

### Outline for PT Annual Exam:

<u>Population</u>	<u>Why</u>
Preterm infants that required NICU admission; now discharged and <5 years old	Preterm births are a leading cause for infant morbidity and account for “half of long-term neurologic disabilities such as cerebral palsy (CP), cognitive impairment, and behavioral problems”. <sup>1</sup> “Infants born preterm or with NICU stays are at risk for developmental delays and medical complications that require ongoing follow-up”. <sup>1</sup> This annual exam will focus on preterm infants that required a NICU admission who are still less than 5 years old to focus on the early intervention and early development of the child. After 5 years of age, I would suggest an updated annual exam that is more focused on school related activities since the child will likely start school at around this age. This annual exam is intended for the population of preterm infants that required NICU admission who have NOT yet started school.

### Annual Exam: Subjective

#### **Demographics<sup>2</sup>**

Name of Child:

Sex:

Date of Birth:

Gestational Age (weeks at time of birth):

Age (chronological):

Corrected/Adjusted Age (if applicable):

Name(s) of Primary Caretaker/Caregiver(s):

Relationship to Child:

Ethnicity

- Hispanic or Latino
- Not Hispanic or Latino

Race

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White or Caucasian

**General Information<sup>2</sup>**

Is the child currently enrolled in early intervention/pre-school/childcare? Yes / No

If yes, please indicate where and the current service provider:

Does the child have the necessary and adequate amount of food to eat? Yes / No

Does the child have safe and adequate housing? Yes / No

Please list any basic necessity concerns here: \_\_\_\_\_

Does the child have access to healthcare and/or health insurance?

Insured

Underinsured

Uninsured

Name of provider/insurance: \_\_\_\_\_

**Medical/Surgical History<sup>2</sup>**

Are the child's immunizations up to date? Yes / No

Does the child have a primary care provider or agency? Yes / No

If yes, name of provider or agency and contact number: \_\_\_\_\_

If no, name any previous provider or agency: \_\_\_\_\_

Does the child see any other health care specialists (orthopedic, neurologic, other)? Yes / No

If yes, please list the specialty and provider's name: \_\_\_\_\_

Does the child have a primary diagnosis? Yes / No

If yes, please describe: \_\_\_\_\_

Are there any issues that affect the child's health/function/movement? Yes / No

If yes, please describe: \_\_\_\_\_

Does the child have any precautions/contraindications to movement/ positioning? Yes / No

If yes, please describe: \_\_\_\_\_

Does the child take any medications? Yes / No

If yes, please list (include dosage if known): \_\_\_\_\_

Has the child had any of following problems within the past year:

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Bowel problems (eg, constipation, leakage of gas or stool, irritable bowel syndrome) | <input type="checkbox"/> Difficulty with weakness or muscle fatigue | <input type="checkbox"/> Repeated fever, chills, or sweats |
| <input type="checkbox"/> Coordination problems  | <input type="checkbox"/> Dizziness or blackouts                     | <input type="checkbox"/> Shortness of breath               |
| <input type="checkbox"/> Difficulty with muscle tone or unusual movements                                     | <input type="checkbox"/> Headaches                                  | <input type="checkbox"/> Unexplained nausea/vomiting       |
| <input type="checkbox"/> Seizures   | <input type="checkbox"/> Hearing problems                           | <input type="checkbox"/> Unexplained weight loss/gain      |
| <input type="checkbox"/> Dental caries  | <input type="checkbox"/> Heart palpitations                         | <input type="checkbox"/> Urinary problems                  |
| <input type="checkbox"/> Difficulty sleeping  | <input type="checkbox"/> Joint pain or swelling                     | <input type="checkbox"/> Vision problems                   |
| <input type="checkbox"/> Difficulty swallowing  | <input type="checkbox"/> Loss of appetite                           | <input type="checkbox"/> Other problems:                   |
| <input type="checkbox"/> Difficulty walking   | <input type="checkbox"/> Loss of balance                            | _____  |
|   | <input type="checkbox"/> Pain at night                              | _____  |
|   | <input type="checkbox"/> Problems with sensation                    | _____  |

How long was the child in the NICU?

Has the child ever had surgery or hospitalization outside of NICU admission? Yes / No

If yes, please describe and include dates and length of hospitalization: \_\_\_\_\_

**Personal and Environmental Factors<sup>2</sup>**

Is the child speaking? Yes / No

If yes, what is the child/family's preferred language? \_\_\_\_\_

What is the child's primary means of communication? \_\_\_\_\_

Is a language interpreter needed for this visit? \_\_\_\_\_

Does the child use any adaptive or corrective equipment? Yes / No

If yes, please list: \_\_\_\_\_

Are there any barriers in the home that limit the child's ability to independently move throughout the home (i.e. stairs)?

Yes / No If yes, please describe: \_\_\_\_\_

How many hours of sleep does the child get on average per night? \_\_\_\_\_

**Activity<sup>2</sup>**

Approximately how much per day does the child spend engaged in physical activity? \_\_\_\_\_

What kind of physical activity? (i.e. tummy time, playground, sports) \_\_\_\_\_

What activities does the child enjoy and do best?

Is there anything limiting the child from engaging in desired level of physical activity? \_\_\_\_\_

Any additional information or concerns:

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**Annual Exam: Objective**

<b><u>Question/test</u></b>	<b><u>What testing</u></b>	<b><u>Positive finding</u></b>	<b><u>Clinical reasoning (Evidence if indicated)</u></b>
<p>Growth Standards for <b>27-64 weeks</b> postmenstrual age:</p> <ul style="list-style-type: none"> <li>-Weight</li> <li>-Length</li> <li>-Head Circumference</li> </ul>	Growth of child	Outside of normal standards for age and sex (percentiles given)	Determine what percentile the infant/child (27-64 weeks premenstrual age) is regarding weight, length and head circumference according to sex <sup>4,5</sup>
<p>Anthropometrics for children <b>0-5 years</b> old:</p> <ul style="list-style-type: none"> <li>-Weight for age</li> <li>-Weight for height</li> <li>-BMI for age</li> </ul>	Growth of child	Outside of normal standards for age and sex	Determine whether child is within normal standards of growth according to the WHO Child Growth Standards <sup>6</sup> for children 0-5 years old
BAYLEY III- Motor Scale (gross motor and fine motor subtests)	Fine and gross motor function	Compare raw and scaled scores to standardized norms and percentile ranks	Primary purpose of Bayley-III is to identify children ages 16 days to 42 months 15 days with developmental delay <sup>7</sup> . All subtests can be performed independently <sup>7</sup> , so the motor scale is suggested to gather reliable and valid data regarding motor development that is also sensitive to changes over time. The entire assessment can take 30-90 minutes <sup>7</sup> , therefore completing only the motor scale subtests should only take ~10-15 minutes.

Early Problem Solving Indicator	Cognitive problem solving in infants and toddlers <sup>8</sup>	Compare to standardized percentile norms.	A quick 6 minute observational assessment where the child plays with a familiar adult to measure progress towards proficiency in cognitive problem solving <sup>8,9</sup> For children 6 to 36 months of age <sup>9</sup>
Hammersmith Infant Neurological Examination (HINE)	Assessment for early diagnosis of cerebral palsy (CP)	Global scores are reported as optimal if they are equal or above 73 at 9 to 12 months, or equal or above 70 and 67 at 6 months and 3 months, respectively <sup>10</sup> . Score can range from 0-78. <sup>10</sup>	An early neurological examination tool for the diagnosis of cerebral palsy. <sup>10</sup> Designed to evaluate infants 2-24 months of age and can be completed in 5-10 minutes. <sup>10</sup> Preterm infants are a high-risk population for developing CP. <sup>10</sup>

**Resources/referrals:**

Test item	Resource/referral	Reasoning
Subjective-speaking and means of communication	Speech Language Pathologist	If children have not begun to communicate or speak by a certain age it can be indicative of developmental delay. "Expressive vocabulary delays at 24 months of age increase children's risk for later speech/language services". <sup>12</sup> As we perform an annual exam on this population that is already at risk for developmental problems and delay, this is a vital component of development we want to monitor and need to refer when there's reason for concern.
HINE	Physician for MRI	One of the most predictive and sensitive tools for diagnosing CP in infants and children is MRI. <sup>11</sup> If the child scored a concerning score on the HINE, I would want to refer back to the physician with the HINE results and ask for MRI to confirm if the child may have CP.

<p>Delay in milestones or motor skills</p>	<p>Parent Resource- CDC Milestone Tracker smartphone application (Image 1)</p>	<p>No one is around a child more than their parent(s) or caregiver(s) so it is important to involve them in their child's care and give them tools to be educated on their child's development. This smartphone application was created by the CDC and helps parents keep track of their child's milestones so they can act early if there's any concern. "From birth to 5 years, your child should reach milestones in how [they] play, learn, speak, acts and moves. Track your child's development and act early if you have a concern".<sup>15</sup></p>
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## **Bibliography:**

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- 16. CDC. Centers for Disease Control and Prevention. CDC’s Milestone Tracker App. <https://www.cdc.gov/ncbddd/actearly/milestones-app.html>

**Appendix:**

Image 1: CDC Milestone Tracker app flier in English and Spanish

