# **Gross Motor Function Measure (GMFM)**

Child's Name:		
Assessment Date: _	Date of Birth:	 Age:
Evaluator's Name:		
Testing Condition:		

# **Objectives:**

Gross Motor Function Measure (GMFM) is a standardized observational instrument designed to assess gross motor function in children with cerebral palsy or other neurological impairments.

The GMFM is typically used to evaluate changes in gross motor function over time or in response to interventions, such as physical therapy or surgery. It comprises 88 items that assess a child's ability to perform various motor tasks, such as rolling, crawling, sitting, standing, and walking. The items are grouped into five dimensions:

- Lying and Rolling: This dimension assesses the child's ability to control their body and move in a supine (lying on their back) and prone (lying on their stomach) position. It includes head control, moving limbs independently, rolling from supine to prone and vice versa, and transitioning between supine and sitting positions. These skills are foundational for more advanced motor tasks and are crucial for a child's ability to change positions independently.
- 2. Sitting: This dimension evaluates the child's ability to maintain various sitting positions, such as unsupported sitting, sitting with a posterior pelvic tilt, and sitting with legs crossed. It also examines the child's ability to perform tasks while sitting, like reaching for objects, weight shifting, and transitioning from sitting to kneeling. Sitting skills are essential for numerous daily activities, including self-care, social interactions, and play.
- 3. Crawling and Kneeling: This dimension assesses the child's ability to move on their hands and knees (crawling) and maintain a kneeling position, both half-kneeling and tall-kneeling. These skills are essential for independent mobility, allowing the child to explore their environment and access various locations. Crawling and kneeling also serve as transitional movements bridging the gap between sitting and standing.
- 4. Standing: This dimension evaluates the child's ability to achieve and maintain an upright standing position, with and without support. It also examines the child's ability to perform standing tasks, such as reaching for objects, weight shifting, and transitioning from standing to other positions. Standing is a fundamental skill for functional mobility, a prerequisite for walking and other advanced motor tasks.
- 5. Walking, Running, and Jumping: This dimension assesses the child's ability to perform various locomotor skills, such as walking, running, jumping, and stair climbing. It includes tasks like walking with and without support, walking on different surfaces, navigating obstacles, and jumping on both feet or one foot. These skills are crucial for independent mobility and participation in various physical and social activities.
- 6. Each dimension consists of items scored on a four-point scale from 0 to 3, with higher scores indicating better performance. The scores for each dimension can be combined to create a total GMFM score, which can be used to track changes in a child's gross motor function over time or evaluate the effectiveness of interventions.

## Scoring:

- 0 does not initiate
- 1 initiates
- 2 partially completes
- 3 completes
- NT- not tested

# **Procedure:**

The Gross Motor Function Measure (GMFM) is conducted through a series of observational assessments performed by a trained evaluator, such as a physical therapist or a pediatric specialist. The evaluator observes the child performing each item and scores their performance based on predetermined criteria. Here's an overview of the process:

- 1. Preparation: Before conducting the assessment, the evaluator should familiarize themselves with the GMFM scoring manual, which provides detailed instructions on how to score each item. The evaluator should also gather any necessary equipment, such as a mat or a chair, and ensure adequate space for the child to perform the tasks.
- 2. Establish rapport: The evaluator must establish rapport with the child and their caregivers to ensure a comfortable and cooperative environment. The evaluator should explain the purpose of the assessment and what to expect during the session.
- 3. Warm-up: The child may need a brief warm-up period to become comfortable with the environment and the evaluator. This could include engaging in a few familiar activities or exercises.
- 4. Assessment: The evaluator will guide the child through the GMFM-66 items, asking them to perform each task on the test to the best of their ability. The items are organized into five dimensions: lying and rolling, sitting, crawling and kneeling, standing and walking, running and jumping. The evaluator will observe the child's performance and score each item on a four-point scale from 0 to 3, according to the scoring criteria provided in the manual.
- 5. Scoring and interpretation: After completing the assessment, the evaluator will calculate the scores for each dimension and the total GMFM score. These scores can be used to track changes in the child's motor function over time or evaluate the effectiveness of interventions. The scores can also be compared with age-matched norms or the child's previous GMFM scores to assess progress.
- 6. Documentation and communication: The evaluator should document the child's performance, scores, and relevant observations. Communicating the results to the child's caregivers and other care team members is important to inform decision-making and develop appropriate intervention plans.

Conducting the GMFM requires training and expertise to ensure accurate and reliable scoring. Evaluators must be familiar with the scoring manual and practice scoring items to build their skills and confidence in using the instrument.

#### **GROSS MOTOR FUNCTION MEASURE**

Check the appropriate score: If an item is not tested (NT), select the item number in the right column.

ITEM	A. LYING AND ROLLING		S	CORE		NT
1.	SUP, HEAD IN MIDLINE: TURNS HEAD WITH EXTREMITIES SYMMETRICAL	0 🗌 0	1	2	3	1.
2.	SUP: BRINGS HANDS TO MIDLINE, FINGERS ONE WITH THE OTHER	0 🗌 0	1	2	3	2.
3.	SUP: LIFTS HEAD 45°	. 0	1	2	3	3.
4.	SUP: FLEXES R HIP & KNEE THROUGH FULL RANGE	0 🗌 0	1	2	3	4.
5.	SUP: FLEXES L HIP & KNEE THROUGH FULL RANGE	0 🗌 0	1	2	3	5.
6.	SUP: REACHES OUT WITH R ARM, HAND CROSSES MIDLINE TOWARD TOY	. 0	1	2	3	6.
7.	SUP: REACHES OUT WITH LARM, HAND CROSSES MIDLINE TOWARD TOY	0 🗌 0	1	2	3	7.
8.	SUP: ROLLS TO PR OVER R SIDE	0 🗌 0	1	2	3	8.
9.	SUP: ROLLS TO PR OVER L SIDE	. 0	1	2	3	9.
10.	PR: LIFTS HEAD UPRIGHT	0 🗌 0	1	2	3	10
11.	PR ON FOREARMS: LIFTS HEAD UPRIGHT, ELBOWS EXT., CHEST RAISED	0 🗌 0	1	2	3	11.
12.	PR ON FOREARMS: WEIGHT ON R FOREARM, FULLY EXTENDS OPPOSITE ARM FORWARD.	0	1	2	3	12
13.	PR ON FOREARMS: WEIGHT ON L FOREARM, FULLY EXTENDS OPPOSITE ARM FORWARD	. 🗌 0	<b>1</b>	2	3	13
14.	PR: ROLLS TO SUP OVER R SIDE	0 🗌 0	1	2	3	14
15.	PR: ROLLS TO SUP OVER L SIDE	. 0	1	2	3	15
16.	PR: PIVOTS TO R 90° USING EXTREMITIES	0	1	2	3	16
17.	PR: PIVOTS TO L 90° USING EXTREMITIES	0	1	2	3	17.
	TOTAL DIMENSION A:					
ITEM	B. SITTING		S	CORE		NT
18.	SUP, HANDS GRASPED BY EXAMINER: PULLS SELF TO SITTING WITH HEAD CONTROL	o	1	2	3	18
19.	SUP: ROLLS TO R SIDE, ATTAINS SITTING	0	1	2	3	19
20.	SUP: ROLLS TO L SIDE, ATTAINS SITTING	0	1	2	3	20
21.	SIT ON MAT, SUPPORTED AT THORAX BY THERAPIST: LIFTS HEAD UPRIGHT, MAINTAINS 3 SECONDS	0	1	2	3	21
22.	SIT ON MAT, SUPPORTED AT THORAX BY THERAPIST: LIFTS HEAD MIDLINE, MAINTAINS 10 SECONDS	0	<b>1</b>	2	3	22
23.	SIT ON MAT, ARM(S) PROPPING: MAINTAINS, 5 SECONDS	0	1	2	3	23
24.	SIT ON MAT: MAINTAIN, ARMS FREE, 3 SECONDS	0	1	2	3	24

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25.	SIT ON MAT WITH SMALL TOY IN FRONT: LEANS FORWARD, TOUCHESTOY, RE-ERECTS WITHOUT ARM PROPPING	0	1	2	3	25.
26.	SIT ON MAT: TOUCHES TOY PLACED 45° BEHIND CHILD'S R SIDE, RETURNS TO START	0	1	2	3	26.
27.	SIT ON MAT: TOUCHES TOY PLACED 45° BEHIND CHILD'S L SIDE, RETURNS TO START	0	1	2	3	27.
28.	R SIDE SIT: MAINTAINS, ARMS FREE, 5 SECONDS	0	1	2	3	28.
29.	L SIDE SIT: MAINTAINS, ARMS FREE, 5 SECONDS	0	1	2	3	29.
30.	SIT ON MAT: LOWERS TO PR WITH CONTROL	0	1	2	3	30.
31.	SIT ON MAT WITH FEET IN FRONT: ATTAINS 4 POINT OVER R SIDE	0	1	2	3	31.
32.	SIT ON MAT WITH FEET IN FRONT: ATTAINS 4 POINT OVER L SIDE	0	1	2	3	32.
33.	SIT ON MAT: PIVOTS 90°, WITHOUT ARMS ASSISTING	0	1	2	3	33.
34.	SIT ON BENCH: MAINTAINS, ARMS AND FEET FREE, 10 SECONDS	0	1	2	3	34.
35.	STD: ATTAINS SIT ON SMALL BENCH	0	1	2	3	35.
36.	ON THE FLOOR: ATTAINS SIT ON SMALL BENCH	0	1	2	3	36.
37.	ON THE FLOOR: ATTAINS SIT ON LARGE BENCH	0	1	2	3	37.
	TOTAL DIMENSION B:					
ITEM	TOTAL DIMENSION B: C. CRAWLING & KNEELING		S	CORE		NT
ITEM 38.		0	s	CORE	3	NT
	C. CRAWLING & KNEELING	o	S		3 3	
38.	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6')	0	1	2		38.
38. 39.	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS.	0 0	1	2 2	3	38.
38. 39. 40.	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS. 4 POINT: ATTAINS SIT ARMS FREE	0 0	1	2 2 2 2	3 3	38. 39. 40.
38. 39. 40. 41.	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS. 4 POINT: ATTAINS SIT ARMS FREE PR: ATTAINS 4 POINT, WEIGHT ON HANDS AND KNEES 4 POINT: REACHES FORWARD WITH R ARM, HAND ABOVE SHOULDER	0 0 0		2 2 2 2 2	3 3 3	38. 39. 40. 41.
38. 39. 40. 41. 42.	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS. 4 POINT: ATTAINS SIT ARMS FREE PR: ATTAINS 4 POINT, WEIGHT ON HANDS AND KNEES 4 POINT: REACHES FORWARD WITH R ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: REACHES FORWARD WITH L ARM, HAND ABOVE SHOULDER			2 2 2 2 2		38. 39. 40. 41.
38. 39. 40. 41. 42. 43.	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS. 4 POINT: ATTAINS SIT ARMS FREE PR: ATTAINS 4 POINT, WEIGHT ON HANDS AND KNEES 4 POINT: REACHES FORWARD WITH R ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: REACHES FORWARD WITH L ARM, HAND ABOVE SHOULDER LEVEL			□2 □2 □2 □2 □2 □2		38. 39. 40. 41. 42.
<ul> <li>38.</li> <li>39.</li> <li>40.</li> <li>41.</li> <li>42.</li> <li>43.</li> <li>44.</li> </ul>	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS. 4 POINT: ATTAINS SIT ARMS FREE PR: ATTAINS 4 POINT, WEIGHT ON HANDS AND KNEES 4 POINT: REACHES FORWARD WITH R ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: REACHES FORWARD WITH L ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: CRAWLS OR HITCHES FORWARD 1.8m(6').			□2 □2 □2 □2 □2 □2 □2		38. 39. 40. 41. 42. 42. 43. 44.
<ul> <li>38.</li> <li>39.</li> <li>40.</li> <li>41.</li> <li>42.</li> <li>43.</li> <li>44.</li> <li>45.</li> </ul>	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS. 4 POINT: ATTAINS SIT ARMS FREE PR: ATTAINS 4 POINT, WEIGHT ON HANDS AND KNEES 4 POINT: REACHES FORWARD WITH R ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: REACHES FORWARD WITH L ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: CRAWLS OR HITCHES FORWARD 1.8m(6'). 4 POINT: CRAWLS RECIPROCALLY FORWARD1.8m ( 6')			□2 □2 □2 □2 □2 □2 □2 □2 □2		□ 38. □ 39. □ 40. □ 41. □ 42. □ 42. □ 43. □ 44. □ 45.
<ul> <li>38.</li> <li>39.</li> <li>40.</li> <li>41.</li> <li>42.</li> <li>43.</li> <li>43.</li> <li>44.</li> <li>45.</li> <li>46.</li> </ul>	C. CRAWLING & KNEELING PR: CREEPS FORWARD 1.8m (6') 4 POINT: MAINTAINS, WEIGHT ON HANDS AND KNEES, 10 SECONDS. 4 POINT: ATTAINS SIT ARMS FREE PR: ATTAINS 4 POINT, WEIGHT ON HANDS AND KNEES 4 POINT: REACHES FORWARD WITH R ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: REACHES FORWARD WITH L ARM, HAND ABOVE SHOULDER LEVEL 4 POINT: CRAWLS OR HITCHES FORWARD 1.8m(6'). 4 POINT: CRAWLS RECIPROCALLY FORWARD1.8m (6') 4 POINT: CRAWLS UP 4 STEPS ON HANDS AND KNEES/FEET 4 POINT: CRAWLS BACKWARDS DOWN 4 STEPS ON HANDS AND KNEES/			□2 □2 □2 □2 □2 □2 □2 □2 □2 □2		□ 38. □ 39. □ 40. □ 41. □ 42. □ 42. □ 43. □ 44. □ 45. □ 46.

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50.	HIGH KN: ATTAINS HALF KN ON L KNEE USING ARMS, MAINTAINS, ARMS FREE, 10 SECONDS	0	1	2	3	50.
51.	HIGH KN: KN WALKS FORWARD 10 STEPS, ARMS FREE	0	1	2	3	51.
	TOTAL DIMENSION C:					
ITEM	D. STANDING	L	S	CORE		NT
52.	ON THE FLOOR: PULLS TO STD AT LARGE BENCH	0	1	2	3	52.
53.	STD: MAINTAINS, ARMS FREE, 3 SECONDS	O	1	2	3	53.
54.	STD: HOLDING ON TO LARGE BENCH WITH ONE HAND, LIFTS R FOOT, 3 SECONDS	0	1	2	3	54.
55.	STD: HOLDING ON TO LARGE BENCH WITH ONE HAND, LIFTS L FOOT, 3 SECONDS	0	1	2	3	55.
56.	STD: MAINTAINS, ARMS FREE, 20 SECONDS	0 🗌	1	2	3	56.
57.	STD: LIFTS L FOOT, ARMS FREE, 10 SECONDS	0	1	2	3	57.
58.	STD: LIFTS R FOOT, ARMS FREE, 10 SECONDS	0	1	2	3	58.
59.	SIT ON SMALL BENCH: ATTAINS STD WITHOUT USING ARMS	0	1	2	3	59.
60.	HIGH KN: ATTAINS STD THROUGH HALF KN ON R KNEE, WITHOUT USING ARMS	0	1	2	3	60.
61.	HIGH KN: ATTAINS STD THROUGH HALF KN ON L KNEE, WITHOUT USING ARMS	0	1	2	3	61.
62.	STD: LOWERS TO SIT ON FLOOR WITH CONTROL, ARMS FREE	0	1	2	3	62.
63.	STD: ATTAINS SQUAT, ARMS FREE	0 🗌	1	2	3	63.
64.	STD: PICKS UP OBJECT FROM FLOOR, ARMS FREE, RETURNS TO STAND	0	1	2	3	64.
	TOTAL DIMENSION D:					
ITEM	E: WALKING, RUNNING & JUMPING		S	CORE		NT
65.	STD, 2 HANDS ON LARGE BENCH: CRUISES 5 STEPS TO R	0	1	2	3	65.
66.	STD, 2 HANDS ON LARGE BENCH: CRUISES 5 STEPS TO L	0	1	2	3	66.
67.	STD, 2 HANDS HELD: WALKS FORWARD 10 STEPS	0	1	2	3	67.
68.	STD, 1 HAND HELD: WALKS FORWARD 10 STEPS	0 []	1	2	3	68.
69.	STD: WALKS FORWARD 10 STEPS	0	1	2	3	69.
70.	STD: WALKS FORWARD 10 STEPS, STOPS, TURNS 180°, RETURNS	0	1	2	3	70.
71.	STD: WALKS BACKWARD 10 STEPS	0	1	2	3	71.
72.	STD: WALKS FORWARD 10 STEPS, CARRYING A LARGE OBJECT WITH 2 HANDS	0	1	2	3	72.
73.	STD: WALKS FORWARD 10 CONSECUTIVE STEPS BETWEEN PARALLEL LINES 20cm (8")APART	0	1	2	3	73.

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۸ -	TOTAL DIMENSION E:					
88.	STD ON 15cm (6") STEP: JUMPS OFF, BOTH FEET SIMULTANEOUSLY	0	L 1	2	3	88
87.	STD: WALKS DOWN 4 STEPS, ALTERNATING FEET		1	2	3	87.
86.	STD: WALKS UP 4 STEPS, ALTERNATING FEET	0 []	1	2	3	86
85.	STD, HOLDING 1 RAIL: WALKS DOWN 4 STEPS, HOLDING 1 RAIL, ALTERNATING FEET	0	1	2	3	85
84.	STD, HOLDING 1 RAIL: WALKS UP 4 STEPS, HOLDING 1 RAIL, ALTERNATING FEET	0	1	2	3	84
83.	STD ON L FOOT: HOPS ON L FOOT 10 TIMES WITHIN A 60cm (24") CIRCLE	0	1	2	3	83
82.	STD ON R FOOT: HOPS ON R FOOT 10 TIMES WITHIN A 60cm (24") CIRCLE	0	1	2	3	82
81.	STD: JUMPS FORWARD 30 cm (12"), BOTH FEET SIMULTANEOUSLY	0	1	2	3	81
80.	STD: JUMPS 30cm (12") HIGH, BOTH FEET SIMULTANEOUSLY	0	1	2	3	80
79.	STD: KICKS BALL WITH L FOOT	0	1	2	3	79
78.	STD: KICKS BALL WITH R FOOT	0	1	2	3	78
77.	STD: RUNS 4.5m (15'), STOPS & RETURNS	0	1	2	3	77
76.	STD: STEPS OVER STICK AT KNEE LEVEL, L FOOT LEADING	0	1	2	3	76
75.	STD: STEPS OVER STICK AT KNEE LEVEL, R FOOT LEADING	0	1	2	3	75
74.	STD: WALKS FORWARD 10 CONSECUTIVE STEPS ON A STRAIGHT LINE 2cm (3/4") WIDE	0	1	2	3	74