by Client Age

SPM-2: Administration (cont.)

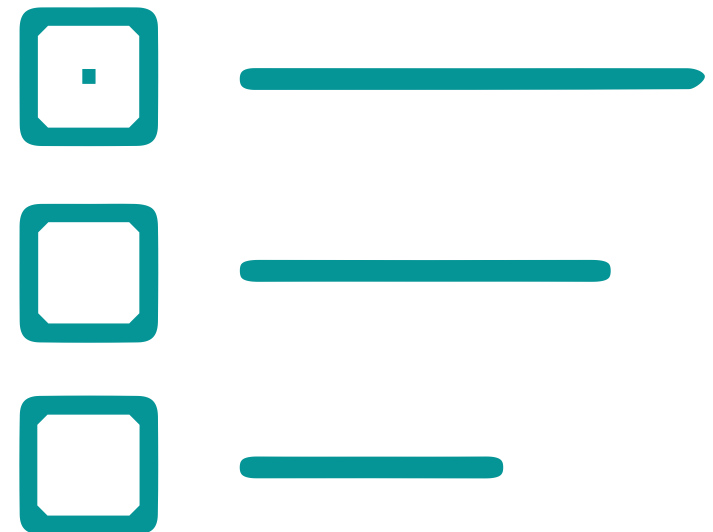
- Environment forms
 - Art (ART)
 - School Bus (BUS)
 - Cafeteria (CAF)
 - Music (MUS)
 - Physical Education (PHY)
 - Recess/Playground (REC)
 - Driving



The image displays a collection of SPM-2 forms, including Home Form, Rater Report Form, and Score Summary Sheet, for various environments such as Art (ART), School Bus (BUS), Cafeteria (CAF), Music (MUS), Physical Education (PHY), Recess/Playground (REC), and Driving. The forms are organized into a grid, showing the layout of the assessment materials.

SPM-2: Administration *(cont.)*

- Items rated based on frequency of a specific behavior
 - Never
 - Occasionally
 - Frequently
 - Always



SPM-2: Scoring

■ Paper

■ AutoScore™ Form



Never	Occasionally	Frequently	Always	This student ...	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	31. Is distressed by the tastes of foods that do not bother other children.	TASTE AND SMELL
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	32. Fails to notice strong or unusual smells, such as paint or markers.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	33. Smells new objects or items before using them.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	34. Sniffs or smells people.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	35. Is distressed at the scent of soap, perfume, or skin lotions.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	36. Gags or vomits at certain smells.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	37. Avoids the bathroom because of the smell.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	38. Refuses to try new foods or snacks.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	39. Insists on eating only certain foods or brands of food.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	40. Avoids foods that have a strong flavor or smell.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	41. Chews on toys, clothes, or other objects.	BODY AWARENESS
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	42. Moves classroom furniture roughly or with too much force.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	43. Stomps or slaps feet when walking or climbing stairs.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	44. Jumps down from heights with strong impact onto feet.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	45. Uses too much pressure for a task, such as slamming doors or pressing too hard on the keyboard.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	46. Plays too roughly with peers.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	47. Writes or colors with too much or too little pressure.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	48. Spills or knocks over items.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	49. Breaks things by pressing, pulling, or pushing too hard.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	50. Puts too much food in mouth.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	51. Hooks his or her feet around the bottom of the chair while seated.	BALANCE AND MOTION
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	52. Rocks, sways, or squirms when seated.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	53. Avoids walking on uneven surfaces that require balance, such as dirt or grass.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	54. Has to lean on something when sitting on the floor.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	55. Slumps forward, leans back, or holds head up in hands while seated.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	56. Shows poor coordination when using both sides of the body, such as for a two-handed activity like cutting with scissors or catching a ball.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	57. Fails to catch himself or herself when falling.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	58. Has poor balance.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	59. Trips, falls, or loses balance when running or playing sports.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	60. Seeks out opportunities to be upside down.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	61. Fails to perform consistently in daily tasks.	PLANNING AND IDEAS
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	62. Fails to solve problems effectively.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	63. Fails to perform the proper sequence of actions in everyday routines, such as putting away school materials.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	64. Fails to complete tasks with multiple steps.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	65. Has difficulty correctly imitating movements, sounds, or expressions.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	66. Has difficulty accurately copying a completed model to make an identical project.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	67. Has difficulty keeping a notebook or workspace organized.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	68. Needs more practice than others to learn a new skill.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	69. Takes more time than others to complete necessary tasks.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	70. Has difficulty generating ideas for what to make or build, such as when playing with blocks or craft materials.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	71. Works well as part of a group.	SOCIAL PARTICIPATION
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	72. Shows caring toward other students.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	73. Handles frustration without outbursts or aggressive behavior.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	74. Willingly plays with peers in a variety of games and activities.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	75. Joins in play with others without disrupting the ongoing activity.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	76. Carries on a conversation without standing or sitting too close to others.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	77. Maintains appropriate eye contact during conversation.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	78. Easily shifts from one activity to another.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	79. Shares classroom materials when asked.	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	80. Demonstrates respect and courtesy toward teachers and staff.	

Figure 2.2. Sample of a Completed Child School AutoScore Form

SPM-2: Scoring (cont.)

- Online
 - WPS Online Evaluation System



SPM-2: Standardization

- Standardization sample included 3,850 typically developing participants
 - 4 months to 87 years
- Separate sample of 639 clinical participants (across all age levels) used to verify SPM-2 differentiates between typical and clinical populations



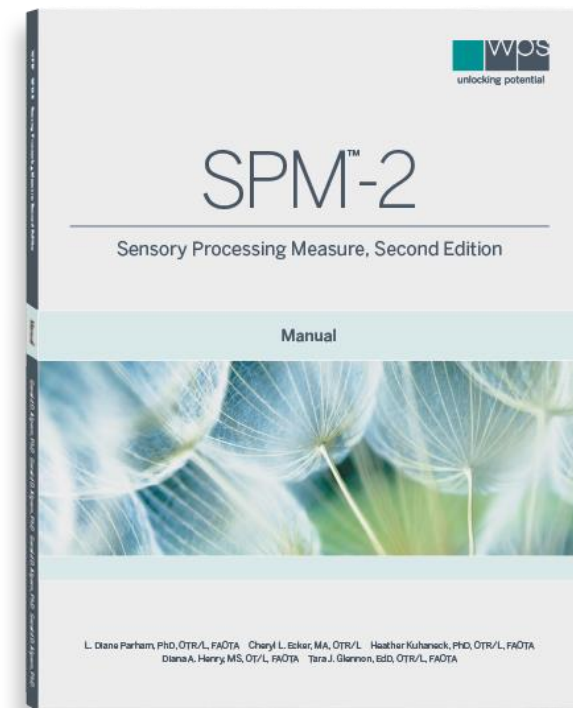
SPM-2: Standardization *(cont.)*

- Separate demographically representative normative samples were collected for each age level:
 - Infant/Toddler ($n = 697$)
 - Preschool ($n = 606$)
 - Child ($n = 840$)
 - Adolescent ($n = 985$)
 - Adult ($n = 722$)



SPM-2: Reliability

- Evidence supporting reliability included the following (median) estimates across all five age levels:
 - Internal consistency (.86)
 - Test–retest reliability (.84)
 - Alternate-forms reliability (.78)
 - Interrater reliability (.66)



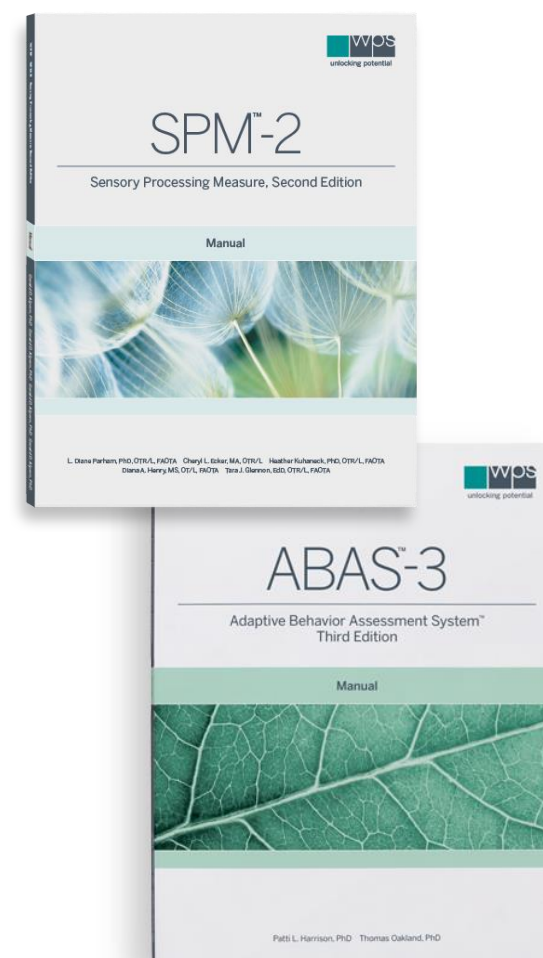
SPM-2: Validity

- Content validity
 - Sensory domains
 - Vulnerabilities
- Structural validity
 - Strong
 - Interscale correlations
 - Factor analyses

The image displays a collage of SPM-2 (Sensory Processing Measure, Second Edition) forms. The forms are organized into four main sections, each representing a different age group: 1. Child AutoScore Form (Home Form) for ages 5-12 years. 2. Adult AutoScore Form (Rater Report Form) for ages 12-18 years. 3. Infant and Toddler AutoScore Form (Toddler Form) for ages 10-30 months. 4. Preschool AutoScore Form (Home Form) for ages 2-5 years. Each section includes a 'Score Summary Sheet' with columns for various sensory domains (e.g., VSS, VLS, HEA, TAU, TAI, BOD, BAL, PLN, ECC, F, N) and a 'Total' score. The forms also include a 'Child being evaluated' section with fields for name, date of birth, age, and relationship to the child. The WPS logo and the tagline 'unlocking potential' are visible on each form.

SPM-2: Validity *(cont.)*

- Construct validity
 - Equivalence with SPM and SPM-P
 - Convergence with Sensory Profile and Sensory Profile 2
 - Convergence with Adaptive Behavior Assessment System, Third Edition (ABAS-3)



SPM-2: Validity *(cont.)*

- Clinical validity
 - Effect Size
 - .40 to .50 range for Infant/Toddler and Preschool age levels
 - .50 to .80 range for Child and Adolescent age levels
 - .20 to .30 range for Adult age level



SPM-2: Validity *(cont.)*

- Conditional probability


Table 5.35. Conditional Probability Analysis for Detection of Sensory Processing Disorder

Sensory Total (ST) <i>T</i> -score cutoff points	Sensitivity	Specificity
55	.87	.67
60	.72	.83
65	.51	.92
70	.23	.98
75	.03	.99

Note. Sample included 39 individuals with sensory processing/integration disorders and 3,096 typically developing individuals from the standardization sample; analysis included every form.

SPM-2: Validity *(cont.)*

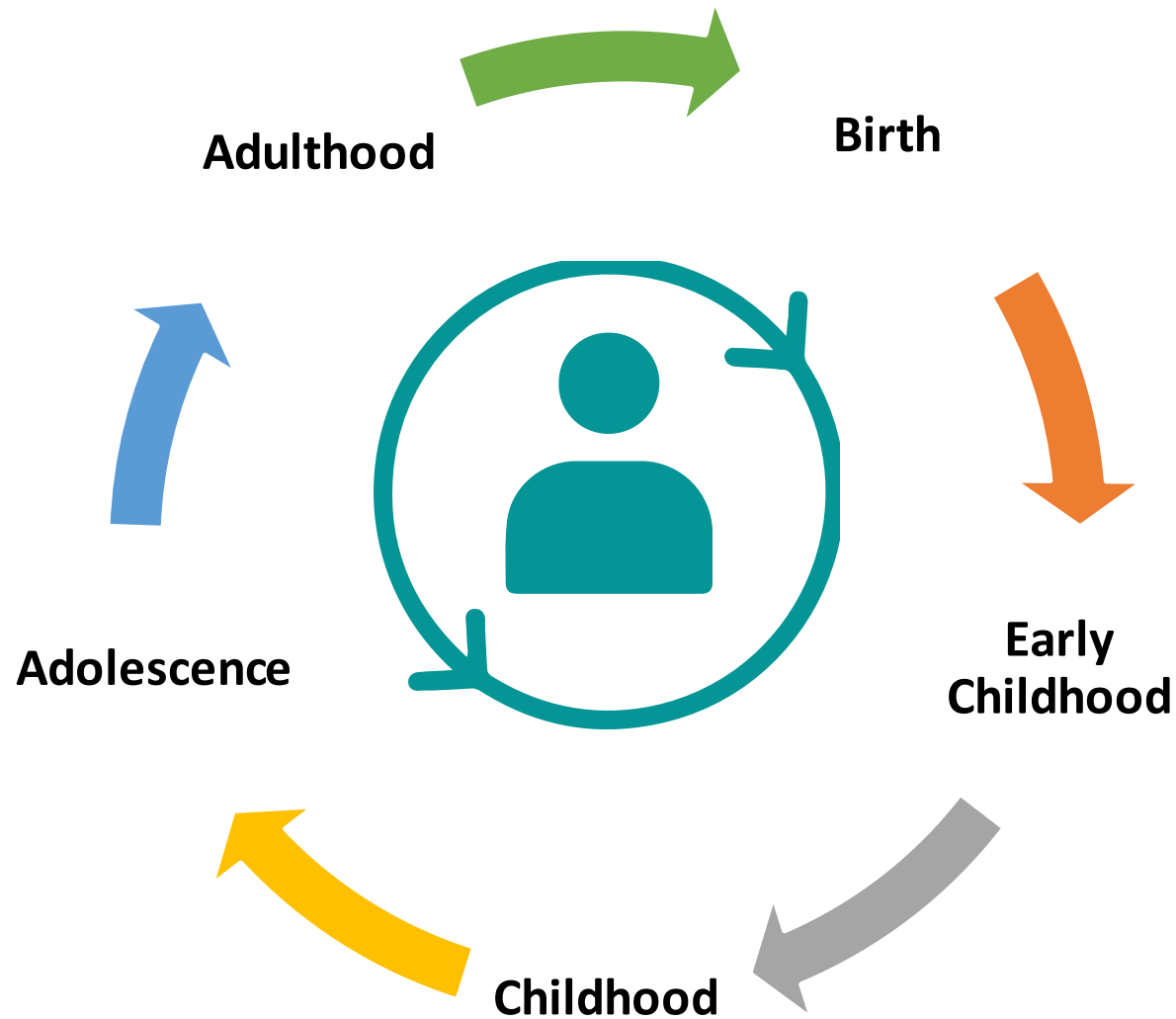
- Equivalence: Paper vs. Digital Administration
 - High median correlations for Scales (.81–.87) and Sensory Totals (.92)
- Spanish–English
 - Moderate to Strong for Scales (.58) and Sensory Totals (.71)



Intervention Across the Lifespan



Intervention Across the Lifespan



Intervention: Sensory Processing/ Sensory Integration

- Intervention
 - Ayres Sensory Integration®



Intervention: Sensory Processing/ Sensory Integration *(cont.)*

- Intervention
 - Sensory-based strategies



WPS Online Evaluation System



SPM-2: Use in Telehealth

- <https://pages.wpspublish.com/telepractice-101>
- platform.wpspublish.com
- Online administration
 - WPS Online Evaluation System (OES)



Resources



**WPS Online
Evaluation System:**
platform.wpspublish.com



WPS Video Resources:
<https://www.wpspublish.com/webinars>



WPS Content Hub:
<https://www.wpspublish.com/content-hub>



Telepractice Page:
<https://pages.wpspublish.com/telepractice-101>



WPS YouTube Channel:

- How to Use Digital Easels
- Overview of New DP-4
- What You Need to Know About the Arizona-4 Assessment

WPS Resources

Assessments



Resources



Training



SPM-2: Coming Soon

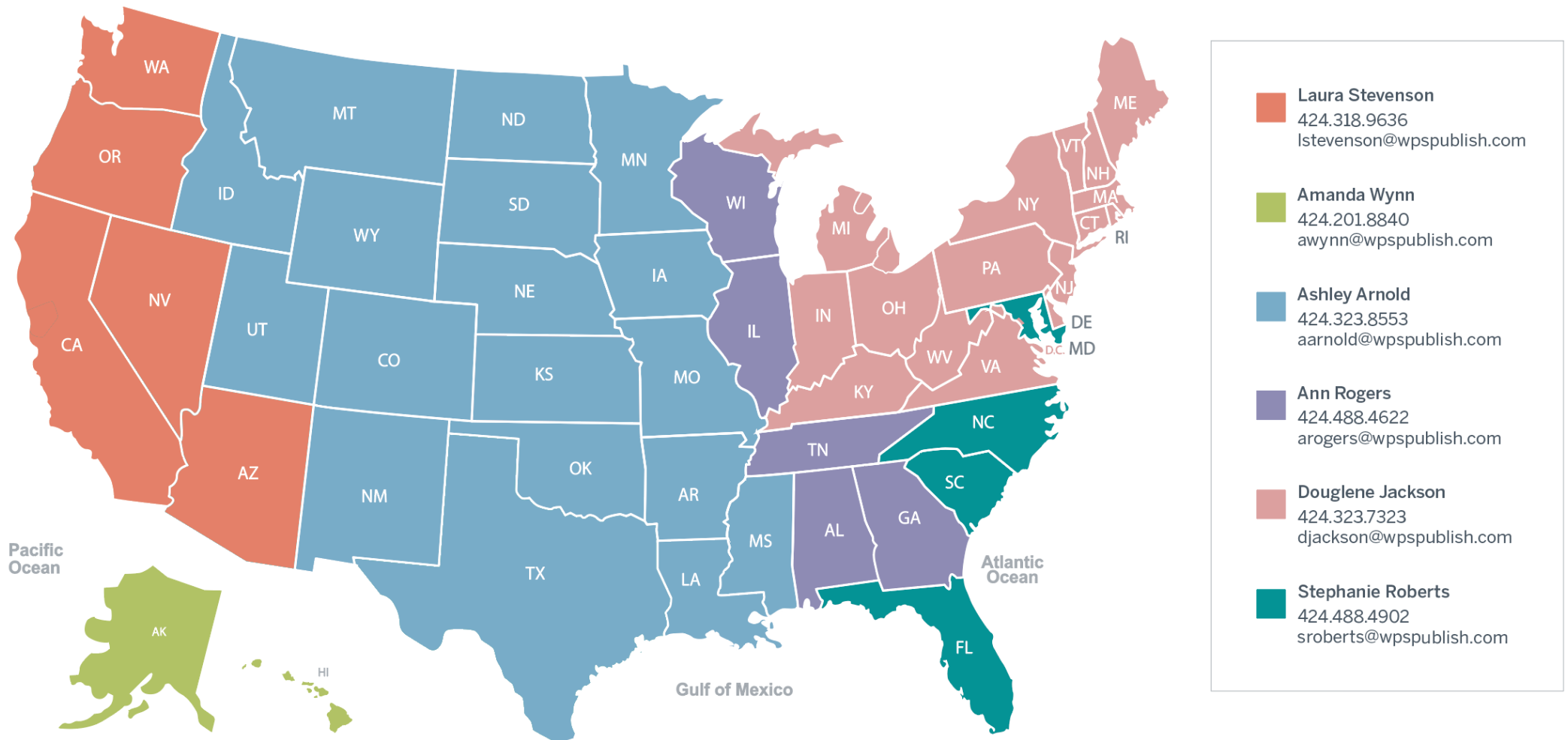
- Available for pre-order: pages.wpspublish.com/SPM2
- Pre-order today and get 10% OFF with code **SPM2PW!**



Questions?



WPS Territories



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Hours of Operation



6:00 AM - 4:00 PM PST
Monday through Friday

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Nature of Inquiry*

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